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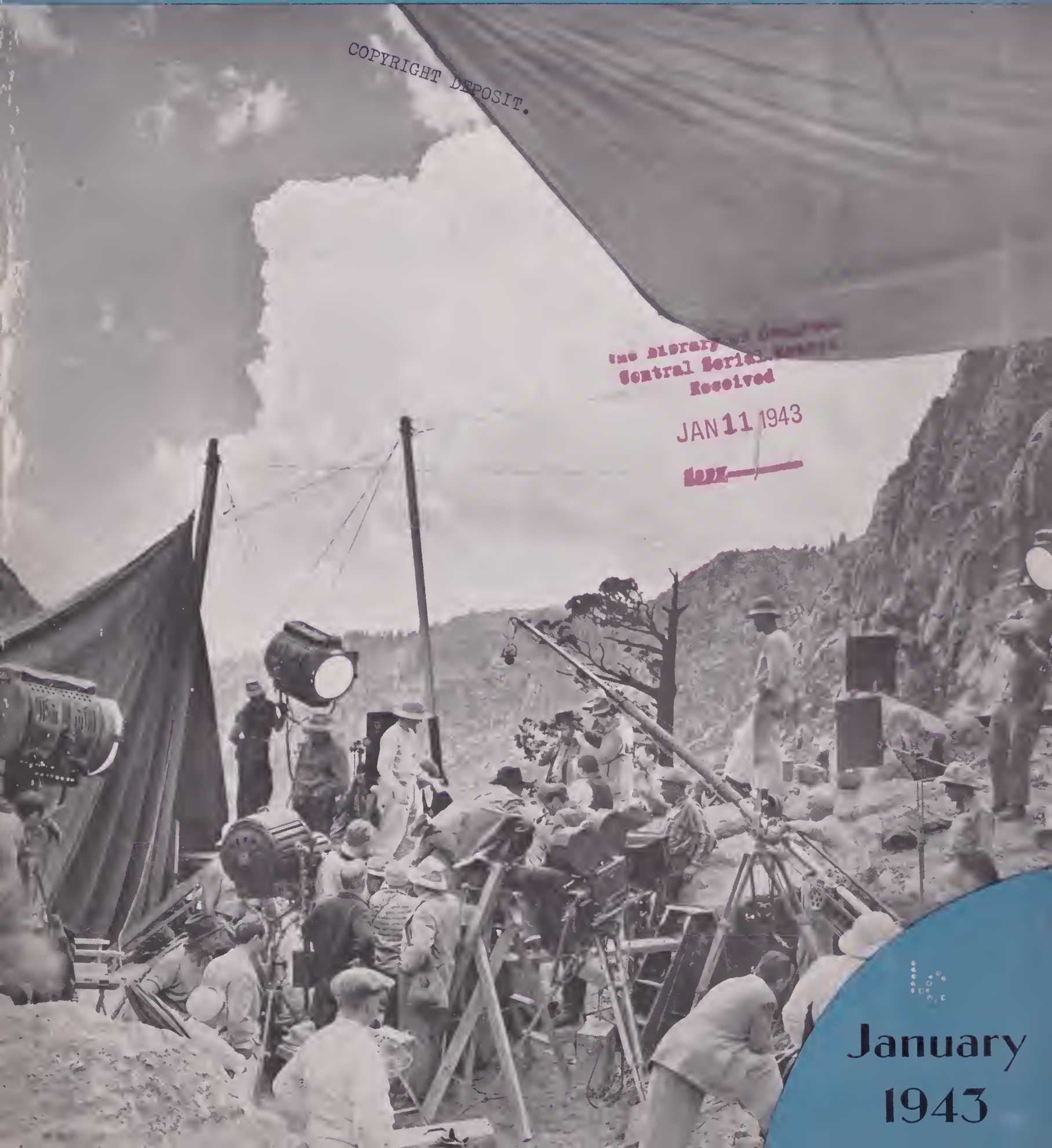
★ THE MOTION PICTURE CAMERA MAGAZINE ★

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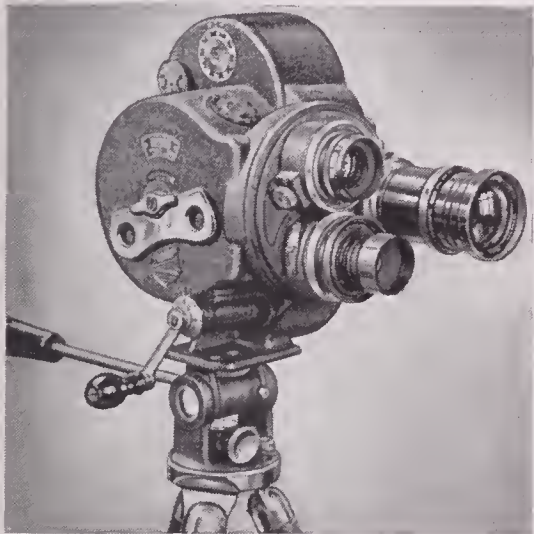
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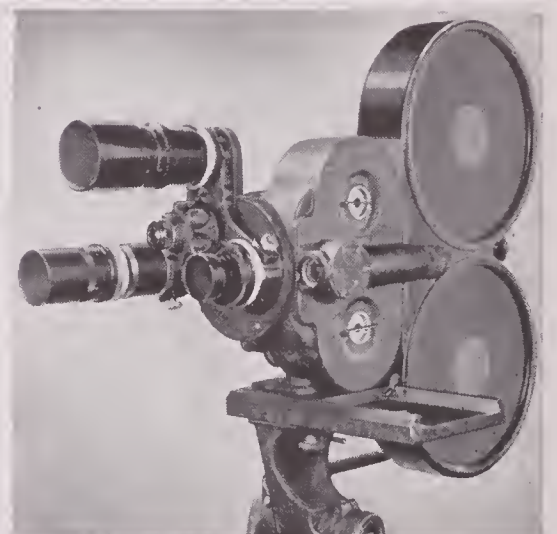
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

JANUARY, 1943

NO. 1

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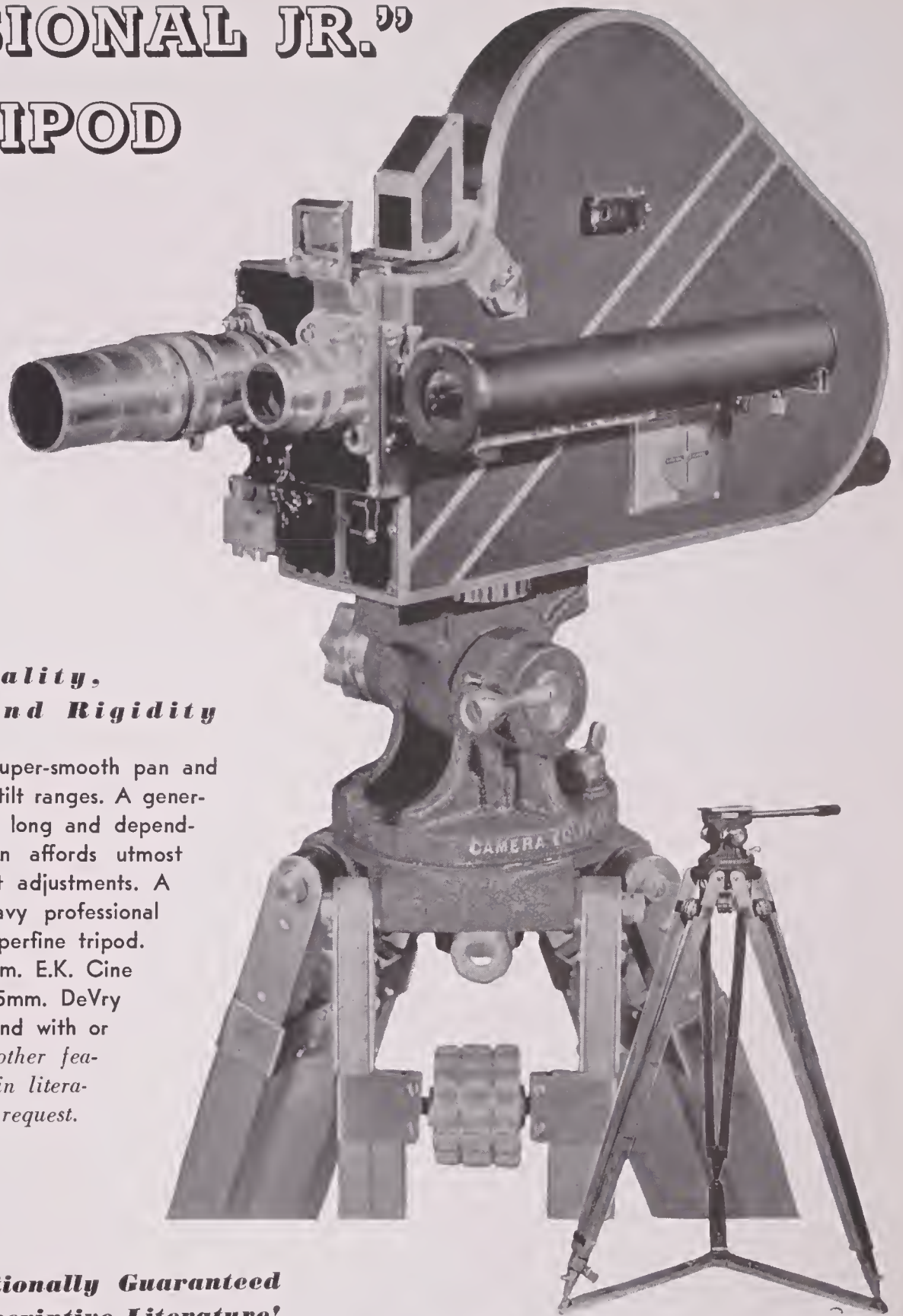


The Front Cover

This month's cover shows Ray Rennahan, A.S.C., (in checkered sweater to left of camera) Technicoloring a scene for Paramount's "For Whom the Bells Toll" on location in the High Sierras. Note use of both arc and incandescent "booster" lights, and overhead scrim. Still by Bob Coburn.

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Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface.

Left—35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

FRANK C. ZUCKER

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The Cunningham Combat Camera was the major development in professional motion picture cameras in 1942.

TECHNICAL

try's leading technicians and creators, not only as worthwhile economies, but as steps toward better production quality. Present experience seems to be bearing out these claims.

Another step in conserving film has been an even more drastic reduction in the number of pre-production tests made. In some studios, tests on motion picture film have been almost entirely eliminated and replaced by tests made under the lighting control of a director of photography, but employing still photographs as the visual medium. Due to the shortage of 16mm. film—especially Kodachrome—the use of 16mm. for testing has fallen off sharply.

In this connection, a suggestion made by Lee Garmes, A.S.C., is worthy of note. He has suggested "pre-photographing" complete productions in 16mm., preferably with single-system sound, and thereafter using the completely edited 16mm. version as a virtual blueprint by which the production itself could be photographed in almost precisely its ultimate release footage, with a minimum of superfluous scenes, overlaps, etc.

On the mechanical side, the use of automatic scene-slaters which make use of the footage inevitably consumed in bringing the camera up to speed to carry scene-identification data has been extended considerably. Several studios, sound engineers, and others have also conducted useful studies of the various systems of synchronizing and starting cameras and recorders, also in the interests of conserving film.

Several decidedly less practical expedients for conserving film were also advanced, but like the "wide film" flurry of a decade ago progressed little farther than the conversational stage, and for much the same reason. These plans all aimed to save film-footage by reducing either the standard picture-frequency or the depth of the frame aperture, or both.

A few enthusiasts advocated reducing the standard taking and projecting speed from the present 90 feet per minute to the former silent-picture speed of 60 feet per minute. Others suggested accompanying the reduction in lineal film speed with a reduction in the depth of the frame: one group favoring reducing the height of the frame from the present 4-sprocket standard to 3, and another group urging the even more extreme change to a frame only two perforations high.

All of these expedients would unquestionably have reduced the industry's consumption of film—especially release-print positive—very materially, but all of them would require the replacement of gearing, and in some cases intermittent movements and optics as well, in all of the country's projectors, which would obviously conserve film at the expense

IN common with almost every other part of our daily living cinematography, both professional and amateur, has been dominantly influenced during 1942 by the fact of America's participation in the war. In some respects this influence has been a limiting factor; but in others it has had the opposite effect of accelerating the development of both existing and new methods and equipment beyond anything which could have been expected otherwise.

Anyone who attempts to chronicle the year's cinetechnical progress must be struck by the fact that his list will contain fewer mentions of new equipment and materials than has been the case in many a year. The necessity of diverting metals, engineering ability, manufacturing capacity and even film itself into channels directly connected with the War Effort has seen to that.

On the other hand these same shortages—to which is speedily being added a shortage of trained technical manpower in the studios—are leading to the development of professional methods and accessories which should prove of lasting value to the industry long after the war is won. In the same way the technique and scope of 16mm. films for educational and training purposes are advancing at an unparalleled pace.

Methods

The methods of professional production are undergoing an almost revolutionary change. Where for nearly forty years it has been an industry-wide tradition that "film is the cheapest thing on the lot," today film has become one of the rarest and most valuable. Due to

the tremendous use of motion pictures by the Armed Forces, drastic reductions in the amount of film available for civilian use have had to be made. In consequence, the keynote of today's production practice has necessarily to be the conservation of every possible inch of film.

Every studio has therefore placed definite limitations on the number of "takes" which can be made of any normal scene, and much more painstaking rehearsal of both dialog and action have become universal. A similar restriction on the number of "takes" which can be rush-printed is also generally applied. Both of these reforms, incidentally, have long been advocated by many of the indus-



The constantly increasing use of 16mm. by the Armed Forces was one of the most significant developments of the year and greatly influenced conditions in both professional and amateur photography.

PROGRESS IN 1942

of critical metals and precision manufacturing plant capacity, to say nothing of industry-wide confusion while the transition was being effected.

Another significant change in the industry's methods was effected by the governmental limitation on the use of new materials in set-construction. Aside from the obvious problems in the construction of interior sets (which will be discussed later), this limitation created new problems in the filming of exteriors.

Several studios met this challenge by sending complete production units on extended location trips, where transportation conditions permitted, to film natural exteriors, as in the cast of Paramount's "For Whom the Bells Toll," where much of the exterior action, originally intended to be filmed on stage-built exterior sets, was photographed under difficult conditions in California's High Sierras. Where actual towns or buildings could be used in lieu of sets, several studios did so, as in the case of Universal's "Shadow of a Doubt," for which director Alfred Hitchcock and cinematographer Joseph Valentine, A.S.C., made use of an entire Northern California town in place of studio-built exterior sets.

In other, less spectacular instances studios arranged to send their units to standing sets in other studios for such scenes. In one current production the exteriors are being filmed on standing exterior sets in no less than five other studios.

With the coming of wartime coastal dim-out regulations, the filming of night exteriors has become another added problem. In some instances, this is being solved by photographing these scenes by daylight with appropriate filters, in some instances on Infra-Red film, and in others on standard panchromatic negative with the popular 23A-56 combination filter. In other instances, where possible, such scenes are being photographed with artificial lighting, under canvas. This problem is by no means to be regarded as completely solved, however.

What may in the long run prove the year's outstanding development in technical methods, however, is the amazing advance made in the professional use of 16mm. film—especially Kodachrome—for subsequent enlargement to 35mm. In addition to a number of excellent short-subjects made in this manner and released in 35mm. Technicolor, two outstanding featurettes—the Navy's "The Battle of Midway," and Walt Disney's "Saludo Amigos!" (live-action sequences)—have been made originally in 16mm. and enlarged, and at least one feature, Loew-Lewyn's "Moon and Sixpence," has employed an enlargement from a 16mm. Kodachrome original to provide a color sequence. Successful tests have also been made using enlarge-

ments from 16mm. originals for process background plates.

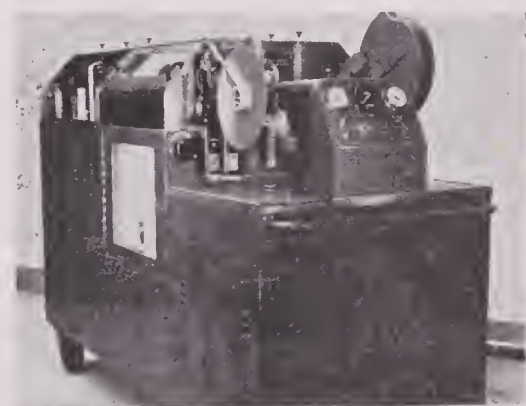
Film—Professional

With all of the nation's raw film producers straining their capacities to the utmost to meet an unprecedented demand for film, obviously no new cine-film products could be introduced during the year. However, recent reports from the Agfa Ansco organization indicate that this company, through one of its subsidiaries, has perfected the cellophane-like "Ozophane" film-base material with which they have been experimenting for some time. Commercial introduction of this product naturally awaits the termination of the war, though it is understood that Ozophane film is in manufacture, with the total output being absorbed by the military for unrevealed special purposes.

Film—Amateur

For the same reason, no new film products in 16mm. or 8mm. have been introduced. Due to the widespread use of 16mm. for military training films and for reduction prints of professional features for entertainment of troops, virtually no 16mm. positive film is available for civilian use. Substandard reversal film products (at this writing) remain available for civilian use, however, though in considerably restricted quantities. In general, manufacturers and dealers are voluntarily rationing substandard film, selling it only in reduced quantities and, in the case of regular commercial users, on a quota basis based on the customer's previous regular purchases.

A new and important use of 16mm. film is in the "V . . . — Mail" service. This is an extension of the "Airgraph" system pioneered abroad by Eastman's British affiliate, Kodak, Ltd., to facilitate transportation of letters between soldiers overseas and their families at home. The letters are written on special blank forms, which are taken to a central depot and photographed on 16mm. film. In this form they occupy only a fraction of the space occupied by



The portable, self-contained and almost wholly automatic Houston developing machine, developed for field service with the Army, was the 1942 highlight in laboratory advancements.



The rapidly expanding use of motion pictures, especially in 16mm. for military and industrial training is bringing enormous advances in visual education technique.

a normal letter: 85,000 letters, which would normally weigh a ton, will weigh but 20 pounds when microfilmed, and a single 100-foot roll of 16mm. film will record over 1700 letters. In this form the letters can be flown to their destination, where they are photographically enlarged to readable size.

Color

Paradoxically, despite the restrictions on the availability of film, the use of color—notably, of course, Technicolor—in 35mm. production has not in the least lessened. If anything, it has increased, with a constantly increasing proportion of the industry's major features being enhanced by the use of color. It may therefore be very definitely concluded that color, properly photographed, has proven itself at the box-office, for otherwise it would certainly not be so widely employed under present conditions.

The Technicolor process in its three-strip form continues to enjoy its virtual monopoly of feature production. Some potential competitors exist, however; three-color Cinecolor seems to have reached the commercial production stage, though there remains the drawback of the lack of adequate three-film cameras other than the Technicolor ones.

Some use has been made of Technicolor's much-rumored single-film or Monopack process which seems essentially to consist of a 35mm. Kodachrome-type reversal original which is subsequently copied to make the necessary three-color separation negatives for regulation Technicolor imbibition release-printing. This process has been used for special scenes in a number of productions—particularly in instances where the bulk of the usual three-film camera was physically impractical, or where camera-speeds higher than the rather limited speeds possible with three-film cameras were necessary—and at least one feature film, Disney's picturization of de Seversky's "Victory Through Air Power," has been completed with Monopack used for all the live-action scenes.

The successful adaptation of the Monopack principle to a negative-positive system and the production of natural-color stills with prints on an opaque base has been achieved in Eastman's Kodacolor

(Continued on Page 36)



Telecasting a demonstration of Army Training Film production. The uppermost lighting units are 3 kw. mercury vapors. Next, the main bank of fluorescents rated at 7 kw. but actually the equivalent of 21 kw. due to greater sensitivity of the "like" to color temperatures approaching daylight. Overhead incandescents are 1000-Watt units totaling 5 kw. Spotlights are 5 kw. Total wattage on the set is 24 kw. Lens apertures, f:4.5. Iconoscope sensitivity equivalent to Weston 50.

The Cameraman's Part In TELEVISION PRODUCTION

By EDWARD ANHALT

Chief Cameraman, CBS Television Studios, New York

ON May 12th of this year, the Federal Communications Commission amended its television regulations to "permit licensees of commercial television stations to broadcast but four hours of program service per week instead of the fifteen hours weekly, required heretofore." In its explanation of the new rules the Commission stated that "The step was taken to prevent recession of this new art to a purely experimental or laboratory stage and to keep it alive, ready to flourish as a public service after the war emergency." The rules, it continued, "will permit licensees to conserve the life of their equipment, particularly tubes, and will permit television stations to operate under conditions of greatly reduced personnel."

Since that date the channeling of television's technicians and equipment into war work has accelerated. Telecasters have had to reduce correspondingly the production value of their live programs and resort more and more to theatrical films or war-effort programs canned on film. Public interest in television, consequently, has dropped to a new low.

Paradoxically, however, the deader the art looks to the public, the more lively it grows behind the locked doors of the laboratory and the conference room.

For some time past almost all television laboratories and personnel have been engaged in applying the electronic principles of television to war work of the most strategic and secretive nature. It is no military secret, however, to state that just as radio grew through World War I, startling technical advances have been made in television since the War emergency began. Out of them will come the technical base of the post-war industry: 1) Adequate screen size, 2) Network television, 3) Satisfactory rendition of picture detail, 4) Full-color television.

Further, careful evaluation of the over-all national experiments in television production, plus our own practical experience at CBS, have led us to the conclusion that we now know how to put our own television programme service on a practical economic basis just as soon as the United Nations' victory releases these technical advances to us.

With reference to the status of television, Standard & Poor's warns, in its current survey of the motion picture industry, that the industry's post-war outlook is "generally favorable, though competition from other forms of amusement now restricted will probably hold earning power below recent high levels for some time . . . over the longer term the industry faces the threat of commercial television."

For all these reasons it seemed to me that an account of television production might be timely even though all our minds and many of our bodies are currently occupied in the pressing matter of winning the war. The following paper is, therefore, submitted with the reminder that it is necessarily a highly personal impression of a controversial subject about which there is no critical literature and little recorded history.

All television set-ups, outside of those encountered in mobile or non-studio pick-ups, are basically similar, however they may differ in details of construction. There is a stage area around which are mobile and fixed light-sources in varying combinations. Over the stage area are microphones on booms and cables. In front of the stage area are from one to three television cameras on dollies, perambulators, or rolling tripods. These are connected through cables to a control room. The control room has monitor tubes, or screens, which show the director the pictures picked up by each of the cameras plus conventional audio monitors and control panels. Cuts, fades, or dissolves may be made between cameras so that at the flick of a switch the picture pick-up of any one camera can be transmitted over the air in preference to that of any other camera.

The director, other production people, and engineers are in touch with the cameramen and studio technicians over headphones. Cameramen talk back to the control room with hand signals since there can be little talking over phones while a show is on the air. The basic problem of effective pick-up is to manoeuvre cameras around cables, lights, sets and booms so as to simultaneously miss none of the action, take effective shots and permit optically pleasant cuts between cameras.

As in radio, the control over the show exercised by producers or directors can be measured almost exactly by the extent of the rehearsal and planning time available. But, regardless of the amount of preparation, television's primary quality of instantaneous transmission rules that much of the responsibility for

Televising a demonstration of the New York Aircraft Warning Service (before Pearl Harbor). Program included mock air raid with film inserts for exteriors.

the success or failure of the pick-up rests with the cameraman. This does not mean that skillful camerawork can pull a bad program very far out of the mud. As in the film industry and radio, bad material can only result in a poor show no matter what the technical workers can do to help it. What it does mean, however, is that good material obviously can only be carried effectively to the television audience if the cameraman gets it there. He cannot save it if it is bad, but he can ruin it if it is good. And since the picture is transmitted over the air when he takes it, he must be right the first time. There are no retakes.

At CBS and, so far as I know, at other studios as well, life for the cameraman was harder than it will be when the industry is fully developed. The pressure of progressive experiment plus the fifteen weekly hours of programmes required by the FCC allowed for so little rehearsal and planning time that most of the action that occurred on the stage was actually unrehearsed and a great deal of it spontaneous and unpredictable. The director's control over the action was, therefore, not absolute as it is in pictures. His control over the cameras was limited by the instructions he could communicate succinctly to the cameramen who, by virtue of the unpredictability and speed of the action, had really to be prepared to carry out these instructions before they were given if the pick-up was to be successful.

We at CBS, particularly those like myself who functioned both as cameramen and directors, recognized the heavy responsibility of the cameramen and tried to confine instructions to them to advance warnings of actions to come or cues for camera treatments previously agreed upon.

Note that this lack of rehearsal and technical planning did *not* mean that our programmes were unprepared. The skeletons of all of them were laid out in advance. It *does* mean that we were forced to develop personnel and techniques competent to carry out the general line of a programme with the minimum attention to the details of its execution before air time. The operation and coordination of cameras, lights, mikes, and properties was rarely rehearsed. The technical execution of the show was left to the mental agility of the director and the familiarity of the technicians and cameramen with the demands of the medium.

Naturally, we have never assumed that dramatic shows or tightly written factual material could be presented in that way. We do know, however, from our off-the-air experiments in more formal television programmes, that training in the off-the-cuff production methods of our informal shows will allow



us to cut considerably the rehearsal time of formal material. It may seem a wild statement to those accustomed to stage and motion picture rehearsals but we think it will be entirely possible to air a one-hour dramatic show, complete with film inserts and rear-projection, with only three hours of technical rehearsal in the studio.

As part of the experiments in this direction at CBS, I produced a rather elaborate forty-five minute report—a television “documentary” about the Training Film Unit of the U. S. Army Signal Corps. We did not have time for technical rehearsal—lights, cameras, booms, etc., were not used during the two-hour, off-stage run-through. We transmitted still pictures, slides, two training films, a re-enacted sequence of methods of training in World War I, a scenario story conference, a sequence covering animation methods, and the actual shooting of a film sequence with film cameras. Personnel on the show were twenty-two officers and men.

The element of short rehearsal time—that is, short when compared with rehearsals in film or theatre—is common to both radio and television. In radio, it has produced two distinguishing conditions which will probably carry over to television. These are known as the “repetitive beat” or “programme cycle,” and the plot “pattern.” These phrases, recurring in the various current sociological surveys of radio, mean simply that a) most radio shows are aired regularly at the same time every day or every week, and b) the same continuity skeleton for variety or audience participation programmes and the same plot situations and character delineations for strip shows are maintained week in and week out. This “repetitive beat” exists because radio’s advertisers must have a continuing audi-

ence, and the plot “pattern” exists because it saves large sums of money in the labor time involved in production and rehearsal.

During the past year, when television ran on a fifteen-hour-per-week program schedule, we, at CBS, experimented with the radio “pattern” of a daily or weekly cycle. Each Wednesday we did a show based on square dancing, and each Thursday night a quiz. Every afternoon an illustrated children’s fairy-tale, and so forth.

After the first few weeks we were able to create a television equivalent of the radio “pattern.” We could do, therefore, with less and less rehearsal time for all of our “pattern” shows. Naturally, we changed the material, questions and personalities of, say, our quiz program, each week; but the sequence of specific *types* of questions remained the same—hence the basic skeleton of camera, lights, and sound coverage remained the same.

Similarly, our vaudeville or variety show used different acts but they received the same sort of production treatment and consequently they could be divided into five or six categories for camera treatment (*i.e.*, routine treatments for ballroom dancers, monologists, acrobats, singers, and so forth.)

In short, we escaped from the necessity of long rehearsals by following almost exactly the same routine as to continuity, setting, space relationships and lighting, week in and week out. The radio equivalent of our “pattern” show is recognized as good programme practice and so long as the actual material—plots, gags, songs, documentations, quiz questions—are changed, the effect is not harmful. The Allen and Benny radio shows have the same basic skeleton week after week and the radio

(Continued on Page 30)



German Propaganda Movies In Two Wars

By STAFF SGT. ALFRED W. ROHDE, Jr., U.S.M.C.

WE hear a great deal about German propaganda movies, but they are by no means an invention of the present generation of Nazi Germans. They had their beginnings under the Imperial German Government of World War I, and the Nazi propagandists of today have merely streamlined and vastly expanded a tool left to their hands by their predecessors who lost the First War Against Democracy. Perhaps we can take it as a good omen that in both instances of the use of films as a weapon by the self-styled "supermen" of the Reich their celluloid weapon has backfired upon its users!

Following the axiom that a soldier is better armed if he knows how the enemy uses his weapons, the writer, as a cinematographer in the United States Marine Corps, has tried to learn as much as he could about Germany's making and use of propaganda films. It is a story which probably will not be completely pieced together until after the war, when we have access to secret data and films in a captive Berlin; but even the little information now available should be of interest to all of us who are making and using motion pictures in the Free Countries of the Democratic world.

At the outbreak of World War I, the Imperial Film Office of the German Government started the making of the first propaganda films, to bring the actuality of war home to the German people. Their aim was to send the German

moviegoers from the theatres in a mood of glowing patriotic enthusiasm and (especially later) to inspire them with the determination to "stick to it" to the end and achieve victory at any cost.

"Direction" in those early propaganda films seems to have been a bit naive, to say the least. The British were usually the villains (remember the famous "Hymn of Hate"—?) and the makers of these films would round up a cast of laborers, farmers and village youths, dress them in the uniforms of the British and German armies, and stage their war scenes in the best Hollywood fashion. By this means, and often with the aid of ingenious mechanical devices, they could film any desired type of battle victory over the hated English.

One could stroll along a quiet country road and come upon a horde of yelling men whose spiked helmets and wicked-looking bayonets glistened in the summer sun as they charged a trench filled with khaki-clad "Britishers" who cowered and surrendered appropriately. On the screen one would shudder involuntarily at close shots of a glinting bayonet sinking two or three inches deep into a khaki-clad body, with an accompanying gout of blood jetting outward. But in reality these points on the "Englander's" body were protected by felt pads, and the bayonets were very special ones, attached to the barrel of the rifle with a spring which

would permit the bayonet to retract several inches on striking a solid object.

During the later part of the war there were cameramen attached to some of the German military and naval units in the field for the express purpose of making films for propaganda and for historical record. One of the most celebrated of these films was a picture made by a cameraman who cruised with a raiding U-boat and filmed the sinking of many Allied ships—some by torpedo, and some by gunfire. This particular reel may have glorified the Kaiser's submarine service at home, but when a print eventually got into Allied hands, its release in England, France and in this country in 1918 and 1919 had an effect precisely opposite to what its makers had planned.

During the years between the wars, as the German film industry under the "Second Reich"—the Republic—built itself up to a paramount position in Europe, more than a few theatrical films were made of themes which in one way or another helped to keep alive the German militaristic spirit which the Allies mistakenly thought they had crushed at Versailles. Some of these—like "Armored Cruiser Emden"—re-enacted heroic actions of the war. Others glorified individuals of that and earlier wars around whom the Prussian tradition had been built and grown. And as a matter of course, wherever in any picture an Englishman or an American could be made a villain or a low-comedy char-

RECIPE FOR PROPAGANDA, NAZI STYLE—show the efficiency and invincibility of your troops and equipment (opposite page) and the ruin they make of your enemies' forces, like this wrecked Polish armored train. Pictures enlarged from official German war movies of the Polish blitz.

acter, it was done—to sure success with the German audience.

When the Nazis came into power with their "Third Reich," they very quickly grasped the reins of the German film industry, for they had a keen appreciation of its value as a means of propaganda both at home and abroad. But their technique of film propaganda was a bit different. They used their films as a deft showcase for their theory of the German Super-race and, later, to subtly build the myth of German invincibility.

One of the first and biggest successes of this new technique was in the handling of the official films of the 1936 Olympic Games, which were held in Berlin. This task was delegated to Actress Leni Riefenstahl, a close friend and favorite of the Fuehrer, though since, it is understood, "liquidated." All the resources of a state-controlled film industry were lavished on this epic. Scores of cameramen covered every event in the game, often with special cameras and telephoto lenses of unheard-of power and speed. Over 2,000,000 feet of film were exposed by the German cameras . . . and the Government conveniently saw to it that no foreign cameras or cameramen were permitted to film anything.

Those who have seen the film—I believe there are a few in Hollywood who will bear me out—report that, viewed strictly as a film, it was a superb achievement. But it was also a subtle piece of propaganda, for in both the full-length feature version and the twenty separate short-subjects cut from this negative, the triumphs of Nazi athletes were subtly featured. Versions of these films were sent to each of the countries which had sent teams to the Olympiad, in each case with narration carefully recorded in the language of that country. Naturally these films received widespread showings in many countries, though not in this country, despite the personal efforts of Fraulein Riefentrahl to arrange for American distribution.

The following year—1937—Hitler tightened his hold on the German film industry, forcing out most of the producers, technicians and artists who had made it the foremost in Europe. He appointed a film coordinating board—the notorious "Reichsfilmkammer"—which consisted of twelve people: six bankers, five actors and an "official" Government representative, but all of them directly or indirectly representatives of the Minister of Public Enlightenment and Propaganda, Dr. Paul Joseph Goebbels. As Goebbels stated, "The German film has reached the point where it must fulfill its duty to the State. It must exercise international influence."

So Dr. Goebbels converted the UFA Studio at Neubabelsberg—one of the



largest and finest in the world—into an assembly-plant for making celluloid propaganda for Nazism. Directors, technicians and artists were put to work, three shifts a day, twenty-four hours per day, grinding out films that glorified the Nazi ideals of the Super-race, of devotion to the State, and of hatred for the rest of the world. Shooting and production schedules were cut in half; sets were made to do double duty. UFA's 14 sound stages, 21 cutting-rooms and five private theatres hummed with day-and-night activity.

Meantime, too, the studio personnel were trained in Air-Raid Precautions; emplacements were made for anti-aircraft guns, and special personnel told off and trained for their operation; special lamps, far too powerful for use with today's fast films but ideal for anti-aircraft searchlight duty, were bought and installed in the studio's electrical department. UFA was getting ready for war!

When the war came, UFA personnel were considered in the same category as the personnel of any other essential factory in Germany. They were conscripted and assigned to the studios, just as others were conscripted and assigned to service at the front. For a while it was thought that the German theatres might have to close down for lack of trained technicians to operate the equipment, but the wily Dr. Goebbels realized that he could not show his propaganda films without theatres. So more than 12,000 of the male technicians in this field were replaced by women. Training-schools were instituted, where the sisters, wives and sweethearts of the conscripted projectionists and other technicians were trained so they could eventually step into the places left vacant by the men.

These UFA films—ostensibly enter-

tainment films, for the most part—soon became the backbone of Axis film propaganda. Being ostensibly entertainment films for theatrical release, they could be exported to many foreign countries, especially those to which, as the war progressed, it became difficult or impossible to ship American films. Being Government-subsidized, they could be distributed at cut rates—even given away, if that was necessary to get them into the theatres.

These films had two chief purposes: to create confusion and disunity in countries which, by either military or by political conquest might in time be brought under Nazi influence, and to show off to all countries the Nazi dictatorship in dress parade. Coming in the guise of entertainment, these films could catch audiences unawares, and subtly implant the ideas their makers sought to spread. Dr. Goebbels felt that it was not necessary to get the foreign public to agree consciously that his ideas were good ones as long as the ideas themselves were presented with realism and cinematic effectiveness. The idea, subconsciously implanted during an "off-guard" moment, was almost sure to take root and grow of itself. This is film propaganda in its most potent form.

But the Germans' most spectacular film propaganda, both at home and abroad, was the Army "war newsreel" and the other, longer films of the might of Wehrmacht and Luftwaffe. In the early part of the war, at least, these war newsreels proved so popular for home consumption that most moviegoers reserved their regular seats in their favorite theatres days ahead of time. Every week more than a thousand prints of these reels were made, cut and edited by the UFA propaganda experts, with

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Camerawork On A Convoy

By HARRY PERRY, A.S.C.



AFTER spending nearly three months aboard corvettes and destroyers with transatlantic convoys while we filmed backgrounds for Universal's "Corvettes in Action," my dominant impression is a feeling of profound respect for the hardy sailors who man the ships—warships and cargo-carriers alike—which form and guard the United Nations' far-flung lines of supply. Theirs is the hardest kind of work, often under incredibly difficult conditions, in fair weather and foul—and always with the ever-present consciousness that at any moment a torpedo may get home with its quarter-ton explosive charge exploding against your ship as you've seen it happen so often with others.

I don't think any of us in the picture troupe, which consisted of director Dick Rosson, operative Len Powers, assistant cameraman Bert Eason and myself, are ashamed to admit that we drew a sigh of relief when we knew our stint was over and we could head back to Hollywood. Yet we had only a few short weeks of it: those convoy sailors can look forward to shuttling back and forth on their dangerous duty "for duration." And they take in their stride, trip after trip! You've got to take your hat off to men like that. They've got what it takes!

From the photographic viewpoint, the experience was particularly interesting to me because it gave me an idea of what some of the cinematographers in the Navy are up against when they take their cameras to sea. And I hope that perhaps some of the things I learned may be of some help to Naval cinematographers who may be faced with similar assignments.

I think the first thing I learned (it came as something of a surprise) was that warships' decks are made of steel. Most of us know, in a hazy, subconscious sort of way, that modern ships are made of steel, decks included. But most civilian ships, like the crack liners I had so

often crossed on in peacetime, keep the steel of their decks discreetly covered up with wooden planking, and coming upon the bare steel of a warship's decks brings you up with a sudden start.

This may not seem like an important photographic point, but it is. Setting up your camera on a conventional wood-sheathed deck is a cinch, for the points of the tripod-legs can bite solidly into the wood, and then, if you run a screw-eye into the planking, you can quickly tie down your camera so solidly that for all practical purposes the tripod is a part of the ship itself.

But on a steel deck you can't do this. The steel-shod tripod-legs that held so firmly on the wood slip and slide on the steel surface even worse than on concrete. And you haven't anything, as a rule, to tie to when you want to chain down your camera.

So if you are using a tripod-mounted camera of any kind, rule No. 1 is to come equipped with at least one of the wooden triangles used for setting up tripods on hard or polished floors. Set the tripod rigidly on that and chain it down.

Then lash the whole assembly of triangle, tripod and camera in place as best you can. You'll probably have to use several long lines to do this, for wherever you set up, you're sure to be several feet away from the nearest stanchion or other object to which you can attach your tie-down line. Better equip these lines with turnbuckles, too, so you can make things really rigid. This may seem like a lot of trouble the first time you do it—but wait till your ship starts dancing in a seaway. You'll realize then just how important it is to have your camera tied down rigidly!

This applies to any ship, but especially to destroyers and corvettes. Destroyers have long had a well-deserved reputation for pitching and rolling wickedly in any sort of rough weather, but at least they're big enough so they tend to knife through the waves. The corvettes are smaller; they bob up and down and sideways with every wave. And the waves don't have to be very big to make a small craft like a corvette gyrate wildly. Waves you wouldn't notice from the solid deck of a 50,000-ton liner like the "Normandie" are enough to make a corvette bounce around like a seagoing jitterbug.

As a matter of fact, we brought along a gymbal tripod with the idea that it would enable us to get steady pictures in spite of the motion of the ship. But no matter how we rigged it, the gymbal didn't have enough swing or react quick enough to keep our shots desirably steady.

Rule No. 2 for this kind of camerawork would be to remember that aboard a convoy in the danger zone, anything is likely to happen at any time—and the cameraman who wants to get it on film had better be ready! This means keep your camera where you can get it into action as fast as you can. When a submarine "wolf pack" starts loosing torpedoes, and your destroyer or corvette spins off at full speed to take appropriate action with depth-bombs, there's no time to set up a camera. It's got to be ready right then—or never! There are no re-takes.

Except when we set the camera in an unusual place to get some specific action, as, for example, when we set up between two rows of depth charges to "cover" the action of dropping ash-cans (we raised some interesting oil slicks, by the way, hinting that one or two U-boats had gone down to make their crews really "good" Nazis!) we generally kept the tripods for the studio-type cameras more or less permanently set up and ready on the bridge or on the highest deck, with the camera all assembled in a box nearby, so that we'd have the widest possible field of view.

We supplemented this with a loaded Eyemo always kept on the bridge, where we could get it into action in a matter of seconds. That, by the way, paid dividends on more than one occasion.

This business of keeping the cameras always ready brings up the problem of keeping your equipment adequately dry. On a small, low-lying craft like a destroyer or corvette, there's nearly always some spray flying, and in even a moderate sea, everything on the ship gets genuinely *wet*. When we had our studio cameras mounted in exposed positions, we kept them as well covered as we could with tarpaulins and slip-over sacks (well tied at the mouth) made of what was supposed to be waterproof canvas. This proved to be entirely inadequate. If I had the job to do over again I'd provide each camera with a covering "barney" made of oilskin, which is really waterproof, and fitted with a zipper and an extra-tight strap to draw the sack as close as possible around the tripod-head. Even so, you'd have to spend plenty of extra time at the end of each day carefully wiping and drying out every part of the camera, as assistant Eason did with us.

Working in black-and-white, it's a good idea to take along a generous supply of at least two different types of film. During the day on the North Atlantic, when the weather is at all good,

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Keeping Kodachrome Color Rendition Under Control

By ALAN STENSVOLD, S.S.C.

President, Society of 16mm. Cinematographers

IT is with the sincerest deference to all members of the A.S.C. that I write this article. It makes me feel like I'm trying to tell my Dad how to raise children. It is only intended for those who are not yet "dads" but whose intentions are thus and wish to add this information to their collection.

Color, cinematographically speaking, is entirely a matter of taste. Some like blondes, some like brunettes and red-heads; others like warm colors, cold colors, pastels, neutrals and heavy colors, and of course there are those who must have magenta. I, for one, like the warm neutral tones. An astrologer said that's because I was born in May.

To get down to business, however, I have learned that a little knowledge of astrology, psychology, entomology, accounting, arithmetic and a good sense of humor are extremely helpful in the course of the daily routine of a color cinematographer, especially if he is shooting Kodachrome . . . and at current prices.

Since Kodachrome is one of the current subjects of serious discussion among cinematographers, let's continue on the basis of this material.

First of all, I believe I can say without fear of too much contradiction that there has yet to be screened a truly perfect Kodachrome picture. The reasons are varied, but the one big trouble has been RUSH, coupled with a good deal of indifference, and lack of budget.

Technicolor turns out some truly beautiful pictures . . . but they take their time to be sure they are right, regardless of cost. They have a good reputation to uphold and they intend to keep it that way.

Kodachrome's reputation seems to lie in the laps of the cameramen, so it's about time that something is done to uphold it, too.

Usually a cameraman with a personal liking for cool colors is assigned to a picture whose producer is an addict for something else. This is where astrology comes in. Formula: find out when he was born, look up his color-chart, and proceed accordingly.

Of course, it's much easier to use little or no psychology by walking right up to the man and asking him how he wants his colors . . . hot or cold, thick or thin. In the event he doesn't know what he wants, use some "ingenue-ity" (there's always some around), or use some of the good common-sense that made you a cameraman. Until you know what colors your producer likes you'll never please him, and he's the one who counts most.

Shooting Kodachrome isn't such a bugaboo as some think. It just takes common-sense and good, serious thought to make it work as the manufacturer intended it should. It cannot be mistreated. Those who think that it is merely necessary to set a lens at $f:5.6$ at 24 frames and let her roll for exterior scenes usually find out that as cameramen they make good aspirin salesmen. And you can't open a lens wide, throw

in some light and roll it, and get good interiors either.

Just because most Kodachrome comes 16mm. wide and is run through a small camera on a light tripod doesn't mean that it can "see into the shadows" or "ignore the hot spots". Nor can you tell the lab to put it through at 12 minutes and print it on a 19 light. And you can't "blame Eastman" for red faces, black shadows, purple water, or too heavy a blue sky. That, my friends, is YOUR fault. Eastman can show you "good" stuff run through the developing machine just ahead of and behind yours.

If you are working for a producer who wants quality, take time enough to give it to him. (I know, I know, they're always in a hurry and on a short budget; but just remember that if the picture isn't good, you're the one who will be a lousy cameraman and a bum.) That's what reflectors, lights, makeup, filters and experience are for. That's what capable electricians, grips, makeup men and cameramen are there to do.

All too often (and I know, but definitely!) there is a tendency on the part of everyone concerned to "short cut" here and there when shooting 16mm. Kodachrome. Maybe it's because they feel reluctant to "spend" money and effort on this "amateur-size" film . . . yet a professional result is always expected when they come to screen the rushes. And a definitely professional result can be had . . . but only through proper effort, care and expenditures.

For the best results on the screen, and that means the final print, or "dupe" if you prefer, Kodachrome must be fairly "flat-lighted," whether shot indoors or outdoors. Shadow areas must be lighted to have ample exposure for the desired final effect, and light areas must be toned down to reproduce correctly. In printing or "duping" Kodachrome, the light areas get lighter and the dark areas get darker, only the medium keys stay the same.

Since nearly every professional 16mm. picture shot is filmed to be shown to an audience it is necessary to "shoot for duping". No matter how good an original may look, if it doesn't dupe good it's a bad shot. Ninety-nine per cent of the time Kodachrome is shot for duping when a professional cameraman is called in to shoot, so it becomes his responsibility to know *how* to "shoot for duping".

It is also true that Kodachrome has some tricks that only experience can master. Daylight Kodachrome was made

to reproduce color quite accurately when shot with a mixture of sunlight and skylight on your subject from two hours before noon to two hours after noon. And that doesn't mean daylight-saving time or war time. It means that period halfway between sunrise and sunset.

Early morning hours are slightly on the blue side of normal and can be balanced to the normal day by adding a thin "straw" filter to subtract the blue. (Notice the arithmetic is now creeping into this business.) Then comes a short period when the light is a little ruddy and a thin blue filter on the lenses will subtract the ruddiness.

From 10 a.m. to 2 p.m. (*sun time*) on a normal day, no filter is necessary. However this can also be a little untrue, depending on the scene you are attempting to shoot. For example, if you are shooting in the shade with only blue sky-light for illumination you will have a very bluish magenta result on the film. A more pleasing result will come from using a degree of orange filtering on the lens to warm up the scene.

However if you have people in the scene the filter will affect their skin-tones. A silver reflector to put sunlight on the faces and skin will help . . . but sunlight alone is quite orange in itself, and while a silver reflector cools down the sunlight somewhat it hasn't quite reached perfection for the scene. A cute little stunt is using a very light bluish scrim between the reflector and the subject that is being lighted. This will put the desired "tone" on the skin.

After 2 p.m. the light turns ruddy again and then it becomes necessary to start adding degrees of blue filtering to the lenses in order to subtract the ruddiness from the scene. (Arithmetic again). Only your eye and experience can determine the density of the filter to use.

Overcast days are usually a bugaboo to many, but if blue skies are not a requisite to the scene, filters and artificial lighting can make such a day a normal working day. And if you please, a good blue backing can give you the required blue sky . . . budget permitting.

Now to go indoors. Eastman made Type A Kodachrome for interior use with regular Photofloods and the popular CP Mazdas. Normally to my eye, I see a magenta overtone to scenes shot on this film with such light. Many producers like this magenta overtone, but I like warmer tones, so I mix standard indoor studio lighting units with Photo-

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Aces of the Camera XXIV: George Barnes, A.S.C.

By WALTER BLANCHARD

ACADEMY Award winner George Barnes, A.S.C., doesn't look nearly old enough or weatherbeaten enough to impress the average observer as being one of the industry's pioneers. Yet he is starting his twenty-sixth year as a cinematographer—fully twenty of them as one of the industry's top-ranking artists—and in addition to the Academy's golden statuette for surpassing artistic achievement, he has played a big part in pioneering some of cinematography's most important technical developments.

It all began back in 1917 when Barnes—just a youngster then—suddenly decided that he wanted to make cinematography his life's work. So he ap-

plied for a job in the camera department of the old Thomas H. Ince studio. What's more, he got it, and was immediately put to work as assistant cameraman for John Stumar, A.S.C.

In Stumar, the young assistant had an excellent and painstaking teacher, and in Barnes, Stumar seems to have had a more than ordinarily apt pupil. At any rate, within eight months of the time when he entered the industry with no previous photographic experience, young George Barnes was promoted to the position of First Cinematographer.

"During the five or six years after that," says Barnes, "I carried on about the way any young cameraman does when he is first put 'on his own.' I made

plenty of pictures—none of them particularly distinguished—good ones and bad ones, hard ones and easy ones. As I grew more sure of myself, I began to experiment here and there as I went along. I suppose I duplicated plenty of experiments other chaps had already made, and 'discovered' plenty of things that others had discovered before me; but I was learning, and gaining that back-log of experience which is a cinematographer's greatest asset.

"The picture that did the most for me during those early years was King Vidor's production of 'Peg O' My Heart,' starring Laurette Taylor. Dramatically, it was good enough to be included in many of the lists of the year's Ten Best pictures. Photographically it was (at least by the standards of 1923) a good enough achievement so that many of the critics went out of their way to comment favorably on the picture's photographic effectiveness, and on the appearance of the star.

"As regards this, by the way, I can say I owe a good deal to The American Cinematographer and its then Editor, Foster Goss. Quite a few of these critics who commented so favorably about the photography of 'Peg O' My Heart' attributed the camerawork to director Vidor. Of course, this was not of his seeking; and I can't blame the critics, either, for most of them had never had cameramen and their work brought to their attention . . . and that was in the days when the director was the One Great Man of production.

"Into this situation stepped The American Cinematographer. Both editorially and in direct personal correspondence, this magazine pointed out to the reviewers that the photographic aspects of a picture are the sole responsibility of the cinematographer, and that the cinematographer in this particular case was a chap named George S. Barnes, A.S.C. I believe that this was the first time that cinematographers and the value of their contribution to a production had been brought directly to the attention of the Nation's major critics. At any rate, it was from that time on that we began to see our major film reviewers paying conscious attention to the men behind the camera."

From that time on, also, Barnes took an acknowledged place among the industry's foremost camera-artists. The pictures which were entrusted to his photographic care became steadily bigger and more important ones, and there came to be a definite rivalry among the industry's top-ranking stars as to who should have the advantage of "Photography by George Barnes, A.S.C." For some time he was with Marion Davies—then at the height of her career—turning out a number of excellently-photographed pictures including "When Knighthood Was In Flower," which stands out in this writer's memory as one of the most beautiful photographic

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THROUGH the EDITOR'S FINDER

WE were rather proud of that page in last month's issue of *The American Cinematographer* which presented the roster of A.S.C. members in the Service. But things certainly have moved fast in that direction these last four weeks. When we first planned that page, there were an even twenty-five stars on the A.S.C.'s Service Flag. When we went to press, we found it necessary to reassemble the page to make room for three additional stars—and by the time the December issue was off the press, there were an even thirty A.S.C. members in uniform. At this writing, there are at least half-a-dozen more either in service or impatiently awaiting their official orders . . . and there's no telling how that list may have grown by the time this appears in print!

For that matter, a list of this magazine's regular contributors (other than members of the A.S.C.) who have gone into Service or into important Defense jobs within the past year would be rather imposing, too. Offhand, we can quickly think of at least a dozen of our "regulars" who are finding other uses than writing for their talents "for duration."

IT seems to us that cinematographers as a class have suffered badly from an overdeveloped sense of professional modesty. Making motion pictures professionally is of course a matter of teamwork, but when you analyze it dispassionately, you cannot escape the conclusion that the director of photography has one of the most crucial and exacting jobs in the whole chain of production. Everything literally depends upon his ability to focus through the little glass bottleneck of the camera's lens the total of the efforts of everyone else connected with the production—producers, directors, writers, players, costumers, set-designers, and all the rest—to the end that their joint efforts may be captured in tangible form on a little strip of celluloid.

And the director of photography is unique in the industry in that he must shoulder his responsibility alone. The producer, to some extent, at least, can share his problems and responsibilities with his executive associates, with the director, writers, and others. The director can share his with the producer, writers, players, cutter, and even with the cinematographer. And so on all down the line.

But the cinematographer stands or falls alone. True, he has his operative crew, but they are strictly junior subordinates. The director of photography must make the decisions, and shoulder the burdens alone. He is the only man in the production chain who has the

specialized understanding to know what he is doing, and whether he is doing it right or wrong. He must cope not only with the rather abstract considerations of visual art, and with the manifold technicalities of a highly-developed science, but often with such strictly practical considerations as whether or not a certain action can be filmed, and if so, if it is worth the cost in time, money and manpower. He has to be a bewildering combination of artist, dramatist, skilled technician, executive and diplomat. Often he must display several or all of these qualities at once.

And for nearly forty years the industry's cinematographers have been so successful at this that it has become almost axiomatic that the man at the camera must never fail. An actor can muff a scene and pass it off with a laugh. The director can miss on a scene and call for a retake without causing comment. The writers, the producer, and all the rest can make errors in judgement and find them accepted as inevitable. But let a cinematographer cause a retake because he misjudged a difficult lighting condition, or the dramatic mood of the action, or the photographic requirements of a star, and you'd think he had committed an unpardonable crime.

Perhaps it is for this reason that most cinematographers seem to pull themselves tightly into a shell of reticence, and seldom, if ever, even attempt to let their closest fellow-workers—much less the public at large—realize what a burden they are carrying, or how greatly they are contributing to the artistic and efficient making of the production.

As a result, many even of the men and women who work most closely with the cinematographers seem to have little or no appreciation of what the men of the camera are doing. An excellent illustration of this might be gleaned from the recent remarks of a prominent director, now commissioned as an officer of the U. S. Army, at a meeting called to seek qualified cinematographers for vitally important commissions in one of the most important branches of the Service. This gentleman who has worked with many of the industry's foremost cinematographers for years, made it rather clear that he knew so little about the work which had been going on day in and day out on his own sets that he rated the director of photography as only a specialist in glamorizing pretty women under ideal conditions, with little or no ability for practical field camerawork, or understanding of practical production considerations.

It makes us wonder who is really to blame: the director who displayed so little knowledge of the calibre and ac-

tivities of his long-time fellow-workers, or the cinematographers who so hid their light under a bushel that a man who had worked with them for years could labor under such a misapprehension—?

THE other day we congratulated one of the industry's leading cinematographers or what we considered to be an excellently-photographed production. "Thanks," he replied, with some embarrassment, "but it really wasn't my picture. I did the picture—but then after the front office had seen a rough cut, they changed the story and characterizations around and put the picture back in work for retakes and added scenes. I was busy on another assignment, so two other men handled these retakes, which constituted practically all the footage you saw at the preview. So it really wasn't mine, at all."

A few days later, we heard a similar story from a man in another studio, but with a different slant. He had completed a picture, and then another man had been called in "cold" to do the added scenes. And those added scenes were precisely the ones we had criticized adversely; they didn't match up with the rest of the picture in either technical quality or artistic concept.

Yet in each case, but one man's name appeared on the screen as director of photography. In one instance, he received credit for good work he did not do. In the other, he received censure for indifferent work for which he was not in the least responsible.

Of course, as long as there are credits and only a limited amount of title-space and footage in which to present them, there will always be some inequalities in crediting. But in instances like these—and they're by no means unusual or isolated—it seems grossly unfair to all concerned.

Besides, isn't it possible that the picture itself might benefit if one man could plan its photographic treatment and follow it through from start to finish?

WARTIME restrictions are tending to limit the size and content of nearly all magazines today. It is entirely possible that further restrictions will eventually call for further trimming. Therefore we would greatly appreciate hearing from our readers what features *The American Cinematographer* they like best, and which ones they like least, and could most easily do without. That information will help us in our effort to give our readers the best possible magazine every month, no matter what unexpected problems and restrictions may lie ahead.

A.S.C. on Parade

There's lots of excitement in the household of Elmer G. Dyer, A.S.C., these days. "Elmer the Great" is in the process of being commissioned a major in the U. S. Army Air Force—which will make him the Senior Officer on the A.S.C. military list—and daughter Gloria is getting married January 7th. Mrs. Dyer reports things are more than a little hectic around the La Jolla Avenue address, what with Elmer marching up and down one side of the hall practicing his military manners, and Gloria rehearsing the Wedding March on the other—! Here's good wishes to both the bride-to-be and the major-to-be.

★

And Clyde De Vinna, A.S.C., is off for foreign parts as Captain De Vinna of the U. S. Marine Corps. Considering the traditional rivalry between sailors and marines, wonder what Clyde, who in 1912 was a sailor-radioman on the flagship of the U. S. Asiatic Squadron, thinks now he's a leatherneck—? Anyway, with Lieutenant Henry Freulich, A.S.C., U.S.M.C., and Captain De Vinna, A.S.C., U.S.M.C., both in active service, there's plenty of evidence that the Marine Corps knows how to pick men who can keep the photographic situation well in hand!

★

A cheery Christmas-card from Capt. Art Lloyd, A.S.C., of the Signal Corps, informs us that he's now directing, rather than photographing, training films for the Army. A fine step in the right direction, we'd say, and may there be many more of our uniformed A.S.C.-ers given similar assignments. Even though he's not officially behind the camera any more, Capt. Art reports he "just can't resist stealing his last look through the little peep-hole before shooting!"

★

Ted McCord, A.S.C., looked in hurriedly the other day to tell use he's now Captain McCord of the Army Air Force. Unfortunately Ye Ed was out, so we couldn't "mug him" for this page, but we're hoping for another chance, especially since Ted, in uniform, made such an impression on our office staff! Ted marched directly off to war from the Warner Bros. set where he was directing the photography of "Action in the North Atlantic." Tony Gaudio, A.S.C., took over for him.

★

On another type of what our British cousins call "National Service" is John L. Herrman, A.S.C., F.R.P.S., F.R.S.A., etc., who has just been promoted from Second Lieutenant to First Lieutenant in the Civil Air Patrol squadron at New Orleans. In the process, he switches assignments from Squadron Photographic Officer to Squadron Public Relations Officer.

Another quick switch in camera assignments occurred on the set of Paramount's Technicolor "Dixie." Director of Photography Billy Mellor, A.S.C., was commissioned as First Lieutenant Mellor of the Army's Signal Corps. They tell us he was whisked off so swiftly to an Eastern station that he was 500 miles on his way before the camera slowed down after his last "take!" Meanwhile, Karl Struss, A.S.C., takes over to finish the picture.

★

Another quick change from civvies to uniform was made by Jack Greenhalgh, A.S.C. Only minutes after he finished directing the photography of that big independent opus, "The Hangman," he was in khaki as First Lieutenant Greenhalgh of the Army Air Force.

★

Ben Reynolds, A.S.C., is also putting his skill to work for Uncle Sam. As you probably didn't know (we didn't) Ben studied electrical engineering in his youthful days before he decided to devote his talents to cinematography. Today, between picture assignments, he's putting that skill to work in charge of some of the trickiest and most vital electrical mechanisms at a California shipyard. We understand there are only two men in the plant capable of making that particular machine say "uncle."

★

Last time we saw Byron Haskin, A.S.C., he was more than a little warm under the collar. Up to his ears in work directing a special-effects second unit on "Action in the North Atlantic," that day, en route to the studio chauffeuring his share-the-ride group in his big Oldsmobile, Bun ran out of gas—!

★

In that connection, Ford-owner Karl Freund, A.S.C., has the laugh on a lot of his fellow cinematographers who are blessed (?) with big, snazzy buggies which can't deliver a fraction of the "average" 15 miles per gallon the gas-rationing system is based on.

★

Did you ever watch Arthur Miller, A.S.C., while engrossed in a telephone conversation? He's an unusually adept "doodler."

★

And did you ever hear about the time Victor Milner, A.S.C., was doing an NBC broadcast and in quoting his director's remarks while watching that day's rushes, inadvertently let off with a nice, juicy cussword—?

★

Joe Ruttenberg, A.S.C., draws the camera assignment to MGM's "Madame Curie."

★

Out at Universal, John W. Boyle, A.S.C., is assigned to direct the photography of "Good Morning, Judge."



We ought to caption this picture, snapped recently in the Paramount commissary, "Beauty and Brains," or something like that. The left-to-right identification (if you need any) shows this chatty luncheon-group consists of Camera Chief C. Roy Hunter, Ingrid Bergman, Karl Struss, A.S.C. and fashion-designer Edith Head.

★

With transportation what it is these days, Milton Krasner, A.S.C., is a lucky fellow. He got back from the Texas location of "We've Never Been Licked" just a matter of hours before the press preview of "Arabian Nights," his first—and very swell—venture into Technicolor.

★

Fred Jackman, Jr., A.S.C., started another opus for Pine-Thomas, "Alaska Highway," the day after Christmas, going on location near Reno for the opening scenes.

★

Lunching at Warners' the other day, it was nice to see Merritt Gerstad, A.S.C., drop into the chair opposite us. He's working out there on some of the dance numbers for "Thank Your Lucky Stars," while Arthur Edeson, A.S.C., directs the photography of the story sequences.

★

Committees handling this year's Academy Awards for Photography include Ray Wilkinson, Chairman; John Arnold, A.S.C.; Charles Clarke, A.S.C.; Bob De Grasse, A.S.C.; Arthur Edeson, A.S.C.; Fred Gage, A.S.C.; Merritt Gerstad, A.S.C.; Ernest Haller, A.S.C.; C. Roy Hunter; Milton Krasner, A.S.C.; E. B. McGreal; Arthur Miller, A.S.C.; Ernest Miller; Victor Milner, A.S.C.; L. Wm. O'Connell, A.S.C.; Robert Planck, A.S.C.; Charles Rosher, A.S.C.; Joe Ruttenberg, A.S.C.; Karl Struss, A.S.C.; Mack Stengler, A.S.C.; Ted Tetzlaff, A.S.C.; Leo Tover, A.S.C.; Charles Van Enger, A.S.C.; and Joseph Walker, A.S.C.

★

Special-effects "Oscars" are being handled by Farciot Edouart, A.S.C., Chairman; Lionel Banks; McClure Capps; Jack Cosgrove; John Fulton, A.S.C.; Arnold Gillespie; Byron Haskin, A.S.C.; Russell Kimball; Louis Mesenkop; Fred Sersen; Hal Shaw; James Stewart; S. J. Twining; and Vernon Walker, A.S.C.

PHOTOGRAPHY OF THE MONTH

CASABLANCA

Warner Bros.' Production.

Director of Photography: Arthur Edeson, A.S.C.

Special Effects: Willard Van Enger, A.S.C.

We don't know whether "Casablanca" will receive a Los Angeles release in time to be eligible for this year's Academy Awards, but it deserves to, for Arthur Edeson, A.S.C., has given it a photographic mounting of genuinely Academy Award calibre. He has made many fine pictures, but this is without doubt the finest work he has done in many years, if not, indeed, the peak achievement of his career.

Edeson's attitude on being assigned to a picture is to hold himself in check if there is any danger that over-pictorial photography might overshadow a story or acting which are on the weak side. But in "Casablanca" he has a picture that is a real cameraman's delight. It has a strongly dramatic and very topical story, with equally strong acting performances. The locale is exotic, and the sets that serve as a background for the melodramatic action are in themselves an invitation to pictorialism. There is nothing to inhibit a cinematographer of Edeson's calibre from "going to town" photographically.

He does precisely that. His camera brings "Casablanca" to the screen with a lavishly pictorial touch which challenges description. Every scene is a pictorial delight of the type which merits that badly-overworked adjective "rich" as regards composition, tonal values and lighting. In addition, his visual treatment is perfectly keyed to the infinitely varying dramatic moods of the action. All told, it's the sort of photography we've seen all too little of during the past year or so during which the emphasis generally has been on harsh realism and *f*:64 definition. The last picture we can compare it to was "Rebecca," which, it will be remembered, didn't do at all badly for its cinematographer at Oscar-time.

The special-effects camerawork contributed by Willard Van Enger, A.S.C., is on a par with Edeson's production camerawork. The montages, credited to Don Siegel and James Leicester are also uncommonly good, and there's a great deal to be said for the sets by Carl Jules Weyl and for Max Steiner's musical score.

But we won't try to describe "Casablanca." You'd better see it for yourself and give yourself the pleasure of enjoying one of the year's finest photographic achievements.

ARABIAN NIGHTS

Walter Wanger - Universal Production
(Technicolor)

Directors of Photography: Milton Krasner, A.S.C., Capt. William B. Skall, A.S.C., and W. Howard Green, A.S.C.

This is Technicolor fantasy at its finest, and seems a sure contender for Academy honors in the color classification. As Milton Krasner's first venture into Technicolor camerawork, it marks an important forward step in the career of this rising young cinematographer.

Too much film fantasy has gone wide of the mark because in one way or another it lacked the imagination which is an essential in fantasy. "Arabian Nights" avoids this pitfall. With the possible exception of some of the comedy relief, there is imagination reflected in every frame. This is especially true of the technical treatment, in which close collaboration between the three directors of photography and production designers Jack Otterson and Alexander Golitzen makes the production unusually noteworthy.

A significant factor in this is the way five key creators have worked together to wring the maximum production value from an unbelievable minimum of actual physical resources and expenditure. For the first time in a production of this type the people responsible for the film's visual mounting have taken advantage of the fact that these story-book Arabians were in reality not city-dwellers but a desert people. The majority of the action, therefore, is played not against a background of spectacular Moslem cities, but against the picturesque—and inexpensive—tents of the desert-dweller, cleverly enhanced by the use of matte-shots which very pictorially fill in areas which might otherwise have necessitated expensive construction or location trips. Some of these matte-shots are excellent; others more than hint that the special-effects staff would have benefited by opportunity for more extensive tests of color matching.

The actual "production" camerawork and lightings are of outstanding pictorial quality. Instead of being conscious of the economical physical production facilities, you are instead delighted by a visual impression of richness and, as Kipling put it, "more-than-Oriental-splendour." Scene after scene is a pictorial delight. Indeed, we could name plenty of more highly-budgeted Technicolor films which gave far less of an impression of lavishness.

Krasner's Technicolor portraiture of his players is another outstanding asset. Of course his treatment of Maria Montez easily takes first place, but none of the rest of the cast are by any means slighted. Incidentally, one can play an interesting little game with himself during the early reels, trying to identify the various familiar male players behind their Arabian whiskers—!

Yet another feature of "Arabian Nights" is Frank Skinner's excellent musical score which, unless our memory fails us, makes eloquent use of themes from Rimsky-Korsakoff's "Scheherazade."

PALM BEACH STORY

Paramount Production.

Director of Photography: Victor Milner, A.S.C.

Victor Milner is at his best in photographing a polished comedy-drama like this one—and in this one he has turned out one of the most polished jobs of decorative high-key photography we've seen come from his camera in some time. It's more than a little reminiscent of the long succession of Lubitsch bedroom farce-comedies that flowed so delightfully from the Milner camera. In other words, Milner is at his best.

Milner always deals excellently with his players. Claudette Colbert, for instance, hasn't been seen to better advantage in a long while. Behind the players, his strongly decorative set-lightings are another visual pleasure. The sets, incidentally, are something to look at with a bit of reminiscent envy, for "Palm Beach Story" is one of the impressive back-log of completed productions Paramount has on its shelves, and was produced sufficiently long ago so that it was in work well before today's "ceiling" restrictions clamped down on the building of lavish sets.

The special-effects work is good, but in some respects below par for the standard one expects of Farciot Edouart, A.S.C., and his efficient staff.

STAND BY FOR ACTION

Metro-Goldwyn-Mayer Production.

Director of Photography: Charles Rosher, A.S.C.

Though the story is rather too heavily freighted with obvious hokum, Charles Rosher, A.S.C., and MGM's special-effects staff have made "Stand By For Action" a picture that's worth seeing.

Rosher's contribution maintains the easy smoothness customarily associated with his name, though the locale and action offer him little enough opportunity for the pictorial type of camerawork at which he excels. His treatment of the players is characteristically excellent, tending toward virile portrait-lightings, and his effect-lightings in the later sequences are both realistic and dramatically effective.

The real highlight of the picture to this reviewer, however, is the surpassing excellence of the miniature scenes which are credited to Arnold Gillespie and Don Jahraus, the latter long known as perhaps the industry's foremost specialist in marine sets and miniatures.

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Make A Prize-Winning Film From Vacation "Left-Overs"

By JOHN E. WALTER

Past President, Los Angeles 8mm. Club

THESE are much wailing and gnashing of teeth, these gasless and rubberless days, on the part of those ardent amateurs who shoot vacation pictures. No longer can he (or she) load up the car with camping equipment, camera and film and come back two weeks or so later, broke but happy by reason of many reels of film exposed in numerous National Parks while putting 3000 miles on the speedometer. While those days are not gone forever, they are slightly postponed, to say the least.

Such a breathing-spell can be used to great advantage by most of us. For instance, who does not have some reels of film which have never been edited or titled, or which need more cutting to quicken their tempo and thereby make them into a real picture? How many of you come in the class of amateurs who shoot roll after roll but seldom if ever title or edit them? Do a little more than just splice your returned rolls together on a larger reel: work on them these nights when gas is low and build yourself a personal library of pictures of which you can be proud.

Dyed-in-the-wool takers of vacation pictures, without doubt, have an idea in the back of their minds that they could shoot a pip of a scenario picture if they

just had a little time to do it. Well, you have the time to figure it out now!

Without going anywhere, and with the expenditure of only a little new film, you can turn out something new in the line of vacation pictures. It will take some ingenuity and thought, but the results will be worth it. All of us have a collection of pot-shots, 40 ft. on one short trip, 60 ft. or so on another, but have never been able to combine them into anything except just scenery. No plot to hold them together . . . no gags to lend a little humor . . . and nothing to explain why or where it was taken.

Take a bunch of these shots and put them together along the lines of the following script and see what you think of the results. I tried it on some of my own "left-overs"—and it did well enough to win first prize in my club's annual contest. Yes, it surprised me, too!

Main Title:

THOSE WERE THE DAYS

By

Scene 1: Husband at table, wife brings in piece of pie for each of them and sits down.

Scene 2: Wife pours cup of coffee for each, emptying pot in her cup.

Scene 3: Husband takes heaping spoon of sugar and starts to put it in his

cup. Wife puts out hand and stops him. He pours most of it back and reluctantly puts a little in his cup.

(Close-up of sugar bowl and spoon is effective.)

Scene 4: Husband and wife take several bites of pie. Wife looks at him and says:

Title: "Do we have enough gas for a trip Sunday?"

Scene 5: He gets gas ration book from pocket, looks at it and then looks at wife, shaking his head regretfully.

Scene 6: (Change camera position.) Husband looks at wife and says:

Title: "Remember our trip up San Gabriel Canyon . . . ?"

(a) Title fade out and fade in on opening scene of this trip.

(b) Last scene fade out and fade in on

Scene 7: Husband and wife still at table, pie gone and drinking last of coffee in cups.

Scene 8: He holds out cup for more coffee.

Scene 9: (Close-up) Wife shakes her head and says:

Title: "Can't buy any more."

Scene 10: Wife shows empty Silex pot.

Scene 11: Husband' puts cup down and both get up with dishes, start out of picture.

Scene 12: Shot of husband and wife washing and wiping dishes. Wife turns to husband and says:

Title: "And the fun we had at Palm Springs . . ."

(a) Title fade-out and fade in on opening scene.

(b) Closing scene fade-out and fade in on

Scene 13: Husband and wife finishing dishes. Wife takes off and hangs up apron. Husband puts dish-towel on rack. Both walk out of scene.

Scene 14: Husband and wife walk into living-room, pick up evening paper and start to read it.

Scene 15: He lets paper drop slowly into lap, looks into space a moment, turns to wife and says:

Title "And the fun we had at Big Bear and Cedar Lake . . ."

(a) Title fade-out and fade in on opening scene.

(b) Last scene fade-out and fade in on

Scene 16: Husband and wife still sitting in living-room, holding evening papers and looking sad.

Scene 17: He folds up paper and looks around room for something to do. Sees record cabinet. Gets up.

Scene 18: Husband walks to cabinet and takes out record album.

Scene 19: He sits down again and takes a number of records out. Starts to get up with records in hand.

Scene 20: Wife stops him, so he sits down again.

Scene 21: Wife points at foot, which she lifts from floor, and says:

Title: "We've still got leather. Let's go for a walk!"

Scene 22: Husband and wife get up and and put on coats.

Scene 23: He opens front door and both walk out.

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A CAMERA ON SKIIS

By W. G. CAMPBELL BOSCO

"FOCUS ON SKIS" is a 16 mm. Kodachrome motion picture produced by an amateur cinematographer and ski enthusiast which is noteworthy in several respects. It was shown recently, among other places, at the Royce Hall Auditorium on the campus of U.C.L.A., under the auspices of the University of California Extension Division, where it was extremely well received by an audience of five or six hundred people who paid to get in to see it. For an amateur picture that in itself is of more than passing interest. Furthermore, in Boston, which, we understand, is full of ski enthusiasts, the picture grossed \$2,000 in one night for the benefit of the Red Cross.

The producer of the picture is Dr. Frank H. Howard, who, when he is not travelling about the country with his pictures, acting as president of the California Ski Association, coaching championship-caliber ski teams and producing 16mm. pictures, is a dentist in San Rafael, California. He is a personable chap with an infectious enthusiasm for his hobbies. The manner in which he gets his idea over and achieves his purpose through the medium of 16 mm. Kodachrome is, we believe, the thing that is of most interest to the readers of this magazine.

Dr. Howard is frank to admit that he is a skier first and a photographer second. As a skier he is one of that small band of men who have been largely responsible for the tremendous growth in popularity of skiing in the United States. Ten years ago skiing was a "foreign" sport unknown and untried by most Americans, whose only conception of the sport was gained from newsreel shots of foolhardy young men leaping out into space. Today, skiing is a ranking national sport with devotees numbered in the hundreds of thousands. Winter resorts and picturesque skiing lodges have

been built to accommodate these enthusiasts, and vast areas on the roof of America, hitherto unknown and unappreciated by the public, have been opened up.

Dr. Howard with his motion pictures can take his full share of credit for having brought about this widespread acceptance, with all its attendant benefits, in such a relatively short time. His color motion pictures do more to quicken the appetite and sell the idea of skiing to the potential skier than anything else could hope to do.

Dr. Howard takes his camera into a winter wonderland in which the non-skiing cameraman, for obvious reasons, must remain virtually immobile. This skiing doctor comes back with snow scenes of enchanting beauty and action pictures of skiing events that are frequently breathtakingly thrilling. He also has scenes showing how simple it is for the beginner to "catch on," and shots of skiers relaxing, in their own peculiar way, after the day's skiing is done.

According to Dr. Howard, (and his pictures seem to prove it), all good skiers relax in the approved manner by drinking beer in a lodge with quaint Tyrolean atmosphere while occasionally squaring off in spirited dances like the Schottische, the Polka and another one that would be unpronounceable to a non-skier, anyway. These dances are always accompanied by energetic, jolly-looking musicians who look as though they must have stepped right from the bas-relief of a Bavarian beer mug.

Well, after seeing it you just want to go out, join the nearest ski-club and get right in on the whole exhilarating, fascinating business.

Dr. Howard makes one of his snow epics each year. "Focus on Skis" is the latest and includes scenes taken at almost every major winter resort in the

Some of Dr. Howard's spectacular skii shots. Notice (below) shots made on locations which were inaccessible to a non-skier.

United States and Eastern Canada. Championship skiing, filmed in action at every major tournament over the country, including the National Ski Championship at Yosemite, the Western Ski Championship at Sun Valley, the Mid-Summer Volcano Race at Mount Lassen and the Silver Belt Trophy Race at the Sugar Bowl, give the picture an air of skiing authority. In these events the greatest skii performers in the country and in the world are captured for the screen in a manner completely satisfactory.

And all this despite the fact that shooting conditions were not always what a cameraman might ask for. Two of the events, in fact, were filmed during blizzards — and they were excellently done.

But where Dr. Howard really shines as a snow cameraman is in his filming of informal, non-competitive skiing. Here, with an opportunity to pick his locations and lighting, he turns in some of the best skiing sequences in color this reviewer has seen. While the non-skiing cameraman is necessarily rooted to one spot in the deep snow country, and

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Editing For Balance

By WALLACE CAMPBELL

DO YOU give the job of editing your films the same careful consideration that you give all the preceding phases of your picture-making? Or do you consider editing merely a necessary chore that must be performed as hurriedly as possible in order to get the picture on the screen?

Unfortunately, too many cineamateurs seem to work on the theory that editing is a matter of cutting out the bad frames that mark each camera start, and splicing consecutive scenes together. Yet the proper handling of a picture in the cutting-room is as important to its ultimate success as the proper direction, scripting or camera-work.

The professionals have proven this often enough. All things being equal, poor treatment of a film at the hands of a film-editor can turn what by other standards might be a good picture into something very mediocre. On the other hand, a film-editor with a good sense of continuity and tempo can take what might be a mediocre picture and by his deftness turn out a smooth, interest-sustaining vehicle.

There aren't many people who can take a motion picture apart and criticize as a separate contribution the editing of a film in the same sense that they can the acting or the camerawork, but when you see a motion picture that

unreels smoothly, that puts emphasis in the right places and points up the highlight of the story, whatever it is, you can be sure that it is a good editing job.

The same sense of showmanship that is necessary to good direction, writing, scripting or camerawork is prerequisite for an equally effective cutting job. And one of the first rules is to learn when to stop. When to stop showing the picturesque or expensive establishing 'production' shot and cut to some more intimate business; when to cut away from the 'intimate business' to a 'reaction' shot; when to cut the take on a humorous or dramatic expression or action to get the full benefit of showmanlike punch out of it.

The difference between an effective or an ineffective cut can in many instances be only a few frames. Especially if you are trying to build tempo, every unnecessary frame after a given bit of business or expression has registered is a drug on a market and helping to defeat your purpose. This rule of knowing when to stop seems to be one that many cineamateurs would do well to learn and profit by. So many of them just don't want to throw away any film. They want to include every photographically perfect frame they have exposed. But they do so only at the expense of jeop-

ardizing the entertainment value of the picture as a whole.

Don't be afraid to shorten a scene. No one will feel as sentimental about it as the fellow who shot it, anyway. Make your moving pictures *move*. When you have made your point, change the subject, or at least the angle of approach.

There is no excuse for 'drag' in a motion picture. As a medium it offers the utmost flexibility and the greatest play for the imagination. Even the most beautiful land and seascapes in color can only hope to sustain interest up to a point. And that point can be passed sooner than you think. Don't be afraid to cut them as soon as they have had time to register on the screen. Remember that the inclusion of some live, animate object or objects invariably adds interest as well as proportion and perspective.

Another thing well worth remembering when you are bent on filming purely scenic movies is that every landscape or vista is compounded of elements that are invariably worthy of closer shots. The trees that formed the mass in the composition of the landscape will offer a lot of interest for closer shots; and so will the shrubs, wildflowers or grasses that contribute to the scene as a whole individually offer opportunities for imaginative camerawork—and give the editor something to work with, as well. The inclusion of such shots does so much to add to the interest-value of the picture. Particularly if a judicious use is made of subtitles that are informative, in an informal and inoffensive manner, and in the mood of the picture.

Especially in these days of gasoline rationing the cineamateur will often realize, when he sits down to edit his film, that the pictures he made on location could stand a few close-ups as inserts. Shots of himself, perhaps, or members of his family. But the fact that it is impossible or inconvenient to return to that same location need not prevent him getting these inserts. If it's outdoor stuff, he might do well to remember the now almost immortal words of that early Hollywood impresario who said, "A tree is a tree and a rock is a rock. Shoot it in Griffith Park." With a little imagination he can uncork enough new shots against conveniently "close to home" backgrounds to add new zest to his opus.

When filming action it is generally considered good policy to shoot the entire action in order to achieve smoothness and naturalness. But it isn't necessary to include the entire cycle of the action in the finally edited reel in the same form as you filmed it. For example, if you go from a long-shot to a closer angle on action where, say, someone is shown seating himself in a chair, you can cut the long-shot just as he starts to fold himself down into the chair, and cut in the closer shot just as he's getting settled, and you'll get a much smoother flow of movement on

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WARTIME home moviemaking seems to be distinguished by an increasing list of things we *can't* do. We can't get gasoline enough to take us on the moviemaking weekend and holiday trips of the past. Even if we could, we couldn't do much shooting as most of us can only get a roll or two of film at a time, anyway. Decidedly, the accent seems to be on the *home* part of home movies, and on shooting that consumes a minimum amount of film footage, besides.

There's one type of moviemaking that just fits this description . . . and it has the added advantage of giving you what for all practical purposes amounts to new films for old ones.

It is title-making. And how most of our films need it—even if they've been laid aside years ago as completely edited and titled!

Get some of your old pictures out and look at them again. Unless you're the 99th moviemaker out of every hundred who has already formed the habit of lavishing as much care on title-making as on making the picture itself, you'll probably find plenty of spare-time employment in re-planning and re-shooting the titles you once thought were quite adequate.

That black-and-white vacation film of several years ago, for example: you made the titles for it on cheap positive "title-film," didn't you, maybe using typewritten title-cards? Probably you missed here and there on exposure, and the development wasn't very uniform, anyway, so they're streaky and hard to read. Don't you think they could be improved? That Kodachrome picture where you used titles made on tinted-base positive: wouldn't it be a lot better if you dressed it up with Kodachrome titles, too? And—be honest, now!—are you really satisfied with the wording of those titles you made two, three, or five years ago? Now that you aren't quite so close to that trip and what happened on it, don't you think that maybe those titles left a little bit too much to the imagination—? Wouldn't a fuller explanation make the picture more enjoyable?

If the answer is yes, your "what to shoot" problems will be settled for the next several months, at least, for title-making is something you can do a little at a time, as you find you have the spare moments to do it in.

The starting-point, to most people, would be to be sure you've got a satisfactory titler. But personally, I think its more logical to work the other way around: what sort of title-cards are you going to be using? The answer to that will have more to do with what type of titler you ought to use, than anything else.

Nature has equipped some of us with a knack for doing attractive hand-lettering. If you've got it, but aren't sure, practice and training will bring it out. I know several amateurs who found all that was needed to give their title-lettering talent an almost professional polish was to spend a few evenings in a



Make Your Old Films New By Making Better Titles

By PHIL TANNURA, A.S.C.

class in show-card lettering at an evening adult high-school.

On the other hand, there are some of us who just can't do that sort of thing. It's nothing to be ashamed of; they just aren't built that way. For them, if they can't find some artistically-inclined friend capable of helping out by lettering title-cards, I'd suggest that printed titles are the best answer. It isn't too hard, in most towns, to find a small printing shop where they'll be glad to run you off a few impressions of each title, using white or silver ink on black or dark-colored paper. It shouldn't cost much, either; one of my friends, for example, found a shop like that—one which luckily more or less specialized in printing Christmas cards—where he had some thirty or forty titles printed for a Kodachrome picture, using leftover bits of colored paper and colored ink, at a cost of about five dollars.

With that point settled, you can begin to think about the titler. This is really governed by the type of title-cards you use. If you use hand-lettered ones, you'll do a lot better to use pretty good-sized title-cards. I'd suggest at least 6x8 inches in size, and bigger if possible; professional title-cards often measure 18x24 or larger. The larger size, you see, gives you a chance to make your lettering larger, and in the larger letters, minor irregularities in your lettering craftsmanship won't stand out so glaringly as they will on smaller letters.

On the other hand, if you are going to

use printed titles, you can do quite well with small title-cards, including the "business-card" size used in most of the inexpensive commercial titlers. I've seen plenty of really first-class titles turned out this way.

But the equipment you use to make your titles—so long as it is good and accurately aligned—doesn't matter half so much as the care and ingenuity you put to work in planning and photographing them.

First of all, be sure that the title is legible; keep away from fancy lettering, especially styles with thin lines or decorative curleycues. They may look nice on the title-card, but they won't show up half so well on the screen (especially in 8mm.) as a severely simple block letter with fairly heavy lines.

Next, be sure that the lettering is properly centered in your frame. The spaces above and below the lettering should be pretty nearly equal to each other, and so should the spacing at the two sides. Be sure and allow plenty of margin all around, especially in 8mm., since different "eight" projectors center the film differently, and unless you allow ample margin you may find that titles (usually at one side) cut off when you run your film on somebody else's projector.

Be sure your camera is accurately aligned in the titler each time, too. This is especially important in some of the cheaper small titlers, which don't make

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Does Your Projector Grow Whiskers?

By F. W. PRATT, A.A.C.S.

SOONER or later if you don't watch out for them, whiskers are going to give you a headache. They are very annoying to users of 16mm. equipment, and exasperating to the 8mm. user. They can ruin film faster by their presence than almost any other minor camera or projector fault.

Perhaps I will make myself a little clearer if I explain that whiskers are those little pieces of lint or dust that lodge in the aperture plate of cameras and project, there to remain unnoticed

until they have done their beastly damage.

Whiskers have a particular fondness for sticking at the bottom of the camera aperture (the top of the picture area, since the scene is inverted), where on the finished screened picture they can dangle down and look something like hanging moss.

Whiskers are most serious on 8mm. film because the entire picture area is so small that one good hunk of dust can cover up most of the format. When this happens one is apt to feel especially bad over the spoiled film, for except for the dust images the scene may be perfect, and when projecting it you have the feel-

ing that it should be easy to push the dust away and see what is behind it. But of course nothing can be done to remove the dust image without removing the picture, too.

Whiskers occur most often in the projector, but here they are not serious. While they may mar the projection of a single reel they may be easily removed before subsequent projections.

Whiskers cause untold trouble in film laboratories, particularly in the printing operations, where a speck of dust or lint lodged in the aperture of a printer will ruin the whole roll of film. As a matter of fact, it is the danger of dust lodging on the film and aperture plate of printers which makes the negative-positive system so difficult for 16mm. films and practically impossible for 8mm. With the negative-positive system the whiskers appear white on the screen and are much more annoying than those on ordinary reversal film, which appear black.

Apparently it is possible to build up a tolerance for a moss-bordered picture since it is not uncommon to be shown a great series of home movies in which both the camera aperture and projector have become well padded with lint. Perhaps some persons might even feel that the informal deckled edge effect may have a certain charm. However, for those of us who prefer clean, sharp borders, there are two implements which should be a part of our movie kit and if used will keep whisker trouble down to a minimum.

The first is a camel's-hair brush such as those used for water colors. The second is a small rubber syringe like those commonly used by ear doctors. The camel's hair brush is particularly useful in cleaning our camera apertures, and so one should be kept in the camera case at all times and used each time a new roll is threaded into the camera. The syringe will also work well to blow the dirt out of the aperture if it has not become too firmly lodged, but since the syringe is a little larger than the brush it is not so easy to carry around in the camera case. However, it is the best little camera tool to use during projection inasmuch as nine times out of ten it is possible to blow out a speck of dirt while the projector is running rather than have to wait until the reel is over.

In both camera and projector the whisker problem is exaggerated if the film guides and aperture plates are allowed to become soaked with oil. So in addition to dusting out the aperture plates, it is necessary to wipe their surfaces free from oil and also to remove any accumulation of emulsion. The handiest tool to remove emulsion from the film gate is made from the wooden handle of the aperture brush, simply by whittling it to a chisel-like point. The wooden end will remove emulsion easily while in no way damaging the surface of the film guides, and is very much safer than any form of metal tool, however soft. **END.**

* Reprinted through courtesy of "Movie News," the official organ of the Australian Amateur Cine Society, of which Mr. Pratt is Hon. Editor.

AMONG THE MOVIE CLUBS

Share the Films!

With gasoline rationing, film shortages and other wartime restrictions tending increasingly to limit the making of new amateur films, we'd like to point out to Movie Club program chairmen that there exists a vast reservoir of interesting and instructive program material in films already made. Sure, you and your group have probably seen most of the films available from your own membership—but how about those of your fellow amateurs elsewhere? Their films will seem new to your group, and your films will be new to them. In addition, we can all learn from studying the way the other fellow tackles his picture subjects and assembles them.

So—why not a "Share-the-film Club?"

We will gladly list on this page the title, footage, etc., of films that any clubs or their members may have available for exchange with clubs in other localities, together with the names and addresses of the individuals or club officers from whom these films may be obtained.

In addition, we invite all club program chairmen and other officers to make use of THE AMERICAN CINEMATOGRAPHER'S extensive library of prize-winning films from our various International Amateur Movie Contests. These films include some of the greatest amateur movies of all time—both 16mm. and 8mm.—and are available to recognized amateur movie clubs at no cost other than transportation to and from Hollywood. We'll gladly send a list of these films to anyone interested.

L. A. 8's Share the Ride

At the Annual Installation Banquet of the Los Angeles 8mm. Club, incoming Vice-President Irwin Dietz announced that the Club was organizing a Share-the-Ride plan by which members living in the same general direction from a meeting-place could share their cars going to and from meetings. With the Club's membership scattered over a twenty-mile radius, the plan is expected to prove of great value to the members and to the Club's activities.

Winners of the Club's 1942 Contest were announced by Honorary Member Bill Stull of THE AMERICAN CINEMATOGRAPHER. First place went to retiring President John E. Walter, with second place, and the Horton Trophy for the year's best vacation movie, went to former President Bill Wade. Incoming President Fred Evans captured third place, with Bill Millar, Joe Savel, Louise

Arbogast, Gertrude Millar and Irwin Dietz following:

LOUISE ARBOGAST, Secretary.

Tri-City Dines

December 17th saw the Third Annual Dinner Meeting of the Tri-City Cinema Club of Davenport, (Ia.), Rock Island and Moline (Ill.) Scheduled for the film fare of the evening was Ray Schmidt's "Western Coast," 300 feet 8mm. Kodachrome supplemented by 50 Kodachrome slides; "The Story of 4-H Club Work," by Paul Lane, 300 feet 16mm., a specialty documentary with the recorded voices of 45 club members; "Saskatchewan," 800 feet 16mm. Kodachrome filmed by Carroll Mitchener of the Minneapolis Cine Club, and awarded a prize by the National Film Board of Canada in 1941; and Eastman's "Cavalcade of Color."

WILLIS F. LATHROP,
Secretary-Treasurer.

Long Beach Elects

Elected to head the Long Beach Cinema Club during 1943 are Claude Evans, President; Mildred J. Caldwell, First Vice-President; Pat Rafferty, Second Vice-President; Lorin E. Smith, Secretary, and A. W. Nash, Treasurer. These new officers will be installed at the Club's Annual Banquet early in January, at which time the winners in the Club's 1942 Contest will also be announced.

PRUDENCE BRAKLOW,
Secretary.

Exchange Show for 8-16's

Scheduled for the December meeting of the 8-16 Movie Club of Philadelphia was "All These We Defend," a documentary film giving a pictorial demonstration of the Bill of Rights and what it means, made by Arthur Tucker of the Syracuse Movie Makers Association.

LEON MERROW.

"Doomsday" for Metro

Program for the December meeting of the Metropolitan Motion Picture Club of New York featured the International Prize-winner, "Doomsday," filmed by Ruth Stuart of Britain's Institute of Amateur Cinematographers, and loaned from the library of THE AMERICAN CINEMATOGRAPHER, in whose contest the film won the Grand Prize. Also to be shown were "Fair Enough," by John J. Klaber; "Linda," by Richard D. Fuller; "Days Afield," by Frank E. Gunnell, and a discussion on Kodachrome exposure, illustrated by Kodachrome slides, also by Member Gunnell.

ROBERT M. COLES, Secretary.

San Francisco Sees Solomons

The December meeting of the Cinema Club of San Francisco featured a showing of a feature-length Kodachrome film

of "A Trip Through the Solomon Islands," filmed before the war by C. E. Stahl, of San Francisco.

E. L. SARGENT, President.

Philadelphia Tries Music

A demonstration of the value of using recordings to accompany a silent movie was the scheduled highlight of the December meeting of the Philadelphia Cinema Club. Equipment was also scheduled to be available for a demonstration of making transcriptions, direct recording of sound-effects, voice, and music, as well as "dubbing" or re-recording.

On the screen the scheduled program included "Autumn Symphony," by W. W. Chambers; "Whozoo," by A. J. Hurth; "Vacation in Bermuda," and "Autumn in the Poconos," both by N. L. MacMorris.

The "Film Improvement Committee," which proved such a success at the November meeting when these six experienced cinefilming members analyzed four pictures shown and gave suggestions for their improvement, resulting in some of the best discussions ever heard on the Club's floor, was continued at the December meeting, and is to be continued as a feature of future meetings.

In addition, films to be considered for the Club's Annual Contest, which will be held in February, were to be shown at this meeting, and also at the January meeting.

ROBERT R. HENDERSON,
Secretary.

X-mas Movies for Chicago

Christmas movies were the subject of discussion at the December 16th meeting of the Chicago Cinema Club. Members Bianco, Burrs and Erickson showed their previously made Christmas stories on film, accompanied by appropriate music. Following the screening, these experts led a general discussion of the subject of Christmas movies and how to make them. Due to the holidays, the Club's usual meetings, scheduled for Dec. 23rd and Dec. 30th were cancelled, but after New Year's the Club is due to start out on its regular four-meeting-a-month schedule, beginning January 7th.

BARBARA HUBBARD.

Uncut-Film Contest for N. Y. 8's

The November meeting of the New York 8mm. Club had an unusually interesting contest when the \$10 prize offered by Joseph Hollywood was won by Victor Ancona, an absentee member who had just entered the U. S. Army. Ancona's film was untitled, but otherwise was determined to have all the features necessary for a good short. The judging committee, enthusiastically seconded by the members present, also gave hearty praise to a really comic and time-

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New Photographic Books

THE THEORY OF THE PHOTOGRAPHIC PROCESS

By C. E. Kenneth Mees, D.Sc., F.R.S., A.S.C. The Macmillan Co., New York, 1942, (\$12.00).

The student of photography will greatly appreciate the new book by America's foremost photochemist, Dr. C. E. K. Mees, on "The Theory of the Photographic Process."

The immense wealth of literature on the theoretical aspect of photography is scattered in periodicals published throughout the world and, therefore, not easily accessible to everyone.

It is true that the "Abridged Scientific Publications," put out yearly by the Eastman Kodak Company, the "Veröffentlichungen," by Agfa, which began to appear in 1928, and the "Proceedings" of the various international Congresses on Photography, have brought to the attention of the scientific public the accomplishments of the several great Research Laboratories. But outside of three monographs by the members of the Technical Staff of the Eastman Kodak Company, namely: "Theory of Development," by A. H. Neitz; the "Physics of the Developed Photographic Image," by F. E. Ross; and "Gelatin in Photography," by S. E. Sheppard, very little has appeared in coordinated book form on the theory of photographic processes. Dr. Mees' book, therefore, makes its appearance at a very opportune time.

Although this book is probably most valuable to the student of photographic chemistry, the chapters on Development, Sensitometry and Theory of Tone Reproduction will be very useful to the laboratory technician. The research worker will find illuminating the chapter on the Chemistry of Sensitizing and Desensitizing Dyes, although it is regrettable that the Chemistry of Color Couplers and Color Formers, which are the basis of the Kodacolor and the New Agfa Color Processes, have been very briefly sketched.

In spite of its size (over 1000 pages of text), this book covers the wide field in a rather concise arrangement. Nevertheless, Dr. Mees has succeeded in giving many important historical citations and a very extensive bibliography at the end of each chapter.

O. O. CECCARINI.

EXPOSURE METER MANUAL

General Electric Co., 1942. 98 pages. (\$1.00)

A really good, practical book on exposure meters, how they work and how they should be used, has been needed for a long time. General Electric's new "Exposure Meter Manual" is the first attempt we've seen to fill that need from the practical man's viewpoint. Coming at this time, it is particularly valuable, for since new exposure-meters will prob-

ably not be available to most civilians "for duration," it certainly behooves all of us to learn how to get the best out of whatever type of meter we may now possess.

The book very naturally deals primarily with the use of General Electric meters, but the majority of the basic principles it sets forth can very easily be adapted to guide you with almost any other type of meter you may be lucky enough to own. The writers also take pains to point out conditions under which a straight meter-reading may be erroneous, and how the meter should be used to correct for this. There is a wealth of practical data as to the use of the meter indoors and out, for metered synchro-sunlight flash shots, and as a means of measuring negative densities in the darkroom.

The basic fundamentals of how exposure affects the picture are well explained, as is the interesting question of how film speeds are determined. In this, the writers have been much kinder than might be expected to the various competing methods of film-speed determination, setting forth the principles and advantages of each quite dispassionately. It is to be regretted that they do not provide a table by which these various rating systems may be easily correlated. That data is of course available elsewhere, but it should be here.

Personally, we also regret that more space was not given to the peculiar problems of exposure-metering involved in professional and amateur cinematography, especially the professional use of the G-E meter as an incident-light meter for determining key-light values to which the rest of the lighting may be balanced either visually or by meter. This technique is one which should be of value to the amateur and semi-professional as well as to the studio professionals who evolved it.—W. S.

THE CAMERA POCKET PHOTO GUIDE

Compiled by the Editors of "The Camera" Magazine, Baltimore, 1942. (128 pages, \$1.00)

While intended primarily for the still photographer, with only incidental consideration of movies, this little book is one of the best of the pocket photo guides. It contains a surprising wealth of material, much of which can be adapted to moviemaking problems, presented partly in the form of tables, and partly in the form of concisely boiled-down text, supplemented by illustrations wherever necessary. Among the useful features are a very clever, illustrated section devoted to basic portrait lightings; an excellent and surprisingly simple filter chart which quickly "gets over" the basic action of any type of filter on any given colors; useful technical data on exposure-meters and their use, Photoflood and Photoflash (including a valu-

able table showing how many Photofloods of any given size can be used with a given line fusing); Kodachrome data and exposure guides, and specimen releases from models for pictures which may be used for commercial purposes or for reproduction. Another clever feature is that a renewable memo pad is included in the back cover of the book.

All told, while it's intended primarily for still photographers, we would urge amateur movie enthusiasts not to overlook it.—W. S.

16mm Business Films

FREIGHT YARD

Documentary, 710 feet 16mm. black-and-white, sound.

Presented and Produced by the New York Central System.

This is one of the most interesting 16mm. commercials we've screened in some time, and an excellent technical job. It deals with a little-known part of railroading—the operation of a big freight classification yard—and has a really worthwhile instructional value apart from its purely commercial value.

Made under the supervision of Frederick G. Beach, it tells its story completely, and is an excellent example of movie-making technique. While precise data is lacking, we're inclined to consider that much, if not all of the footage is 16mm. negative. Certainly, it shows what 16mm. negative, with proper laboratory handling, can do, for it gave first-class picture quality even when viewed on a large screen. The sound—also direct-16, we believe—is also excellent.

We have a few criticisms as to the film's construction, however. It is certainly to be regretted that conditions apparently didn't make it possible to keep the movement of the freight trains in the early and closing sequences more consistently in the same direction across the screen. We'd have liked, too, to have seen closer close-ups of some of the records in the freight office, and of the action of the tonnage computer. If possible, too, a better shot of two cuts of cars coming toward the camera and going to different sides of the Y-switch would have increased the effectiveness of that sequence. Even if traffic didn't permit this, it would seem that a little rearrangement of the existing cuts, separated perhaps by inserts of the towerman throwing his lever, and the switch-points changing, would achieve this result.

The musical score is interesting, but it seems to us the picture would be better if the music-volume were lowered during the narrated portions of the film.

FOR AMERICA WE SAVE

Educational, 1000 feet 16mm. black-and-white, sound.

Presented by Firestone Tire & Rubber Co. Produced by Jam-Handy.

This unusually timely picture on tire conservation is a typically smooth Jam-Handy job, apparently a reduction from 35mm. In general it is excellent, both in technique and treatment, and is, inci-

dentally, above average as reduction-prints go.

Our chief criticisms are that in some of the animations used to show the effects of mistreatment on a tire, the action is so exaggerated that to some audiences it may produce a laugh where it should evoke a thought, and that the voices of the actors in the several sync dialog sequences seem a bit stiff and wooden.

But these minor faults to the contrary notwithstanding, "For America We Save" is a picture which should be given the widest possible circulation these days, and seen by everyone.

Home Movie Previews

THOSE WERE THE DAYS

Scenario-Vacation film, 200 ft., 8mm. Kodachrome.

Filmed by John E. Walter.

Here's a little picture we wish could be circulated among the nation's movie clubs, for it points the way in no uncertain terms to the means by which amateurs can keep their cameras turning in spite of wartime restrictions on travel and shortages of film and equipment.

As will be seen from the film's script, which is reproduced on Page 18 of this issue, the picture is cleverly made up of odds and ends of film exposed on week-end and holiday vacation trips back in the "good old days" when one could get gasoline to go somewhere, and film to expose once he got there. The thread of continuity is provided by perhaps forty or fifty feet of tie-in shots in which a husband and wife (played by Mr. and Mrs. Walter) discuss the impossibility of going anywhere that week-end, and reminisce over past trips.

Photographically, as might be expected, the picture has its shortcomings, as some of the film had obviously been gathering at least figurative dust on the family shelves for several years, and has faded until little remains except what might be a magenta-toned black-and-white image. But where the film is newer, Walter's photography and compositions are excellent. And the cleverness of the continuity and editing make it rise far above its shortcomings.

MAN-MADE JUNGLE

Documentary, 200 ft. 8mm. Kodachrome. Filmed by Fred Evans.

Taking its title from that of a best-selling book by the directress of one of America's largest zoos, this clever little picture proceeds to take the filmer and his family through the zoo in perhaps the most complete fashion we've ever seen in an amateur film. Cinefilmer Evans informs us he started out by asking the cooperation of the zoo authorities, and as a result he has some of the most interesting close shots of the zoo's birds and beasts that we've ever seen screened. Not only does he secure unusually intimate shots of these

creatures; he also manages to get unconventional angles on even the most hackneyed subjects—the sort of things you wish you'd shot, but never remembered to do when you had the opportunity.

The picture is carried along with a pleasant little thread of story, in which the family is seen every now and again trudging through the zoo or reacting to the strange animals they see. It is livened up with well-made titles, too, which are spiced with a dash of humor.

Our only criticism is that the introductory scenes, made inside the family's home, in which they decide to take their youngster to visit this "man-made jungle," are badly underexposed. The maker explains that the reason for this is that he made them on out-dated Kodachrome. Realizing that out-dated film loses speed, he allowed an additional half-stop exposure. This is not nearly enough in this case, however, (two stops would have been much more like it), and in addition the color-balance is decidedly off. It's accidental, of course, but none the less a convincing demonstration of why it's unwise to hoard film these days!

Movie Clubs

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ly effort by Member Koehler, entitled, "Lemon Aid," and to two Kodachromes, "Board of Trade," by Archibald MacGregor, and "The Portrait," by Member Roeskin.

The Club also voted to buy a dual turntable to add to its equipment, and the Committee reported on the progress of the Club Film. Other films shown included "World's Fair," a masterpiece of technique and musical scoring by Mr. MacGregor; "Alaskan Adventures," by Richard Mallory, and "Summer Beach Shots" by Member Cascio.

Highlighting the December meeting was a showing of the AMERICAN CINEMATOGRAPHER'S International Prize-winner, "Doomsday," filmed by Ruth Stuart, of England.

Photography of the Month

(Continued from Page 17)

They easily take rank as the best marine miniatures seen in many years. Most importantly, they're so completely convincing that they don't give the impression of being miniatures; indeed, at the preview we encountered several picture-wise trade-paper representatives who found it hard to believe that these scenes were not specially-made shots of full-scale warships, but miniatures.

SALUDOS AMIGOS

Walt Disney—RKO Production (Technicolor.)

Live action sequences enlarged from 16mm. Kodachrome originals.

This unique four-reel featurette comprises four animated sequences in the best Disney manner, welded together by live-action scenes enlarged from 16mm. Kodachrome originals which Walt Dis-

ney and his associates photographed during Disney's recent visit to South America.

These live-action scenes do credit to ex-newsreel-cinematographer Disney, and to the enormous possibilities latent in the enlargement of 16mm. Kodachrome to 35mm. Technicolor. They represent the first use of this enlarging process in a major feature, and as such merit careful study from everyone interested in either professional or amateur cinematography. They present an excellent cross-section of the potentialities and limitations of the process, for in some of them it is obvious that the 16mm. original was of first-rate professional quality, while in others the original was, to say the least, of no more than typical amateur Kodachrome vacation-film quality. These differences show up plainly on the screen, and clearly indicate the professional care which must be applied to Kodachrome intended for enlargement.

The animated sequences are pure Disney, which should be enough recommendation for anyone. Opinions will probably vary as to which of the four animated sequences is best. This writer's own preference is for "Aquarela Do Brasil," which is to his mind one of the loveliest things ever put on the screen. This is said after seeing it three times. And I want to see it again!

COMMANDOS STRIKE AT DAWN

Lester Cowan-Columbia Production.

Director of Photography: Lt. William Mellor, A.S.C.

Cinematographer Mellor has treated this, his last complete production before going on active service with the U. S. Army Signal Corps, in much the same dramatized-documentary fashion of his previous "Wake Island." The accent throughout is on realism and simplicity. Where necessary, he builds to considerable visual-dramatic effectiveness, but he does it so subtly that one is scarcely conscious of the camerawork, but feels only the dominant note of documentary realism.

During the early sequences, strictly photodramatic effectiveness is completely subordinated to the documentary simplicity necessary to convey the placid simplicity of life in pre-invasion Norway. One gets the impression that he is looking in on a little bit of real life in a quiet backwater where nothing ever happens, and life can be lived placidly and happily. As the Nazi invasion and its effects are portrayed, there is a definite, though scarcely noticeable building in dramatic camera-treatment, yet not enough to dispel the impression of documentary realism. The climaxing sequences of the Commando raid are, of course, action-photography raised to the highest pitch, and incidentally a very spectacular job of editing on the part of film-editor Anne Bauchens.

Mellor's treatment of his players is particularly outstanding. The reappearance of Lillian Gish, for example, after so many years off the screen, is some-

thing to cause comment, and his treatment of her brings her back with no shattered illusions to those who remember the Lillian Gish of two decades and more ago. In his treatment of the male players, he gives a succession of virile portrait-lightings which deserve the highest praise.

That sort of praise, however, does not accrue to the print which we saw pre-viewed. It was undoubtedly a first print, and not a fully corrected release-print, but it was an unusually poor one, in some sequences making Mellor's camerawork seem as uneven as that of an inexperienced amateur. We sincerely hope that the release-prints are better balanced than the one we saw, to do justice to a very fine job of photography.

YOU WERE NEVER LOVELIER

Columbia Production.

Director of Photography: Ted Tetzlaff, A.S.C.

Ted Tetzlaff, A.S.C., is without doubt one of the foremost glamor specialists of the industry, and in this delightful film (we've seen it twice and enjoyed it both times!) he is decidedly at his best. Some of his close-ups of Rita Hayworth could hardly be surpassed. In an Army camp, they'd doubtless make the audience whistle; in any photographic group they'd elicit "oh's" and "ah's" over their photographic perfection.

We liked his treatment of Fred Astaire's dance-numbers, too. They get pleasingly away from the conventional, run-of-the-mill "dance number" lightings, especially in the case of the one done on the porch to the tune of "I'm Old-Fashioned." Its the first low-key dance sequence we can remember seeing. All told, "You Were Never Lovelier" is another picture we don't want to try to describe, but urge you to see.

LIFE BEGINS AT EIGHT-THIRTY

Twentieth Century-Fox Production.

Director of Photography: Edward Cronjager, A.S.C.

This is another of Eddie Cronjager's excellent examples of smooth cinematography. It's not up to "The Pied Piper," for neither story nor locale give such opportunities for cinematographic effectiveness and mood treatment, but it is none the less excellent.

An epigrammatically-minded commentator might dismiss it by saying that he's dealt excellently with Ida Lupino and with Monte Woolley's beard, and let it go at that. But Cronjager has done a good deal more than that: in a picture which would have been dramatically harmed by obviously pictorial camerawork, he has held himself in, and kept his camera-treatment perfectly attuned to the action and locale. Often that is a great deal harder to do than to turn out a spectacular example of "pretty" camerawork.

George Barnes

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achievements of the early 20's.

Soon after this he joined the United Artists' organization, where he photo-

graphed Rudolph Valentino's two last productions, "The Eagle" and "Son of the Sheik." It was on the latter production that he pioneered in the use of two of the most important advancements in cinematographic technique—panchromatic film and incandescent lighting. Now that these two developments have become accepted as such indispensable commonplaces that it is impossible to imagine making pictures without them, there is no shortage of claimants for the honor of having used them first. But back around 1926 it was different: it took real courage to stake one's reputation on the performance of such new and untried materials and equipment. And Barnes was among the first—if not, indeed, actually the first—cinematographer to employ them throughout a top-flight major production.

Panchromatic film brought with it all sorts of disturbing changes. There was a change in film-speed. There was a definite change in contrast. And there were new and unpredictable changes in the way this new emulsion would render colors, both on costumes and in make-up. Unless a cinematographer was very sure of himself and his knowledge, he could easily wreck his reputation by making his players look worse, rather than better, because of using the new film.

Incandescent lighting was another problem. General Electric had developed high-powered globes suitable for photographic use—but there were no lamps in which to use them. Barnes had to improvise his own, using a simple parabolic reflector and, in some cases, a small barrel housing to eliminate stray light-rays. In addition, while it was learned that the more red-sensitive panchromatic film was "faster" to the warmer light of the Mazda, no one knew just how much so, or in what proportion to balance Mazdas and the usual bluish arc and mercury-vapor lighting. And there were no exposure-meters in those days! Barnes' success with these new materials on "Son of the Sheik" is high tribute to his technical skill, as well as to his technical progressiveness.

Thereafter, for some eight years, Barnes spent most of his time with the Samuel Goldwyn organization, photographing the long series of romantic dramas co-starring Ronald Colman and Vilma Banky—pictures which were consistently distinguished by some of the finest pictorial camerawork of the climaxing days of the silent picture.

Indeed, pictorialism has always been the distinguishing feature of Barnes' camerawork—magnificent pictorialism and an unexcelled attunement of visual mood to dramatic mood. "Rebecca," which so deservedly gained him the Academy Award for the year's best black-and-white photography of 1940 was perhaps the most spectacular example of this, with its remarkably interlaced changes of mood and key, yet with a steadily mounting atmosphere of menace subtly dominating every scene

and sequence. But almost any of Barnes' films will afford a worthwhile study in both cinematic mood and pictorialism.

He approaches each assignment consciously seeking opportunities to make his camerawork and lightings enhance the dramatic mood of the action.

"My first step on being assigned to a production," he says, "is to sit down and try to visualize the script as I read it. I try to analyze the dramatic values of each scene and sequence, and decide what visual treatment will suit each best. I break things down in my mind and decide which sequences will call for high-key treatment, which will benefit by low-key treatment, and where and in what scenes my photographic transitions between the two should come.

"When I have this clear in my mind, I go over the script in the same way with the director, making sure that we both see the dramatic values—visually, at least—in reasonable agreement. From that point on, it's a matter of coordinating the physical details of production—sets, costumes, and so on—with this advance visualization.

"Of course, some pictures can stand more of this mood treatment than others. A picture like 'Rebecca' is a delight to do, for it offers such great opportunities for mood and pictorialism. In a picture like, say, 'Wake Island,' to go to the opposite extreme, the photographic opportunities aren't so obvious. They're there, but they're different. Pictorialism—at least of the more noticeable kind—would be badly out of place. But the need for keying your photography to the dramatic mood of the action is still there, more strongly than ever. Only in this case you must do it very deftly, so that you still keep the dominant accent on realism."

Another phase of George Barnes' approach to his work is one he doesn't talk much about—the thorough-going training he gives the members of his camera crews. But if you were to go through the list of men who have been operatives or assistants with him in the past, and then gone on to shoulder the responsibilities of full-fledged directors of photography, you'd find yourself building a remarkable list of outstanding cinematographers. Without doubt the most spectacularly outstanding alumnus of Barnes' training is Gregg Toland, A.S.C.; Harry Wild, A.S.C., is another, and so is Stanley Cortez, A.S.C. Decidedly, Barnes trains is junior fellow-workers, and trains them well. Maybe he remembers the training he received twenty-five years ago from John Stumar, which started him out on the path to the cinematic heights! END.

Convoy

(Continued from Page 12)

you've light enough to make a slow, fine-grain film like Background-X fully satisfactory. But a lot of the crucial

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action is likely to occur in the early morning or late evening, when the light isn't so good. Then you'll appreciate a faster emulsion like Plus-X or Super-X.

You'll find these faster films useful, too, for making interiors below-decks. We hadn't expected to shoot interiors, but when we got there we unexpectedly found it necessary to make a few shots in the engine rooms and living quarters. With the help of the ship's electrician and the Canadian Navy stillman who was assigned to work with us, we managed quite well, using Photofloods screwed into regular lighting sockets for illumination. On some ships which had 110-Volt current, we could power the Photofloods from the ship's generators. Wherever this current was available, we also used it to power the camera-motors, as it gave a steadier current than batteries.

In closing, I'd like to express my appreciation to the officers and men of the Royal Canadian Navy, who cooperated so well with us, and helped make our pictures even better than we had hoped. I hope that when the picture is finished, they'll find we've done as well by them as they did by us. END.

Propaganda Films

(Continued from Page 11)

narration translated into twenty different languages for international distribution.

The making of these reels was based on one of Dr. Goebbels' pet ideas—to assign trained cameramen to keep pace with the military units in the field. These cameramen were attached, along with other propaganda experts in radio and newspaper reporting, to the high commands of front-line units. When Hitler's mighty war machine rolled into Czechoslovakia, and later thundered across Poland late in 1939, over 40 of these ardent cameramen lost their lives. In this campaign nearly all of the cameramen were civilians, and due to the losses they suffered, it was decided to make soldiers of them thereafter. They were sent to field training-schools upon their induction, and were taught the most important factors of modern warfare, since being a cameraman was usually a secondary duty for these technicians. Most of them were promoted to the rank of non-commissioned officers, and a few of them received commissions, depending of course on their qualifications.

Their films were not only used as a powerful weapon of propaganda, but as a means of training young officers and enlisted men in the technique of blitzkrieg. Taking a leaf out of the book of the World War I film-makers, these films naturally concentrated on German victories and enemy blunders. Being planned primarily for propaganda, the makers of these films saw to it that if neither of these existed in actuality, they would be staged for the camera. Often they got their most effective pictures long after the actual capture of

a town by carefully staging the action, and always, you may be sure, playing up to the full the might, courage and all-around invincibility of the Nazi supermen and their war machine.

The story of how one of these films—the feature-length picture of the blitz across Poland—paid off its makers has become familiar. Shown to selected audiences of officials of neutral Scandinavian countries, the film is credited with doing much to “soften up” these queasy Quislings and making possible an almost bloodless invasion. Later films, including “Victory in the West,” the film record of the fall of France and the Low Countries, played similar parts in the Nazis' domination of other countries in central and southeastern Europe.

But these excellent pieces of propaganda have backfired upon their makers. A great deal of this footage, en route to Latin American countries to begin a similar softening and pro-Nazifying process in our own hemisphere, was intercepted by the British Navy, and in due course became available to film-makers in this country and Canada. The March of Time used some of it most effectively in “The Ramparts We Watch”; the Canadian National Film Board used much more of it in “This Is Blitz” . . . in each case with narration and audience-effect wholly unlike that which Dr. Goebbels intended—to arouse the people of the United Nations to an awareness of the enemy we are fighting, and to impress upon them the fact that these enemies are *not* supermen, but merely well-equipped gangsters who can be beaten if we “git thar fustest with the mostest.”

Finally, you may be sure that prints from these negatives serving yet another vital purpose, one which will cause Dr. Goebbels and his master endless distress. Used in the training of officers and men of the United Nations' Armed Forces, they are giving a visual education in blitzkrieg to the men who are already proving they can out-blitz the blitz, and turn it back to defeat its Nazi inventors! END.

Better Titles

(Continued from Page 21)

anything like adequate provision for holding the camera rigidly in place. With most of these titlers a little time spent in tinkering up an adapter that will fit your camera into the same position every time will pay big dividends in better titles.

By all means shoot your titles on the same type of film the rest of your picture has been shot on. For a Kodachrome picture, your titles should of course be made on Kodachrome, too. For a black-and-white picture, use the same make and type of black-and-white reversal film you used for the picture: if you shot the picture on Eastman film, make the titles on Eastman film; if you shot it on Agfa, make your titles on Agfa. If you don't, you'll find differences in contrast and, even more important,

in the thickness of the film, which will make your titles stand out from the picture in an unpleasant way. If the title-film is thicker or thinner than the picture-film, one or the other will be out of focus.

And, by the way, if your picture (black-and-white, that is) is several years old, I'd strongly advise you to humidify it before trying to cut in titles just made on fresh film. The difference in moisture content will be quite enough to throw your titles out of focus.

Using reversal-film of course means that you should have light letters on a dark-toned card. Yes, I know quite a few professional films during the last few years have had main titles which used dark letters on a light background: but these were always for introductory titles—never for subtitles cut in between picture scenes—and if you'll notice carefully, you'll see that even so the light-toned background is generally a light gray rather than pure white. The light lettering on a dark background is more legible, and gives a smoother visual continuity with the picture than dark letters on a light background. Besides, I've never seen a dark-on-light amateur title which was correctly exposed, anyway, and when these titles are underexposed they're pretty horrible examples of what shouldn't be done.

The best way to calculate exposure, by the way, is to take your meter-reading beforehand using a sheet of neutral gray paper in the titler. This will give a reading that is usually the most satisfactory balance between the dark tone of the background and the light tone of the lettering.

Always try to have a definite contrast between the letters and their background. If you're working in black-and-white, use clear white or silver letters against a flat black background. If you're working in Kodachrome, be sure you have a definite color-contrast between background and letters. Probably the best all-around combination to use is white letters on a deep blue background, though if your picture has a color-scheme that will stand it, and your taste runs that way, I won't argue with you if you use a red background rather than a blue one. Incidentally, you'll get some first-rate ideas for color combinations if you study the main titles of Technicolor pictures—especially some of Walt Disney's pictures.

For most titles, other than main titles, a very simple, unobtrusive background is by far the best. For black-and-white, a plain, flat black or dark gray; for Kodachrome, a plain, solid color. Patterns or decorations are generally imitating except for main titles and key subtitles which introduce a new sequence. After all, titles shouldn't draw attention to themselves, and next to inadequate titles and badly made ones, probably the worst amateur title-fault is using titles that too violently call attention to themselves.

Finally, remember that what the titles say is every bit as important as how they look. There should be enough of

them to give a clear explanation of everything you'd explain verbally if you were showing the picture, untitled, to a friend. And the wording of each title should be ample to make its meaning clear. I know some of the textbooks suggest trying to polish the wording of titles for brevity as though you were composing a telegram, but personally, I don't agree. Most of the amateur titles I've seen say far too little. In a picture of Yosemite, for instance, the bare statement "Mirror Lake" in a title leaves half the story untold. A title such as "We had to get up early to get this shot of Mirror Lake, for soon after dawn the daytime breeze ripples away the reflections" not only carries your picture along better, but by telling something interesting about the coming scene, makes it more interesting to the audience.

Similarly, most pictures—especially travel and vacation films—would benefit by an introductory title between the main title and the initial scene, unless, of course, you've tied your picture together with staged action of a story nature. Most amateur travelogs jump into things much too fast. I recall, for instance, an entry in a recent club contest which illustrated this excellently. The picture dealt with one of the most picturesque and off-the-beaten-path hamlets in Mexico. The main title—"Primitive Patzcuaro"—hinted at this; but then the picture jumped literally into the main street of the village, without a word of explanation. And all through the picture you were wondering where Patzcuaro was, and why it was primitive. Two or three sentences in an introductory title immediately after the main title—perhaps supplemented by an insert of a map—would have cleared the whole thing up, and made the picture much more enjoyable. I think it would have lifted it to a higher rating in the contest, too!

Yes, there's plenty in the way of filming opportunities if you try re-titling some of yesteryear's films. It doesn't take any gas, and you won't consume much film. But when the job is done, I'm confident you'll find that if you've done it well, those films of yesteryear will seem new to you—and to your audiences, too. END.

Edit for Balance

(Continued from Page 20)

the screen. It saves footage, too. All sorts of actions can beneficially be treated this way. And if you use spoken titles, the same thing holds good: cut in the title just after your picture shows the character starting to speak, and when you cut back to the picture, show the person just finishing speaking. The audience, while reading the title, will mentally bridge over the gap in pictured action, and will accept this treatment as being much more natural than if you had showed the entire action.

You are getting on with the story, *the* important thing, when you lop off any-

thing that does not contribute. To establish the fact that a character leaves one room for another it is not necessary to include the action that takes him to and through the door of one room and then pick him up as he emerges through the door in the next room. Once it has been established that he is going through that door, the next scene can cut in when he is well in the room. This illustration can have many applications. And while this cut involves only an inch or two of film, the sum total of such cuts in a picture can mean the difference between its being interest-sustaining or tedious.

You can use the same principle to speed things up and save footage in many other ways, too, especially if you know how to balance shots of the actual action with intercut shots of somebody's apparent reaction to it.

Take a horse-race movie, for example. Excitement is added and there's no loss of realism if you build your sequence this way: begin with a shot from the grandstand of the horses getting away from the gate. Then cut to a long-shot (preferably from more or less of a reverse angle) of the crowd reacting to the always thrilling cry "They're off!" Then cut to your long-shot of the horses at the first turn as they jockey for position on the rail. Then cut to a fairly close shot of only one or two people in the crowd, as each reacts to the way the nag his money is on is being handled. Next, cut in that follow-shot you made as they raced along the back-stretch. Follow this with more reaction-shots among the crowd—preferably from increasingly close angles. Next, cut back to the horses as they round the final turn into the home stretch. Follow it by a shot—maybe a succession of quick, close shots—of spectators as they anxiously urge their favorites on. Then cut to your shots of the actual finish, after which you can end your sequence with reaction shots of the spectators—the lucky ones gesticulating their joy and perhaps heading for the pay-off window, and the unlucky ones tearing up their tickets and tossing them away.

You may not have shown all the race in the literal sense—probably your reaction-shots may have been made at another race, anyway—but in the more important picture sense, you've really shown all the race, for you've captured the spirit of thrills and uncertainty which make any race dramatic. And you can trust the imagination of the audience to fill in the blank spots in the actual coverage of the race itself.

In a word, the best rule to follow in editing film is—cut it in when it becomes important or interesting . . . and when it has made its point, CUT IT! END.

Skis

(Continued from Page 19)

as a consequence is able to record only a part of the activities of the swift and

far-travelling skiers, Dr. Howard dons his skis, abandons his poles and takes the camera a-skiing.

Thus equipped he is able to follow the skiers in their fast-flying, downhill gliding and cross-country runs, and bring to the screen much of the real thrill and exhilaration enjoyed by the "average" or only moderately accomplished skier. All this amidst scenes of majestic grandeur seldom glimpsed except by the hardy sportsmen who strap "barrel-staves" on their feet and skii up to it.

He does this, mind you, while holding the camera in his hands. Somehow he manages to keep it focused and steady while sliding down hill, at a sometimes dizzying pace, past shrubs and trees and other things that quicken the pulse of the aesthetic photographer but serve only to trap and trip the unwary skier. This in itself is no mean accomplishment and these sequences alone would make the film well worth seeing. Particularly since the efforts of the industry's best newsreel cameramen, with their bulkier equipment and invariable inability to skii, have fallen far short of the standard set by this self-proclaimed amateur.

To further gain the interest of the potential skier, and as helpful instruction for the beginner, Dr. Howard has included some better than average slow-motion shots. The performers in each instance are top-ranking skiers and they execute, for the benefit of the camera, the various turns and jumps and bends without which it seems no skier would care to practice his hobby.

Incidentally, Dr. Howard told us that he wears out four camera-motors every year getting these slow-motion sequences. He also told us that his sole equipment consists of "an inexpensive Eastman camera," probably of the magazine type. Anything else, he said, would be too cumbersome to manipulate during the moving shots taken from skis. Well, he turns in an excellent show.

Adding a topical note, Dr. Howard mentioned that the many thousands (exact number a military secret, but a considerable and formidable force) of men comprising the United States Mountain Troops (Skii Troops) were recruited in a large part from the skii enthusiasts who had learned their skiing in peacetime.

For the sake of the record we must report that Dr. Howard and his camera out of the snow do not turn in the same satisfying performance that they do in the snow. There are many things he could learn, some of them fundamentals, from amateurs whose pictures have never been seen by anybody outside of family and friends. The opening sequences of his present film could be cut extensively, or even done away with entirely, and there are some bad cuts here and there. As a whole, his pictures are of such interest that it might pay the good doctor to equip himself with something more than his "inexpensive Eastman" for those shots, which form

the bulk of the picture, who do not require him to shoot from slithering skis. He would improve the texture of a lot of shots, too, I think, if he would use a coated lens and a more adequate lens-shade.

But these things are beside the point. The point is, that despite these shortcomings, most of which are unimportant, the picture is a great success and fulfills its mission admirably. In sum and substance it represents a strong argument for any picture sincerely made by someone with a complete knowledge of and enthusiasm for the subject-matter. It is an endorsement of Dr. Howard's initiative, an entertaining and interesting cinematic treatment of a national pastime. In addition it is further proof of the growing use to which the 16mm. medium is being put and it presents a challenge to other cine-amateurs with an idea and a purpose to put their ideas across and help achieve that purpose through a most convincing medium. END.

"Left-Overs"

(Continued from Page 18)

Scene 24: Front door closes, showing on back of it

Title: THE END.

Fade-out.

There are endless variations of this script and the actions of the people who join in it with you. Get busy on a new-old film of this type; the fine results you get will surprise you as they surprised me. END.



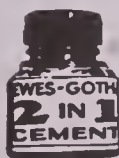
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Kodachrome

(Continued from Page 13)

floods and more filters on the camera lenses to attain the color-balance I desire.

Standard studio lights plus a light blue filter on the camera lenses with Type A Kodachrome will deliver exactly the same magenta-toned result as Photofloods and CP's with no filter on the same film.

However, many producers prefer the results obtained by using "hard" lights (arcs) with regular daylight Kodachrome. I, too, like the results from this practice. The colors seem to have more density (color saturation). If Mazda lights are used with the arc lighting, MacBeth blue filters must be used over the lamp lenses (not the camera lenses.)

Even with the MacBeth blue filters on the Mazda units they seem to emit an excess of red which must be subtracted from the scene by use of a green-blue filter on the camera lens. The density of such a filter can only be determined by the number of such Mazda units in use and the color of the subjects they are lighting.

One of the big factors in favor of using daylight Kodachrome indoors lies in the fact that the colors on a human being (clothing and skin tones) match more accurately when shot outdoors with daylight and indoors with arcs.

Another factor in favor of using daylight Kodachrome indoors occurs when it is necessary to mix daylight with artificial light . . . in factories, offices, homes and the many other places where Kodachrome is required to bring perfect results. Usually it is impossible to have arc lights on such occasions, principally due to cost.

Thus it becomes necessary to use Mazda with MacBeth blue filters. One very important precaution must be taken into consideration when setting up in the typical location. Remember, Mazdas covered with MacBeth blue filters still emit some red, and the longer the electric feed lines are from source to each unit causes a voltage drop to each lamp which makes them emit still more red which must be subtracted by use of a green-blue filter of proper density on the camera lens.

Another headache that nearly always occurs on set-ups in factories and office buildings is the fluctuations in line voltages caused by the starting and stopping of elevators or other heavy electrical equipment. What with industry under wartime production pressure it becomes impossible for the assistant director to have a plant's production stopped long enough for a well-balanced "take". There's no cure for this little aspirin salesman. You've got to take it, even if you don't like it.

Of course, the easiest way out of all this trouble of mixing lights is waiting until after dark and using Type A with Photofloods and other Mazda units. The only minor fault will be that the colors will not match as accurately with ex-

terior scenes of the same persons . . . if people are being used outdoors and in. Your story will determine how best to shoot.

In summation . . . shooting Kodachrome requires just a little knowledge: astrology and psychology should start you off right with your producer . . . Arithmetic to know what filters to add to camera lens or light unit in order to subtract unwanted colors, will keep you right on the screen . . . Entomology (my dictionary's definition proves it is helpful handling camera bugs) . . . Accounting to know how to charge and collect for your ability . . . and above all that sense of humor when clouds start rolling across the sun in middle of takes, elevators or motors start up to dim your lights just as the camera starts . . . crew chatter about gin-rummy or football or blondes, just while you are figuring out what density of blue filter must be added to subtract some undesirable rust.

Above all, to do a good job with Kodachrome take a little additional time, demand the accessories you know you'll need: lights, reflectors, diffusion, scrims, filters and most of all, a good crew. Your producer may yell about the costs but he'll yell louder and longer if the results are bad.

And before I forget, my sincerest apologies to those Kodachrome cameramen who have been telling their bosses that "Kodachrome can only be shot between 10 a.m. and 2 p.m. for best results." END.

Television

(Continued from Page 9)

audience, far from being bored by it, has come to anticipate its fun sequence by sequence, as Rochester's telephone call and The Mighty Allen Art Players are announced.

The difference between the radio pattern show and the television pattern show has been simply this: that in radio the material within the continuity skeleton is carefully rehearsed, while in television it has been barely rehearsed at all. At CBS our factual shows such as Red Cross instruction or art appreciation, although thoroughly prepared and documented, were completely ad-libbed; our entertainment shows were combinations of material from other mediums—mostly vaudeville and night clubs—which were placed on our stage with little alteration and less rehearsal.

Under these conditions, where the success of the weekly pattern depends on the televisor's ability to pick up ad-libbed or unfamiliar material with little or no rehearsal, the cameraman's contribution is of obvious strategic importance.

It is highly probable that, as in the early days of radio when the industry was still fumbling for the most profitable form of operation, the first post-war telecasters will continue to explore this technique of patterned informality. When they have milked it dry of both

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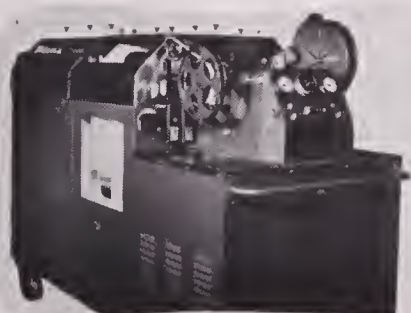
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the technical experience it can provide and its appeal to the audience, they will undoubtedly proceed to the more elaborate programmes requiring memorizing of lines and longer rehearsals.

Until that change takes place, a considerable amount of the responsibility

for the success of the show will continue to rest on the ability of the cameramen to shoot it correctly without ever having seen it before. When the ad-libbed, informal material within the program patterns is replaced by skillfully produced and rehearsed material, the cameramen's status may be lessened.

No one, at this date, can accurately predict the percentage of that replacement. I think, however, we can safely assume that since, by definition, the main characteristic of the medium is its ability to transmit sound and picture instantaneously, a considerable amount of television air time will always be taken up with material to which this property of the medium can bring a unique service—namely mobile and studio sports, spot news and special events. These are by their very nature unrehearsed or barely rehearsed programs. They will demand the same sort of camera creativeness that played the major part in the informal studio programmes. If we realize that the quality of unpredictability, common to sports and news events, occurs as well in other sorts of programs, quizzes, amateur hours, public discussions and debates, some educational, and all audience-participation programmes, then we can only conclude that in the future most of the time the cameraman will have to function very much as he does now.

But what of the rest of the television schedule? That is again a guess

—only a guess—which I should like to make. I feel that just as the audience will love the spontaneity, the informality of its sports, news, and special events programmes, so it will reject the deleterious effect of the over-cheap production methods associated with informality when it appears in dramatic, variety, or tightly written factual shows. Indeed, the mere fact that a show is not canned on film but is known to be happening while the audience sees it, makes informality a virtue. But actually, the more informal a show *seems*, the more painstaking its production, the longer its preparation, and the more expensive its talent. As Henry Ward Beecher once put it, the best extemporaneous speeches are the ones which have been the most carefully prepared.

I do not think it is stating a fact with which the telecasters themselves will quarrel if I say that to date much of the nation's television fare has not been consistently up to the entertainment standards set by the American public. This has been very understandable because the telecasters have been forced to spend most of their relatively small budgets in expanding their knowledge of the technical, social and economic aspects of the new medium. They are aware that the faults in their studio programmes have been due to inexpensive talent, unskillful production or a virtual absence of production.

At CBS we believe that experimental operations have taught us the "feel" of the medium plus considerable knowledge of its cost and future economic structure. We know that both talent and production value are purchasable at a price and our current studio shows—both the informal, productionless ones and the production "pattern" shows—have given us a yardstick indication of what these costs may be.

Now, for the non-mobile, non-special event operations, this evolution from the informal, unrehearsed, unproduced type of television program to the formal, rehearsed, skillfully produced type of program may make a considerable change in the cameraman's status.

No longer will unfamiliar material be thrown at him, challenging his intelligence and ingenuity to produce a satisfactory pick-up. No longer will every television show be a race between the unpredictable action on the stage and the divining powers of the cameraman. On the contrary, if there are production and rehearsals, there will be camera treatments planned in advance and the equivalent of a film's shooting script.

This means that for the studio type of programme the cameraman's major task while on the air will be the mechanical one of remembering a shooting treatment set in rehearsal, and operating his camera skillfully. Nominally, he will be the operative cameraman as opposed to his present approximation of some of the duties of the Director of Cinematography in films.

Note that I use the qualifying phrase

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"on the air." The introduction of production value will undoubtedly disturb the present ratio of rehearsal to air time to a tremendous extent. The time allotted for rehearsal and planning will many times exceed actual air time.

If the television cameraman is to become an operator only, he will have little part in these non-air operations. If he is to maintain his present superior position in the industry, he will have to participate in, if not actually direct the planning of camera-angles and movements as well as lighting.

Unfortunately, I do not think it is in the cards for him to perform either of these tasks and consistently operate the camera. Peculiarities of the Television production process stand in the way.

It is difficult to describe the specifics of this process in general terms. For this reason I have chosen as an example of the cameraman's function an actual sequence from a very advanced show already transmitted—the Ballet "Billy The Kid" starring Eugene Loring and the

Ballet Theatre Group. I think it will show the cameraman's job more graphically than a generalized description.

Although the rehearsal and planning time spent on "Billy" was relatively short, the camera, lighting and sound treatment were definitely planned in advance. The result was a much greater coherency of production treatment than we had hitherto been able to give a subject. To a limited extent, therefore, "Billy" was probably a good deal more like the television shows of 1948 than of 1942.

Camera No. 1 (6" tele lens, equal to 40mm. lens with 35mm. camera) takes the horse-thief, stage right, struggling with a group of the sheriff's men in a medium-shot.

A cut is made to a pick-up from Camera No. 2 (12" tele lens, equal to 3" lens with 35mm. camera) Billy and his mother, stage left, walk into frame camera right. They are strongly spotted and did they not fill the frame in a close two-shot, their shadows would be observed on the faces of the other dancers standing behind them.

Cut back to Camera No. 1 as the horse-thief gains his freedom from his captors and pulls an imaginary gun. Meanwhile a grip has pulled his 5KW floor spot to camera left and widened the beam so as to remove the shadows from the dancers behind Billy in readiness for the next cut.

As the struggle continues, Camera No. 1 trucks back to a long-shot including the entire stage. Camera No. 2 pulls back simultaneously, off the air, to avoid getting into the angle of the No. 1 shot. It stops at a full-length two-shot of Billy and his mother. Still in the long-shot, the horse-thief shoots wildly about him and a bullet strikes Billy's mother. As she falls, the cut is made to the waiting camera No. 2 which zooms into a medium-shot of Billy lowering the body to the ground, and then in further to a close-up of the mother's face and limp arm.

As Billy's feet move out of frame, camera left, walking slowly and ominously, the cut is made back to No. 1 on the frightened crowd, and Billy enters, camera right, in a medium-shot.

Meanwhile, off the air, No. 2 wheels into a close-up position on the horse-

thief's back and as Billy stabs him the movement is seen in close-up.

Cut back to Camera No. 1 on a waist two-shot, and truck back raising the crane arm to admit dancers in the foreground who crowd Billy. And so forth.

"Billy The Kid" ran thirty minutes and spilled over the 40'x44' television stage in many different choreographic groupings with twenty dancers. I do not think I am exaggerating when I say that the ballet came over nearly as effectively as it would have had it been shot, re-shot, and edited on motion picture film.

Yet, only the director had seen the ballet before, and the cameramen and other technicians who did the show had only a sixty-minute rehearsal period with one dress rehearsal in which to feel the music, get to know the choreography and design the camera treatment. And ninety minutes of rehearsal to thirty minutes of air time is a long rehearsal period in terms of current television practice.

The television cameraman's job is now obvious. He must pan, tilt, truck and compose in keeping with the demands of the subject. He must do this with one eye on his finder, the other on the next move, and a kind of third eye on what the other cameras are doing so that he does not get a shot which will produce a bad optical shock when the cut is made to or from him. He must balance the demands of the individual shot with the all-over pace of camera treatment demanded by the mood of the show. He must keep the moving subject-area of the scene in focus or split focus between significant areas continuously and unnoticeably. He must do so by constantly adjusting a crank or wheel with one hand, panning or tilting with the other hand. Somehow he must simultaneously push a self-propelled dolly or signal an assistant to push it for him.

He must do this in the face of a depth of focus about exactly similar to that obtained with a Speed Graphic carrying either a 6-inch or a 12-inch lens, operating at apertures from 2.7 to 4.5. He is often cursed with an upside-down, in-



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verse-image viewing screen or finder, and inaccurate parallex correcting devices for which the shouted corrections of the control-room director are little antidote.

If the show has been rehearsed he must remember and follow the camera treatment agreed upon exactly. If it has not been rehearsed, he must, willy-nilly, shoot it "off the cuff"—and do a good job. He must do all of these things without error because *when his camera has been placed on the air by the director, there are no retakes—the audience sees the picture as he shoots it when he shoots it.*

No matter what kind of a show it is, mobile or studio, rehearsed or unrehearsed, the basic fact is that the cameraman controls an instrument of selection and interpretation which is the sole means of carrying the show to the audience.

In the television shows that are unpredictable, the responsibility for that selection and interpretation rests largely with him. For predictable, planned and rehearsed shows, there will naturally be far more time to correct errors and plan shooting treatments. Nevertheless, the skillful execution of those treatments will still depend largely on the cameraman.

It is this fundamental fact which differentiates a television cameraman from a motion picture camera operator. In film the director can screen rushes and re-shoot and edit accordingly. In television the director cannot. For predictable actions he usually counts on the ability of the cameraman to give him for the air show the shots set in rehearsal. For unpredictable shows he must rely almost entirely on the cameraman's creative ability. This is the basic reason why the television cameraman, regardless of the part he may or may not play in the nominal direction of the show, has so much greater responsibility than that of a film camera operator.

These are the operating functions of the television cameraman. They are, as I have indicated, under the present informal, unrehearsed pattern technique completely vital to the art. The ability to fulfill them skillfully should place the individual cameraman in the top ranks of those who will be employed in the post-war television industry. But as the industry changes to more rigid and elaborate production methods, the recognition of the value of this degree of spon-

taneous camera ingenuity and initiative will decrease.

The cameraman, for at least half of all programmes, will then have to function as a subsidiary to the director, or, as the cameramen did in the prophetic "Billy," collaborate with the director in the advance shooting scheme of the show. It is probably, as I have indicated, that regardless of the trend toward elaborate, formal production in the studio, the cameraman will still find opportunity for creative activity in the mobile sports and special events telecasts which I think will make up about half or more of the television schedule.

Nevertheless, it will be in the economic interest of the telecasters to regard studio operations as the hallmark of the cameraman's value. I do not think he will be credited with any other value unless he follows in the steps of the motion picture cinematographers in consciously and willfully emphasizing his importance to the art.

So far as I can see that importance is the job of visualizing the material placed before the cameras—that is not only the operating of the cameras, but that of lighting technician, shooting script creator, and the cutter.

As can be seen from the description of "Billy The Kid" production, it is difficult to imagine such a cameraman operating the camera as well as simultaneously designing the way it is to be used. For this reason, I think the post-war television studio will have television camera operators plus men similar in capacity to directors of cinematography who will do or collaborate on lighting, shooting treatments, and cutting. What amount of credit and remuneration the operators will gain for themselves will depend entirely on their own abilities to convince the telecasters of their importance. As to the position of the chief cameraman, or director of visualization, or whatever he may be called, assuming I am correct, it is impossible to predict whether he will function in that way alone, whether he will combine these functions with those of a programme director, or whether, should he combine them, he will more likely be a radio or film director who will have picked up the necessary technical knowledge.

However, a more detailed description of the television production methods may allow the reader to make his own prediction. (To Be Continued)

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Progress

(Continued from Page 7)

process. This is at present strictly an amateur process for use in rollfilm cameras, and while available commercially, is necessarily being exploited on a decidedly limited scale "for duration," the present operations consisting of scarcely more than pilot-plant operation in comparison to the obvious potentialities of the process.

Reports of the perfection of Agfa Ansco's long-rumored Agfacolor process have also been officially confirmed, and the film is understood to be in production, though it is not stated whether the process now in use is a reversal or a complementary-color negative-positive system. Both are known to have been under experiment. This product also is understood to be restricted exclusively to military use "for duration."

The use of natural-color photography and cinematography, both 35mm. and 16mm., for military purposes is known to be enormously on the increase. In 16mm. form, it naturally offers remarkable advantages in convenience and portability of equipment for combat cinematography, as evidenced by Commander Ford's film of the Battle of Midway. It is also understood to be proving invaluable for aerial reconnaissance, as it is stated to be in many cases the most infallible method of penetrating camouflage.

The use of 35mm. enlargements from 16mm. Kodachrome originals has already been mentioned. In the long run it must be regarded as probably the year's outstanding development in color of an immediately practical nature.

35mm. Professional Cameras

Without doubt the outstanding development in the 35mm. camera field was the development of a radically new camera, designed primarily for military combat use, by camera-engineer Harry Cunningham of RKO. The camera is built in gunstock form for hand-held operation in the field or in the air, yet it embodies an excellent pilot-pin movement of studio type, designed and built to thoroughly professional standards of precision. Interchangeable magazines, each of which contains its own movement, facilitates quick reloading under the most difficult conditions, and the

operating controls are grouped to permit operation even in high-altitude flying gloves or under similar unfavorable conditions. The use of magnesium and similar lightweight metals reduce the weight of the camera to the almost incredible figure of 13 pounds. It appears to be ideal for military use today, and should revolutionize newsreel and expeditionary camerawork after the war.

Another interesting professional camera, apparently as yet largely in the experimental stage, is the "Electroplane" camera based on the designs of the late Dr. L. M. Dieterich, A.S.C., and P. Stanley Smith. This camera—or rather a special mechanico-optical system fitted to a standard Mitchell camera—is stated to produce a uniformly sharp image of everything from four feet to infinity by means of a lens developed from Dr. Dieterich's original "Detrar" design. In this, one element of a special four-element lens oscillates constantly during the exposure of each frame of film, moving the plane of sharp focus repeatedly from four feet to infinity and back without changing the image-size. The oscillation is produced by an electrical mechanism, somewhat similar to the voice coil of a loudspeaker, and synchronized to the movement of the camera.

16mm. and 8mm. Cameras

But one new substandard camera appeared during 1942. This is the Berndt "Auricon" single-system 16mm. sound camera, which was actually designed before America's entry into the war, and subsequently modified to minimize the use of critical materials, castings, etc. In its present form the Auricon camera is housed in a wooden box within which is a sturdy metal plate which serves as a framework to carry the mechanism. The film-carrying movement is essentially similar to that of the same firm's Auricon recorder, with of course the addition of an excellent intermittent picture movement. An ingenious dual drive is employed, with an unusually small synchronous motor used to drive the camera itself while a larger, non-synchronous motor governed by the camera-motor powers the take-up. The recording galvanometer and amplifier are identical with those used in the Auricon recorder. The entire unit has been planned for simplicity, portability and—probably the first 16mm. sound-camera so planned—for sale at a price within the reach of at least the more prosperous advanced amateur. As such, it seems certainly the forerunner of many others which we may expect to see after the war.

Lighting

Inevitably, there were no particular advances in lighting or lighting equipment to be chronicled. With the increase in pictures with a war background, most of which call for an increasingly realistic photographic treatment, there has been somewhat of an increase in the trend toward greater use of arc lighting in monochrome cinematography.

As regards incandescent lighting, the

recent reduction in the number of incandescent lamp types available, necessitated by the war, appears to have had little or no effect on studio lighting units other than Photoflood and Photo-flash globes, which have been placed on a priority basis.

Lenses

Very considerable advances in optical design and materials appear to have been made during the year by American lens-makers, but these have naturally been channelled to the production of military optical instruments. They give enormous promise of great advances in photographic optics after the war, however.

Of an essentially mechanico-optical nature, the "I-R" system introduced by Dr. Alfred N. Goldsmith as a means of securing increased focal range is technically interesting, if not particularly practical for studio cinematography in its present development. Briefly, this system supplements or replaces the conventional camera shutter with one carrying supplementary lenses which correct the focus of the lens to different focal points within the field. This differential focuser or "diffo" is synchronized with the lighting in such a way that during the exposure of each frame the "diffo" successively corrects the focus of the lens to the several key planes in the field, at which time that particular plane is illuminated by a synchronized flash of light from any desired number of sources, while the lighting on the other planes of the field remains off until the "diffo" successively focuses the camera upon each of them and their synchronized illumination flashes momentarily on to make the exposure. The system appears to work on a laboratory scale, but is obviously too unwieldy to be practical for studio cinematography.

Special-Process Cinematography

In consequence of the wartime restrictions on set-building, transportation, and the like, it is inevitable that all types of special-effects cinematography are

coming to play an even more important part in production than they have heretofore. Miniatures are obviously necessary for staging many types of battle and bombing scenes, not to mention scenes of aircraft flying, landing and taking off (the latter since private flying and aerial photography are naturally forbidden in the West Coast area which is technically a Combat Zone.)

Background projection or "transparency" process work has similarly had to meet increasing demands, not only in the quantity of scenes needed, but also in physical scope. In at least one instance the recently perfected triple-head process projectors proved inadequate, and two of these super-powered units had to be used, with two screens placed side by side, giving a total background screen width of approximately 50 feet, for the Technicolor "The Forest Rangers."

For the same production, Gordon Jennings, A.S.C., developed a very important accessory in a large mobile boom or crane with which to manipulate miniature airplanes. This boom makes it possible to film action with miniature aircraft carrying out manoeuvres which would have been impossible with conventional means of control.

Another important development in special-effects cinematography was a series of experiments made by Vernon L. Walker, A.S.C., and Carroll Dunning with the use of 35mm. enlargements from 16mm. Kodachrome originals for process background plates. While this method has not as yet been used on actual production, the tests indicate that it should be satisfactory, at least for scenes with a moving-camera background, in black-and-white, and probably in color as well. This should prove extremely advantageous in securing backgrounds where the bulk and weight of conventional 35mm. camera equipment would be excessive. In addition, the greater focal depth obtainable in enlargements from 16mm. originals should be of value in many other types of background shots if the question of registration can be adequately answered.

Accessories—Professional

A very practical accessory was developed by the Warner Brothers' Camera Department in their automatic scene-slater for use with Mitchell BNC cameras. This slater is built directly into the camera, rather than fitted externally. It is placed on the right side of the camera housing, so that if the camera is held in focusing position after starting the motor, and only racked over into photographing position after reaching operating speed, the slating is automatically done while the camera is speeding up.

Another practical accessory developed by the same studio was a camera cart which serves as a mobile locker in which two complete cine-camera outfits and a still-camera outfit, with all necessary accessories, can be wheeled directly to the set.

A. J. Kookan, of the same studio's Art

Department also developed a very interesting accessory called the "Heliocator," by means of which the sun's angle for any given location, at any given date or hour, may easily be predetermined. The value of this information in plan-

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ning sets and scheduling location shooting is obvious.

Just before wartime restrictions clamped down on such developments "for duration," the Republic Studio completed a special camera-car which represents important improvements over anything of this nature previously available, as regards both steadiness of riding qualities, acceleration, and operating convenience.

The Camera Equipment Co., of New York, developed an excellent and much-needed shift-over device for use with the Bell & Howell Eyemo camera and its prismatic focuser, so often used in military, newsreel and documentary camerawork.

Accessories—Amateur

Very few, if any, new accessories for substandard cameras were developed. Two manufacturers in Minneapolis, however, developed special gunstock mounts for use with various types of 16mm. and 8mm. cameras. Intended originally for use by sportsmen, these mounts should prove of considerable value in military combat camerawork, especially in view of the extensive use being made of 16mm. cameras for this purpose.

Set Design

Set design was basically influenced by the governmental order prohibiting the use of more than \$5,000 worth of new materials in constructing the sets for any one production. The larger studios—especially those which had for some years been turning out the so-called "B" or low-budget films, had extensive resources in the form of stock or standing sets, and had for years made a practice of remodelling such sets for use in their lesser productions. The studios which had had a smaller output, or which had concentrated on "A" pictures, of course could not do this. In consequence a considerable inter-studio exchange of sets, especially specialized ones, grew up.

Some studios which had previously always used hard-walled sets made increasing use of fabric-walled flats as a means of holding down set costs. Others experimented with the construction of so-called "standardized" sets, which could be left standing and, with very little remodelling, serve repeatedly in picture after picture.

Laboratories

In the laboratory field, a sensational development was the design, by the H. W. Houston Co., of a series of almost completely automatic developing machines for field service with the Army and Navy. These machines are available in types for both 35mm. and 16mm. film, and for reversal processing as well as the conventional negative and positive types. They are designed for utmost simplicity and portability; some of them are scarcely larger than an ordinary office desk and are, with the exception of their power and water supplies, completely self-contained, even to

solution temperature control accessories and air-conditioning. What such machines will mean to the commercial operator and to expeditionary cinematography after the war can easily be imagined.

Sound—35mm.

Very little can be chronicled under this heading, though there were a number of technically interesting "undercover" developments.

Sound—16mm.

Probably the outstanding fact relating to substandard sound is the fact that during the past year an increasing number of America's more advanced cine-amateurs have turned to 16mm. sound, not only on synchronized disc, but sound-on-film. Coupled with the appearance of moderately priced sound-film cameras like the Auricon and the volume production of 16mm. sound projectors for the military services, which will naturally lead to lower prices, this points to a definite trend toward the use of sound-on-film by post-war amateurs.

In the professional 16mm. sound field, an important development was the introduction by J. A. Maurer, Inc., of their "Certified Sound" system. This is a further refinement of this firm's universally approved 16mm. professional recording equipment, redesigned on a coordinated unit basis, considerably simplified and with the addition of a volume-compressor circuit, so that operation is so simplified as to almost assure satisfactory results even in the hands of comparatively unskilled operators.

Projection

The outstanding development in this field is without doubt the enormous use of 16mm. sound-on-film by the military for both training and entertainment purposes. While little, if any 16mm. sound projection equipment is available for civilian use, it is being turned out at a vastly expanded rate for military use. Several manufacturers, including Bell & Howell, De Vry, and others, have announced "Victory" models making a minimum use of critical materials. These "ersatz" designs and constantly increasing volume are clearly pointing the way to improved and cheaper products after the war.

Still Photography

All civilian still photography has suffered from shortages of materials due to the war. Without doubt the outstanding development in this field has been the introduction of the Kodacolor process.

Visual Education

Educational motion pictures and their use have been advancing by incredible leaps and bounds, due to the increasing use of instructional films for both military and industrial training. With all of Hollywood's studios turning out military training films and civilian morale films, and with Walt Disney throwing almost the full force of his unique organization into the production of special-

ized training and propaganda films, it is certain that this year and those to follow are seeing advances in the educational film and the technique of its employment which not even the most optimistic visual education enthusiasts could have foreseen. It has been stated that the Army's use of training films alone is advancing visual education twenty-five years at a single step: when the sum total of the nation's diversified uses of factual films is considered, this statement seems conservative indeed. END.

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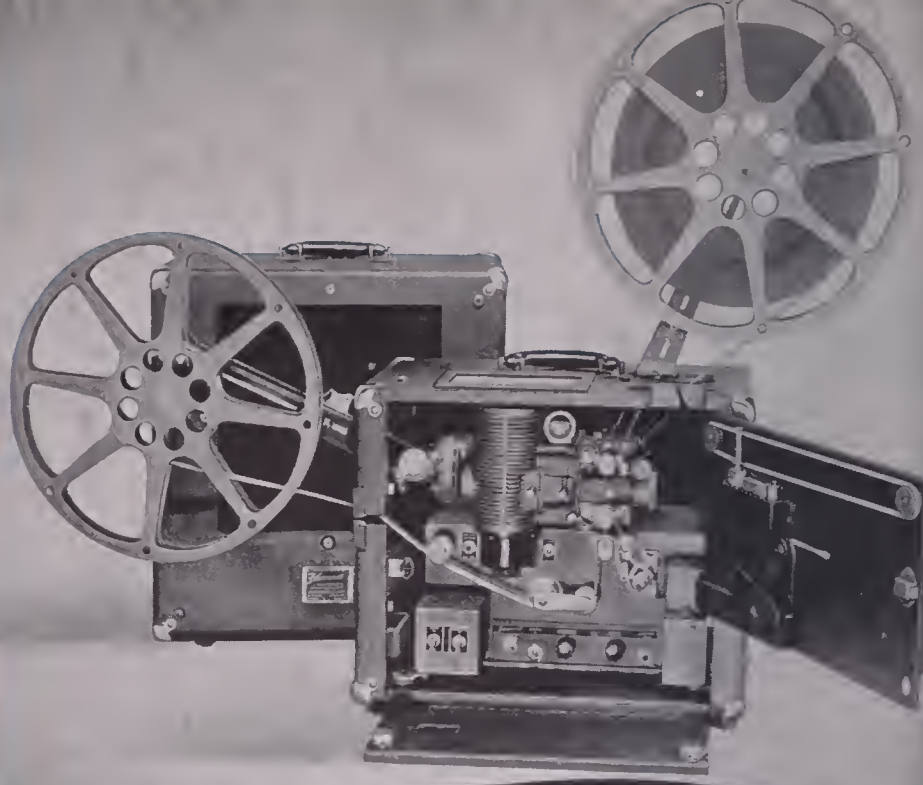
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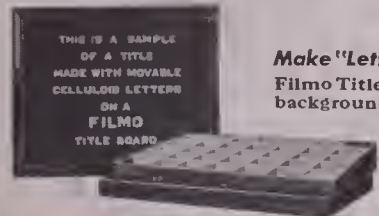
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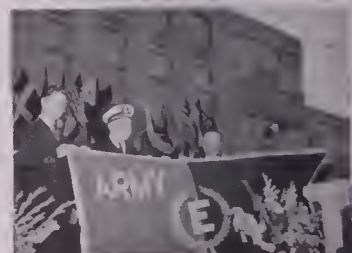


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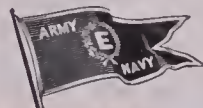
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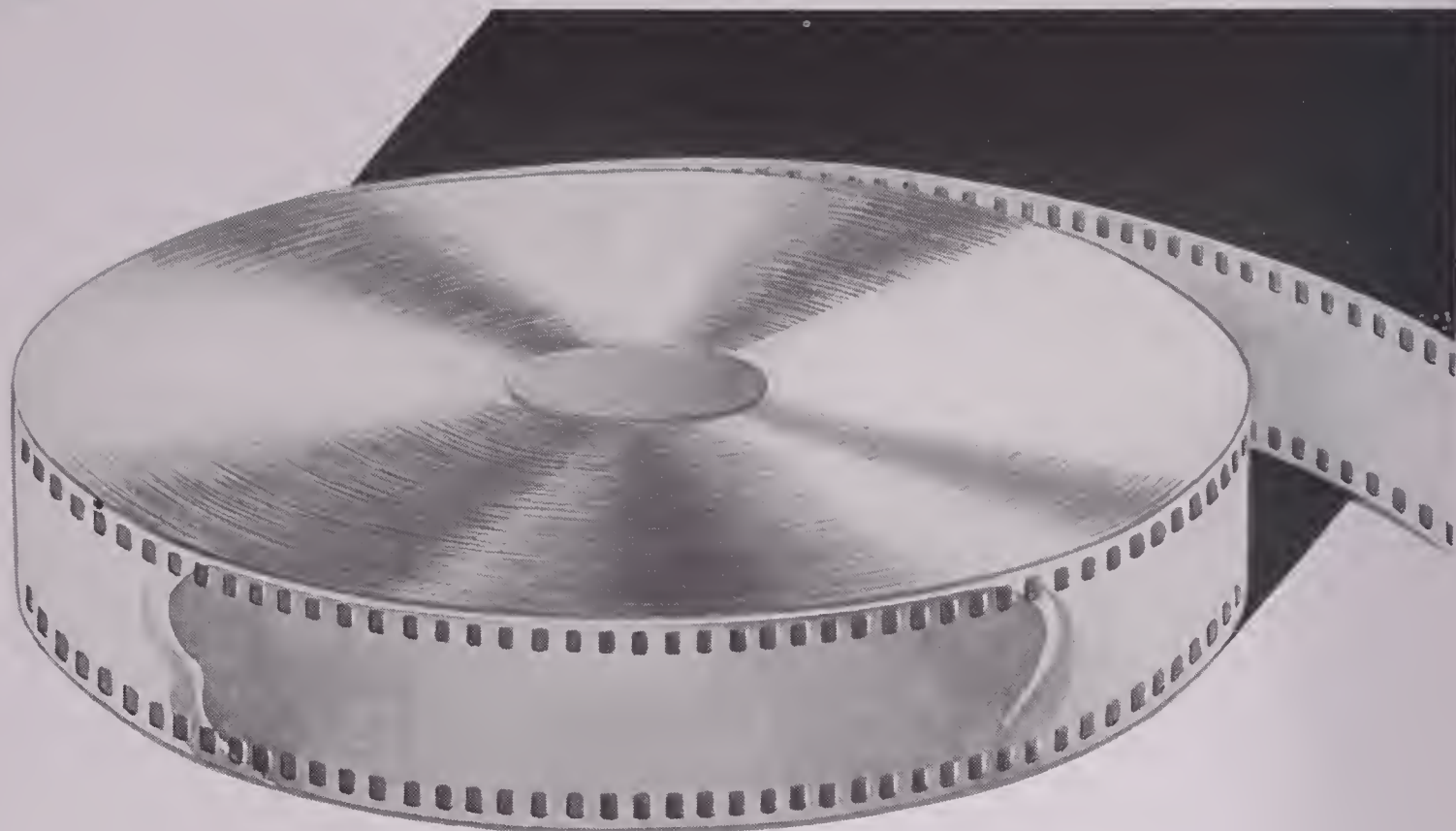
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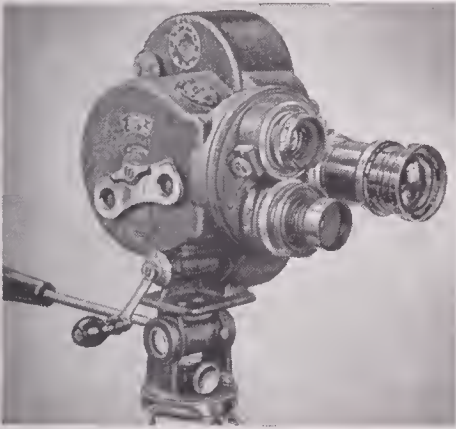
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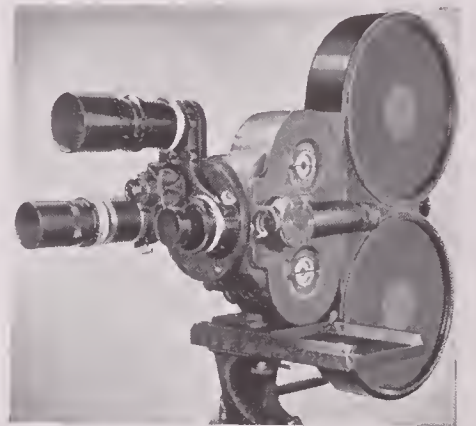
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

FEBRUARY, 1943

NO. 2

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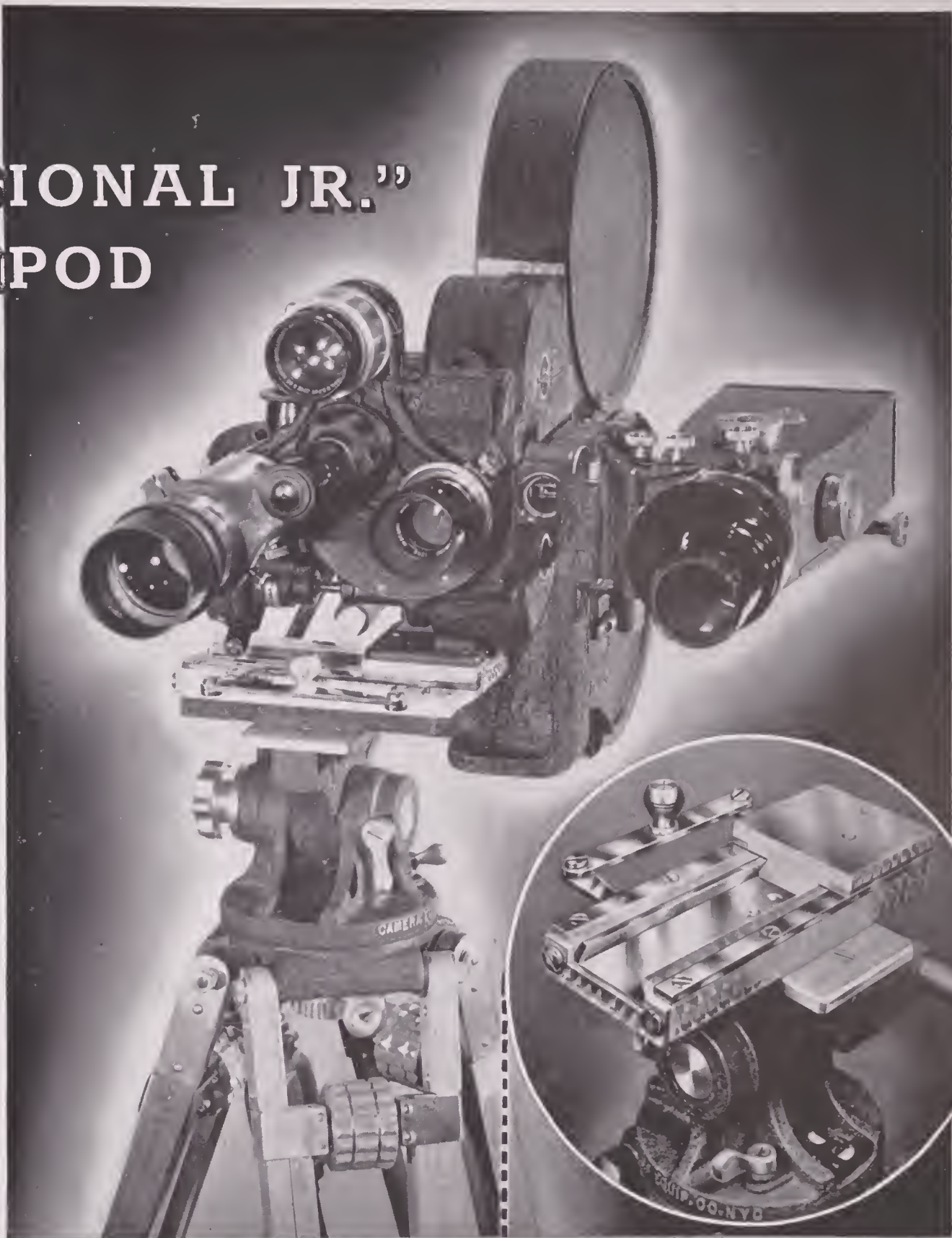


The Front Cover

This month's cover shows Lt. Leo Tover, A.S.C., filming the "Old Glory" number from Paramount's "Star-Spangled Rhythm." If you look closely, you'll find the camera about an inch below George Washington's jaw, shooting a close-up of Bing Crosby. Notice microphone used to check "sync" of Crosby's singing with playback of pre-recorded soundtrack from playback loudspeaker at left.

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Will There Be CAMERAMAN-DIRECTORS IN TELEVISION PRODUCTION?

By EDWARD ANHALT

Chief Cameraman, CBS Television Studios, New York

AS we have described them, the four basic types of television shows may be described as follows:

1. The Mobile Transmission. Excluding the temporary installation of pick-up equipment in a remote location for the transmission of a formal presentation of some kind—say a pick-up of a vaudeville show from Radio City Music Hall or a patriotic pageant from the Rose Bowl—mobile shows will be mostly pick-ups of unrehearsed events, usually in the nature of “spot” news. The telecasters involved may have some prior knowledge of the routine of a news event, such as a special message to Congress by President Roosevelt or a special event such as a report to the nation on plane construction in the form of an actual visit to a plane factory, but they could hardly rehearse them or write a shooting script for the cameras. In the case of news events such as the Normandie fire or sports coverage of football games and other athletics, the action is, of course, completely unpredictable.

The function of directorial personnel in each of these cases might be analyzed as follows:

Congress: Largely the placement of equipment in consideration of the previous knowledge of routine. Successful pick-up of the event, human-interest sidelights and the unexpected would depend largely on the cameramen as it does in the informal studio technique or in motion picture newsreel coverage.

Plane Factory: Directorial activity would involve the creation of an effective continuity of subject treatment carefully outlined in consideration of the spatial and human factors and technical limitations present in the factory. In a fully developed television industry it is probable that the construction of the continuity would be a specialist's job and the director would function almost entirely as visualizer.

The difference between the director and the cameraman in this case would lie in the fact that the director must try to create a previously visualized shot by moving objects and personnel around and creating *situations*, whereas the cameraman can only seize material that is ready-made for him and can have very little control over the action in front of the camera. Essentially, this difference defines the first special quality which the television directors of mobile programmes

must have, which is not necessarily present in the cameraman or chief cameraman. He must try to control the action before the camera by actually selecting in the creative, non-technical sense, the elements of the show.

Television's quality of instantaneous transmission demands a speedy, almost infallible sense of the dramatic element in its directors. The quickness in capturing the moment, in giving it the proper degree of emphasis, the ability to catch a fleeting, almost abstract overtone through the calm manipulation of mundanities like props, electronic video controls and spotlights—this ability needed by the director—is not necessarily the property of the cameraman. True, good cameramen in all branches of visualization soon become bored with the mere control of material made available to them and begin to want to control or *direct* it themselves. But in the television art—as in all photographic visualizations—the technique of visualization is a process secondary to the technique of placing the right combination of objects before the cameras—that is, the directorial technique.

It is inevitably more difficult for the television cameraman with no directorial ability to acquire such ability than it is for the director to learn enough of the cameraman's business to function efficiently. It is possible that in the types of television shows where the action is largely predictable and rehearsable, there may be two kinds of directors—a director of the material in front of the cameras and a director of the cameras themselves—but in mobile operations things happen too quickly for dual control. There will have to be one director for cameras and, insofar as direction can be applied to it, the same director for action. That is a categorical statement but five minutes of watching a mobile television crew in action will, I think, convince the reader.

Spot News Coverage: Events of this type are so unpredictable that quickness of perception and the mechanical aptitude to adjust the camera to such perceptions rapidly are the most important factors in the pick-up. In this type of coverage, theoretically, since so little control of action is possible, it would be better that the director be more cameraman than director but, in practice, I do not think the cameraman will get any more consideration on that score.

I think we can conclude then that, at least for news, special events, and sports operations (remember an anticipated fifty per cent of all television transmission) that; *a*) the chief cameraman and director will be combined in one person, the director; and *b*) it will be easier for a director who is an untrained cameraman to master the cameraman's art than for a cameraman who is an untrained director to master the director's art.

Thus, for the fifty per cent of all operations, since the direction will be a one-man job, the cameraman will have little choice to be other than an operative unless he can qualify as a full director. In the fifty per cent of operations where action is rehearsed or predictable, I think there may be two, or even three, persons in control.

2. Studio Operations:

Other than the special events shows which may occur in the studio, studio shows can be divided into the pattern and the non-pattern type. Quiz, Discussion, Educational and Audience-participation shows will, I think, be pattern shows. That is, as I have indicated, an economic necessity for the television industry, just as it is for radio.

The more patterned, the more repetitious the routine, the more money can be spent from week to week on the really important thing—novelty of material. If that material is good enough, the spine to which it is attached—Portland Allen's weekly entrance, “Hello, Mister Aalen”; Rochester's weekly phone call to Benny; the interminable repetition of the plot pattern of all strip shows—is actually a familiar, pleasant cue for the enjoyment of that material. The pattern technique saves money and actually increases audience-appeal.

The motion picture variant of this is the use of actors, picture after picture, in the same general plot situations, like the “Hardy Family” and other “series” films. It works because the audience feels generally that the mere appearance of the familiar situation is a guarantee of good entertainment about to follow. The only difference between radio and motion pictures is that in radio the pattern recurs every week and in films it appears only thrice or so yearly, as the actor's new picture is released. That is why many people have the illusion that the motion picture industry operates on a higher level than radio. But back to television!

Both the pattern show and the smaller percentage of non-pattern shows require production, preparation, rehearsal. The pattern shows will be the morning and afternoon strip programs, variety shows, documentaries and entertainment of all kinds. Non-pattern shows will be the evening dramatic shows that are not serials.

The action, continuity, dialogue of all these shows is completely predictable and controllable—they can be directed just as the film or play can be directed. Beyond that, and most significant, given a basic familiarity with the technical

limitations and possibilities of the medium, they can be directed outside the television studio, without cameras and lights on a rehearsal stage.

At the British Broadcasting Company's studio at Alexandra Palace, the British telecasters were particularly successful in this respect. Studio space, television pick-up facilities, and technical labor, here as at the BBC, are the major production expenses. Obviously if rehearsals, other than dress rehearsals, can be carried on without the use of these facilities, production costs will be considerably less.

At CBS, we were anxious to integrate the economics of the British experiments into our own production set-up. Gilbert Seldes, the guiding spirit of the CBS experiment, produced an entire series of living art shows with the Metropolitan Museum in this manner. Later, I tried it myself in producing the Signal Corps Training Film Unit show previously described. This, as I have indicated, was a special-event show treated as a documentary with all the actions made as predictable as possible and the production made as effective as possible in a two-hour rehearsal period. I directed the rehearsal from the studio floor without the use of lighting, cameras, electronic controls and other television devices.

During the entire time the rehearsal was conducted exactly as it would have been in a bare rehearsal hall with no technical facilities whatsoever. Facilities were then hit and a written outline of the entire action given to the cameramen and other technicians. At dress rehearsal, the chief electrician, sound man, video control operator and director reported that there were only three minor bits of action outside the technical limitations of the studio.

As a result of this and subsequent experiments, I have come to the conclusion that for predictable material the direction of action and the direction of the television pick-up instruments, cameras, lights, sound and electronic controls can be the work of two men. I do not know whether it actually will be, but I am inclined to think so on the basis of the general fact that specialization and division of labor increase as an industry grows and becomes more complex.

There is a subsidiary reason in that a control room director is simply too busy controlling the television mechanism to ever get the all-over effect of his show as the audience sees and hears it. A director wants to see his show in this way and unless it were recorded on film he would have no way of doing so other than watching it. That is why I watched the Signal Corps show in an audition room, making changes by phoning instructions to the control room while the show was being transmitted.

In this case, both the control room, or technical director, and myself were thoroughly familiar with the advantages and limitations of our level of operations at that date. The significance of the experiment lies, therefore, not in the fact that I was familiar enough with the

medium's technicalities to prepare a show without physical recourse to them, but largely in the fact that the technical director, working individually, developed a shooting and lighting treatment almost exactly similar to the one I had visualized when planning the action.

This may seem strange to the film technician who may pick one of six or seven ways of shooting a scene. It is not peculiar in a television studio working under infinitely greater limitations of time and money, under technical conditions which forbid any great reliance on technique to make transmitted material tolerable.

Generally, our television experience has indicated that people wise to the ways of the medium will pick the same way of shooting the same prepared material. Naturally, had I not approved of the camera and lighting treatment, I could have changed them in the dress rehearsal. As it was, after agreeing on the method of execution, I left, confident that I would see the direction we had agreed upon executed just as I would have done them myself.

The reader may take his choice in predicting which method of direction may prevail. Under the one-man system, the director must combine the functions usually associated with the Director of Cinematography in film with those of a dramatic director. He must be familiar with electronic and audio controls as well as cameras and lights to an extent which will allow him to make the final judgments on their use. Further, until he is thoroughly experienced, he must have the strong nervous disposition that allows a person to direct shows on the air—that is, simultaneously control studio and electronic lighting and camera movements, direct prop and personnel action and check audio control.

Personally, I feel that the inevitable development of division of labor in the new industry will favor the two-man system for at least the fifty per cent of television operations involving predictable action. Further, the maintenance of an economically feasible television programme service will involve a pattern and routine which, in the interests of efficiency, will probably favor this sort of cooperative specialization.

In conclusion, if the cameraman wishes to proceed beyond the operative stage, he may (if my analysis is correct) play a more important role as the visualizer and executor of programmes of the predictable type. If he wishes to play an important role in television of the mobile, unpredictable type, he must necessarily graduate to the status of director, since the rapidity of action in unpredictable television necessitates one man to be in absolute control. If I am incorrect in my prediction of the two-man system for predictable television, then he will also have to assume the status of director for that.

In any case, regardless of the real importance of the job of the operative cameraman as outlined in the beginning of this paper, I do not believe it will achieve



Top, televising a 40-minute "jam session." The cameraman never knew who was going to play, where, or what. A maximum test of the ability of the television camera-operator. Middle: "On the air" with a Red Cross instructional program for Civil Defense workers. Bottom: Jack Dempsey referees an inter-service fight, specially staged in the CBS studio.

any superior economic status. Moreover, I think that the more the industry grows and the greater the development of specialization, the more the job of the operative will turn out to be a dead end. It is for this reason that the CBS cameramen have used every opportunity to direct and produce in the experimental television set-up.

The old-fashioned college bull-session pales before the sort of discussion that radio and film people can have on the probable relationship of their respective arts. These statements are typical:

"Most television programs will be canned on film. That is the only way to make them smooth."

"Television networks will be yoked together by wire (coaxial cable)"

"Television networks will be linked together by automatic booster transmitters."

"The television audience will pay for programmes as subscribers—as the BBC audience pays for its radio programmes."

"There will be no sponsors."

"Sponsors will pay five or six times as much for television as for radio."

"Television will not injure the film industry because there is nothing like

(Continued on Page 78)



Kodachroming the "P-38" in Action

By ELMER G. DYER, A.S.C.

AFTER an aerial movie-making career of more than twenty years, during which I'd flown in everything from creaky old "Jennies" to the latest dive-bombers, and exposed all the various types of film from the color-blind Ortho of 1920 to today's Super-Panchromatic and Infra-Red, not to mention Multicolor, three-film Technicolor and Monopack, I thought I had done just about everything possible in professional aerial camerawork.

Then, just a few weeks ago, I got a call to handle the aerial camerawork on a training-film being made by Shirley Burden of Tradefilms, Inc., for Lockheed, to show Army Air Force pilots how to fly the P-38 "Lightning." That was a new experience for me: not only was it my introduction to the sort of work the so-called commercial or industrial motion picture companies do, but it was my first experience with the professional use of 16mm. Kodachrome. There followed a succession of surprises and problems which made it one of the most interesting assignments I've ever had.

The first surprise came when I found out who were to be my associates on the picture. I'd always thought that 16mm. industrial movies were made on pretty much of a shoestring basis—just some guy nobody ever heard of, and who would probably be overpaid if he got ten dollars a week, going off with an amateur camera and snapshotting whatever he could in an amateur fashion.

But not on this picture! The Director

of Photography in charge of the "production" camerawork on the ground was Robert C. Bruce, A.S.C., with Alan Stensvold, S.S.C., his associate as Kodachrome specialist, and backed up by a full professional crew. I had charge of the aerial camerawork, and with me was my regular assistant, Ray Flinsky.

When I mentioned my surprise at seeing a studio-trained crew like this lavished on a 16mm. training film, Producer Burden replied, "The phrase, 'training films in 16mm. Kodachrome' makes things sound simple and easy, but the truth is that training films these days present new and unusual problems that require practical solutions. Furthermore, there's usually very little time in which to reach those solutions. That's where fully trained, professional crews, with plenty of assistants, juicers, grips, and so on, pay dividends.

"It's pretty obvious that a great many people can handle a 16mm. movie or a still camera and get adequate results when conditions are normal. But in making technical films like this, the going is usually tough. There are no made-to-order conditions. There are no sets. There is only an emphasized time element, coupled with a demand for perfection on the screen. To aircraft factories and the Army Air Force the question 'When do you want it?' inevitably has a two-word answer—'Right now!' And when the chips are down and the going is tough is the time that 100 per cent professional crews who really know

their business come sailing through, where the fair-weather filmer would prove an expensive flop."

I began to realize something of the truth of this as I watched Bruce and Stensvold at work on their part of the picture. Some of their work was quite simple—about 2 per cent of it, I'd say. The rest of the time—well, here's one of the simpler shots they had to make: visualize, if you can, a P-38's cockpit, which isn't any too big anyhow, and is covered with a neatly streamlined enclosure besides.

Into that cockpit place one medium-sized pilot.

Now try to place the camera so that you can see the pilot, the control-stick, and the instrument panel. Then start setting up your lights.

Now begin making allowances for the knobs of the twin throttles in bright red, the sides of the cockpit in regulation grayish-green, and an instrument-panel half covered by a hood, with the panel itself completely black—and just about the blackest, least reflective black you ever saw. Add to this panel the component instruments with their figures in white, warning markers in red and green, and each individual instrument-dial covered with glass.

Now get your lights all set—perhaps so that with changing lighting you can suggest the interplay of sunlight and shadow as the plane turns, loops or rolls. Oh yes, remember to have your pilot's hands made up so they won't "wash out" completely.



Above: Elmer Dyer, A.S.C., and Assistant Ray Flinsky at work in the air. Note Akeley matched-lens finder fitted to 16mm. Cine-Special. Right: Producer Shirley Burden (on ladder) tears his hair as Directors of Photography Robert Bruce, A.S.C. and Alan Stensvold, S.S.C., tussle with a technical problem. To right, top: Dyer and Flinsky at work in the "Lodestar." Middle: a discussion of exposure at 10,000 feet. Bottom: Producer Burden gives last-minute instructions to Pilot Milo Burcham.

Ready to roll—?

Say—wait a minute! You'll have to start up the engines and rev up the propellers so that the engine instruments will register properly. Naturally this makes quite a bit of vibration, and a gale of wind from the two propellers. Now just where were those lights you placed? And the camera?

O.K. Let's say everything is still set. All that has to be done now is to shoot the scene and move on to fulfill the required schedule of thirty-eight such set-ups per day. And remember—this was one of the easier ones. . . . ! Do you see now why my hat is off to Bob Bruce and Al Stensvold and their crew?

My own part of the job was easier. The first problem, after being duly "mugged," fingerprinted, and issued a regular Lockheed identification badge, was to get acquainted with Kodachrome film and the 16mm. equipment I was to use. Of course I've shot a lot of 16mm. and Kodachrome for myself, but there's a world of difference between shooting Kodachrome for pleasure and shooting it—especially in the air—for professional use.

The basic problem was exposure. Of course in shooting Kodachrome it's axiomatic that your exposure has *got* to be correct; but "correct exposure" when you're shooting for duping (as is always the case professionally) is very different from "correct exposure" when you're shooting just to get a good original for home projection. Shooting for an original, giving the equivalent of a Weston 8 film speed means "correct" exposure.

But when you shoot for duping, you'll get the best results if your original is on the soft side, both as to color and contrast. So you'll want to give it what would amount to a slight overexposure if you're used to shooting only for an original. The easiest way to do this is to use the equivalent of Weston 5 in-

stead of Weston 8 in your exposure-metering.

Then there's the matter of "following focus" on your exposure as the plane you're shooting goes through its combat manoeuvres. Getting the correct exposure on the plane itself is 'easy enough; but when you pan down to follow it, and get the darker ground in your shot, you'll run into underexposure. Panning up as the P-38 zooms upward gives you plenty of sky for a background—and every inch of it overexposed.

With a 35mm. outfit, this business of "following focus" on exposure isn't too much of a trick if you've a practiced assistant. But in 16mm. it's a good deal more of a problem, due to the way the lens-mounts are made. I'd say it was impossible if you were working alone; but with a really good assistant like Ray Flinsky, it can be done satisfactorily—if the producer gives you a little time for tests and practice, as Burden did.

Equipment was quite a problem, too. On the ground, Bruce and Stensvold generally used the Bell & Howell professional 16mm. camera which was described in *THE AMERICAN CINEMATOGRAPHER* about two years ago. For our air shots it was decided to use a Cine-Special, due to the advantages of its compactness and quickly interchangeable magazines.

The Special is a honey of a camera all right, but to the 35mm.-trained professional it has several disadvantages. The first of these is an inadequate finder. Personally, I'm used to either a Mitchell-type finder or the matched-lens arrangement of the Akeley for aerial work, and the Special's regular finder, while all right for ground work, simply didn't suit me for the tricky problem of following one of the world's fastest pursuit planes going through the manoeuvres of aerial combat.

Finally we managed to adapt an Ake-

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Why I Want To Make Movies

By LEONARD J. SHAFITZ

DURING these times there are probably thousands of young artists, craftsmen and technicians throughout the country—and for that matter the entire world—who have delayed their plans and put off their course of study until the conclusion of the war. And it is right, for only in a free world can individual creative efforts flourish and have the right to grow. As Sergei Eisenstein has said in his book, "The Film Sense," "War usually implies the subordination of all work in the field of art, especially art theory, and all research work outside the limits of war needs. Fully revealed and fully sounded, the definitive rise of an art of the cinema and a cinematographic method begins with the conclusion of the nightmare through which man now passes."

So it is with the many young photographers who are now in the service of the country or who, like myself, are about to enter it, and who in the future hope to embrace this medium which has become the popular art-form.

I don't think that in either our pre-war dreams or our present ambitions for finding ourselves places in the industry after the war, many of us have been

We've often discussed with college students interested in cinematography and, more recently, with young men trained as combat cinematographers for the Armed Forces, the reasons behind their interest and aspirations in professional cinematography. The author of this article, a recent graduate of a midwest college, now waiting a call to Officers' Training for the Air Force Photo Section has, we believe, summarized the viewpoint of these young men more clearly than we have yet heard it expressed. As such, both the article and the ideas it expresses merit careful consideration from everyone within the professional industry.—THE EDITOR.

particularly attracted either by the so-called glamor of the cinema, or by the comparatively high earnings the industry offers those who are successful. The simple fact is that we *like* cinematography enough to make it our life work. And some of us, at least, have sufficient faith in motion picture's power to influence the lives and thinking of people to want to do our bit to help make it a more powerful influence for good in the world.

The full maturity which the motion picture has reached within the last ten years has made it one of the greatest dramatic and informative mediums that have come out of our technological development. Aside from the field of entertainment, the motion picture has proved to be not only an instrument of international concept, but one that will prove to be of immense value in the post-war world to tie the nations together instead of making boundary lines that breed suspicion and distrust.

The craftsmen and technicians who are working for the conclusion of the present world-wide nightmare will then start anew the task of absorbing the concept of this medium so that it will prove to be man's unifying effort in the world-to-be. They have faith not only in the technical heights of the film but in man's ability to use this potent force for the general benefit of all who come under its influence.

Ever since I took my first picture with an old 4x5 still camera not so many years ago, I seemed to sense the possibilities that were inherent in the photographic realm. But anyone who has produced a good still picture with a message must realize how much more important the motion picture is, and how much more moving and dynamic is the story that can virtually live for us.

Unique as this triumph is for the engineering and scientific principles involved, it should be and is more—it is what all good scientific endeavor must be, the realization that technique is the servant of the artist and that only by his full understanding and talent can a technical invention reach its fullest heights, especially in the field of a universal appeal like the motion picture.

I've wanted to make movies, probably ever since I was just getting started in

high school. Then, perhaps, it was the fascinating technique that interested me, but now, in addition to a highly technical and skilled technique, the realization is there that I can contribute in some humble way to a living, moving and forceful medium that is now more necessary for the good will of all men than at any other time in the history of the world.

As in all art-forms, there are always many subdivisions of the one all-over conception. The same is true for the film, where the documentary episode, the cartoon, the commercial reel, the newsreel, and of course, the entertainment film are established forms.

All have their own particular problems and techniques which have been worked out by the cinematographers who have specialized in these particular film branches. They are all artists of their own particular interest. The film can boast about these specialists who have concentrated upon outstanding creative effort—no matter if it be the Disney cartoon or the fact-finding evidence of an Ivens documentary.

The dramatic film represents a unique conception in the realm of screen art. Without the full cooperation, understanding, and ability of every worker involved, be it cinematographer, director, or producer there is no truly great film. But when this happens, and the screen unfolds a story that has had the understanding touch of the director, the ability of the set designer, the dramatic impetus of the writer and the experience and skill of the cinematographer—then the screen will rock with the dramatic impact.

That is why I want to make movies. To be around the camera through which all these human efforts must pass, and through which lies a valuable and almost endless art-form which the future will develop and expand into the post-war world's universal "good will ambassador."

That is why, once I've done my share for Victory with one of the Army's photographic units I—and I suppose many others like me—will be beating a path to Hollywood, there to knock at the gates of the cinema until we find the place where we'll be most useful making movies for the uncharted new world of the future! END.



Above: Trains, road traffic and especially ambulances are favorite targets of Nazi aviators. Below: One Heinkel that won't strafe and more ambulances.

From A Nazi Prison Camp To A Signal Corps Camera

By CHARLES SWEENEY

TWO and a half years ago I was a prisoner in a Nazi prison camp in France. Today I'm in Hollywood, waiting a call to active service as a cameraman in the Signal Corps of the U. S. Army. And I hope I draw an assignment to active combat camerawork in the field, for I've a score to settle with those Nazis for some of the things I experienced myself, and for many more I saw them do before and after the fall of France.

My story really begins several years before the war. I am an American, but I was born and brought up in Paris. My father had flown with the Lafayette Escadrille in World War I, and remained in France after the war.

My first active contact with professional cinematography came about a dozen years ago, when through some friends I got a job in the camera department of the French Paramount studio at Joinville. In time, as I learned more about the work, I found myself placed in charge of the department—which wasn't as much of a job as it sounds like on this side of the Atlantic, for even the biggest French studios are smaller than the smallest of Hollywood's "independent" studios.

In time, as Paramount's French production slackened, the Paris office of Paramount News began to press me into service now and then as a newsreel cameraman, "covering" news events when their regular crews were busy elsewhere.

Finally, Paramount's French studio activities stopped altogether. So did my job. At that time, French production everywhere had reached a very low ebb, and as I like to eat, I decided I'd better seek elsewhere for a job. I knew they were making pictures in Berlin, (this was before Hitler's rise) and finally

decided to go there and see what sort of a job I could find.

I found it—but not in studio production. As soon as the UFA officials learned I'd been shooting in Paris for Paramount News, they handed me an Eyemo and said, "OK, you're hired. We need newsreel cameramen for the 'UFA Wochenschau'—so go out and get busy."

I did. Of course, as the newest and greenest cameraman on the newsreel, I usually drew the least important, routine assignments—the sort of thing that had to be "covered," but could be handled by almost anyone. But even on routine assignments like that, luck has a way of creeping in and helping a fellow sometimes.

It did with me. One day I was assigned to cover an attempt at the World's auto speed record which was to be made by one of Germany's leading race-drivers. It was partly a bona-fide sporting event, and partly a gesture to publicize Germany's recently-completed super-highway, the "Autobahn." And I happened to be the only cameraman available for the job.

It started out in very routine fashion. The driver made several runs over the course, each time just missing the 300 mph. record he was aiming at. I covered these runs in routine fashion, and was ready to pack up and go when he said to me, "Stick around a bit. Maybe I'll try one more run."

Well, I had my story, but there was one angle I thought I'd like to have to complete it. A few miles along the super-highway was an intersection where a secondary road crossed the "Autobahn" on an overpass bridge. I thought a shot from this overpass, as the racer came streaking down the long, straight highway directly toward the camera, would add a novel angle the editors would

appreciate. I didn't realize—then—just how much they'd appreciate it!

Soon after I got my camera well set up on the bridge, I heard the whine of the racer coming toward me. As the car came in sight, I pressed the button and started the camera.

Right there, luck stepped into my picture in a big way. It was good luck for me, but bad luck for the driver. Just as the car got nicely into the picture, a tire blew out. At three hundred miles an hour a blow-out is more than a mere minor accident: for the next few seconds the air was full of pieces of the car scattering themselves over several hundred meters of landscape. When it was all over, there was very little left of either the car or its unfortunate driver. And I had the whole thing on film—!

It was luck, pure and simple, but the newsreel editors didn't think so. They said a lot of very nice things about my skill and news-sense . . . and I became one of the bigger shots of the newsreel staff from then on.

I stayed with this job all through the years while the Nazi government was building its power. I was one of the official cameramen assigned to film the entry of Hitler and his Nazi troops into Austria. In this assignment, I even had the dubious pleasure of meeting and photographing the Nazi Fuehrer.

Contrary to the prevailing impression, he is—or was at that time—a very pleasant person to meet. He can be friendly and agreeable, and my impression of him was that he was a man of more than ordinary force and brilliance. Frankly, I think it's a very unfortunate coincidence for us that his appearance

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Aces of the Camera

XXV:

Phil Tannura, A.S.C.

By WALTER BLANCHARD

PHIL TANNURA, A.S.C., literally grew up with the motion picture industry. Though only in his middle forties, he can look back upon a career of thirty-five years in the industry, during which he has had a broader and more varied experience with virtually every phase of production that has

fallen to the lot of almost any other member of the camera profession.

"Little Phil's" movie career began with the old Thomas Edison Studio back in 1908—but not as a cameraman. True, they were hiring cameramen young in those days . . . but not undersized eleven-year-olds in short pants. "Little

Phil" began his career on the *other* side of the cameras, as a child actor.

In those days, a "feature production" was usually a split-reel, about 500 feet in length. Young Tannura starred in scores of these films, and he still remembers vividly the excitement that rippled through the industry when some ambitious producer decided to make pictures a whole thousand feet long!

But after four or five years of juvenile stardom, the "awkward age" overtook Phil, as it has many another adolescent luminary since. He retired from the screen to devote himself to the more serious business of growing up and going to high school.

A readjustment like that isn't easy, thought, and before long young Tannura found himself itching to get back to work. He stuck it out for two or three years, but finally it was too much for him, and back he went into harness. But only briefly to acting: young as he was, he decided that a career in the technical end of the industry would be not only much more interesting to him, but more lasting.

So he asked for a job anywhere in the photographic department of the Edison Company.

He found it as an assistant in the still photographic darkroom. There he learned to mix chemicals, to develop negatives, and to make prints. And finally he was sent out to work as one of the industry's earliest still photographers.

"But that," he'll tell you, "didn't mean what it does today, when there is a still man attached to each production unit. In those days, there was just one still man—for the whole studio! If there were only one or two companies working, the still man was in luck. But if there were four, or five or six companies working, he still had to shoot the stills for all of them.

"In those early days, however, that wasn't as impossible a task as it sounds today. Making silent pictures, as many as half-a-dozen companies would use the same stage simultaneously. Here there might be a troupe making a 'society drama'; next to it—perhaps only five or ten feet away—would be one making a 'Western'; and a few feet farther on might be one making a slapstick comedy, while a 'cops-and-robbers' melodrama might be shooting (very literally!) over in another corner. The still man simply circulated from one troupe to the other, shooting his stills impartially as he saw fit and the opportunity presented itself."

Still work was an improvement on acting, he decided, but it still wasn't quite what he wanted. As he watched the studio's cinematographers (cameramen, they were called then) he decided that there, at last, was the sort of work he wanted to do. So he went to the studio's technical heads and asked for a job that would lead more directly to cine camerawork.

That, in those days, meant serving an

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THROUGH the EDITOR'S FINDER

THE recent announcement that this year the Academy Award for the year's best achievement in special-effects technique will be recognized with a Class I Award—the familiar "Oscar" statuette—instead of the Class II plaque hitherto awarded is a step in the right direction. For many years special-effects technicians have been playing an increasingly vital role in production, and it is about time they received full recognition.

This year especially, when special-effects camerawork, either in the form of miniatures, matte shots, or process background scenes, is literally making possible the production of pictures which could not otherwise be filmed in the face of arbitrary ceilings on set construction, transportation difficulties, and the many other restrictions of movie-making in wartime, the industry should bestow its highest awards upon the men who have most greatly achieved in this specialized field.

But while this present move is a welcome step in the right direction, it does not in our opinion go far enough, for, as in the past, this year's special-effects award is to be made jointly for special-effects in picture and in sound. To our mind, these two should be divorced, and two separate awards made.

Too often—especially under today's circumstances—a really noteworthy achievement in picture special-effects may be coupled with a recording job which involved nothing particularly out of the ordinary. By the same token, really brilliant achievements in the special-effects use of sound may be, and probably have been yoked to photographic work which represented little, if anything, beyond routine, run-of-the-mill production camerawork. Under such conditions the award may very well go to an achievement which in picture or sound or both represents really less than the year's best achievement in one or the other of these fields. The Academy Awards are—or should be—too big for any compromise, "face-saving" hand-outs given for anything less than clear-cut superior achievement.

In addition, it has never seemed fair to us that the sound men should participate in the nominating and voting upon an award which is so essentially cinematographic as that for special-effects photography. Neither is it fair to the sound engineers that cinematographers or art directors, most of whom are certainly not trained recording engineers or anything like it, should be perhaps a dominant factor in singling out the best achievement in the special-effects use of sound.

We're glad, we admit, that special-effects has been raised to full "Oscar" status—but why not split it into two "Oscars," and give both sound and picture their full due—?

A FEW days ago one of the industry's most distinguished cinematographers—a recent Academy Award winner and the recipient of innumerable other honors for his achievements in photographing many of the finest films made during the last twenty years—dropped into the office for a chat. After a polite dalliance with such preliminaries as the weather, the latest war news, and similar topics, the conversation naturally turned to cinematography, and to this magazine's reviews in particular.

"I like your reviews," he said, "but I wish you would more frequently review 'B' pictures. That may sound strange to you, coming from a man who seldom does anything but really big 'A' productions. But honestly, I think the men who do a good job on the industry's little pictures usually deserve more credit than the 'big shots' who concentrate on more pretentious big pictures.

"On an 'A' production, the man at the camera has the best of everything laid out for him, virtually on a silver platter. He works with the studio's best players and finest directors, not to mention the best of stories. He has the finest possible sets, and often the collaboration of a skilled production designer. He has all the physical facilities he needs, and an abundance of time. If he finds it necessary to rehearse half a day on some intricate camera-movement, or to delay two or three hours while a certain type of lamp is obtained and rigged—what does it matter in a schedule of two, three or more months, so long as the result on the screen is perfect?

"But the man on the 'B' picture works with left-overs. His sets are remodeled from standing sets left over from many another film. His players are usually inexperienced youngsters on the way up, or oldsters on the way down. The stories—well, the less said about them, the better. His director may be a rank newcomer whom he must coach in picture-making, and often 'carry.' He is begrudged every minute that isn't spent on actual shooting, for his picture may have a schedule ranging from seven days to perhaps as much as three or four weeks, and a budget that wouldn't support a week's work on the more leisurely 'A.'

"Anything the 'B' picture man puts on the screen, he must do absolutely by himself, and in the face of tremendous obstacles . . . often downright opposition. If he does a good job under such circumstances, it's more of an achievement than many an Academy Award job on a big-budget 'A.' Honestly, I've often thought that if I were lucky enough to win another 'Oscar,' I'd like to step down from the platform with it and hand it to some one of the men who do good work on the industry's

'B's,' with never a look-in at the credit they really deserve!"

We're rather proud that this opinion so closely coincides with our own. Unfortunately, we can't see or review nearly all of the industry's production. Both the space available for reviews, and the time we have available for attending previews are too limited to permit that. But for more than a dozen years it has been a guiding principle in writing our reviews that as between a man who has done an excellent job on an 'A' production and one who has done an adequate one on a 'B' picture, the man on the program film is likeliest to deserve more credit, because of the merit of the achievement he has turned out virtually single-handed, with the cards stacked against him.

IT ISN'T OFTEN that we concern ourselves with anything other than the technique of films, much less suggest that a film of fifteen or sixteen years ago be revived for general showing. But today, with all the talk about the way motion pictures can reveal a national viewpoint, and the pro-and-con discussion about the good or bad characteristics of the German people, and what they might do if the present Nazi Government were removed, we can't help wishing that someone would exhume that famous UFA silent film of 1926, "The Last Laugh." We've seen it many times, and each time we've been increasingly impressed by the lesson it taught of the average German's adoration of a uniform.

The story is simple enough—just the story of an old man and his uniform as a hotel doorman . . . how his loss of the right to wear that uniform changed him overnight from an honored citizen of his neighborhood into a pariah, and stripped from him even the incentive to live. In the American version, a synthetic 'happy ending' was provided; but in the original German production the old man committed suicide because he could no longer wear his gaudy uniform. An American would feel uncomfortable in clothes that set him so apart from his fellows; the German felt lost without them.

The makers of this film certainly had no intention of pointing out this strange quirk of their national psychology, but it is there, and powerfully presented. We wish that every American—and especially those who will make the peace to come—could see this film and absorb its lesson. And we hope, too, that in that future time when American films play their destined part in re-educating the Axis peoples to civilized ways, we may produce films which will with equal power preach the virtues and viewpoints of the Democratic way of life.

A.S.C. on Parade



We lead off with a great big salute to Captain Clyde De Vinna, A.S.C., U.S.M.C.R., shown above smiling as one of 20th-Fox's glamorizing still-men snapped him just before he took off for parts unknown for his leatherneck indoctrination and then active service as skipper of a Marine Corps photo unit.

Another salute to Leo Tover, A.S.C., now officially First Lieutenant Tover of the Army Signal Corps' big production center in Long Island.

And did you know that Associate Member Wilson Leahy, A.S.C., is now Lieutenant Leahy of the Navy's Film Processing Unit, Photo Science Laboratory? He sent a cheery note from his Eastern Station where he has an important job seeing to the processing of the Navy's training and combat films.

Lieutenant Henry Freulich, A.S.C., U.S.M.C.R., in town for a few days recently, tells us he's happier as a leatherneck than he's ever been in his life. Henry expects to be in Hollywood again soon, and promises to drop in to the A.S.C. and let us "mug" him for next month's "A.S.C. On Parade."

Thanks to Johnnie Mescall, A.S.C., for his note praising one of the Editorials in last month's "Through the Editor's Finder."

Charles Marshall, A.S.C., off to the big Navy Air Base at Pensacola with the assignment to photograph an aerial training film for the Navy.

The yearly parade of "Best Film Achievements" is on again! "Film Daily" led off with its poll of the nation's film critics, who selected the following as the five best photographic achievements of 1942: "How Green Was My Valley," photographed by Arthur Miller, A.S.C.; "The Magnificent Ambersons," photographed by Stanley Cortez, A.S.C.; "Reap the Wild Wind," photo-

graphed by Victor Milner, A.S.C., and Capt. William V. Skall, A.S.C.; and "Wake Island," photographed by Theodor Sparkuhl, A.S.C.; Lt. William C. Mellor, A.S.C., Harry Hallenberger, A.S.C., Elmer G. Dyer, A.S.C., W. Wallace Kelley, A.S.C., Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C.

And from England comes the word that the Third Dimensional Society of England has pronounced "Eagle Squadron" and "The Magnificent Ambersons," both photographed by Stanley Cortez, A.S.C., the biggest achievements in three-dimensional photography during 1942.

And Rudy Maté, A.S.C., goes to Columbia to photograph "Sahara." On this one we gather Rudy's skill at glamorizing the femmes won't be called into play . . . the picture has a cast of seven men, and the "love-interest" is represented by a 30-ton tank. However, Columbia's glamor gals will get plenty of opportunity to look lovely for Rudy's camera, as that studio has taken over his contract, which has a year or more to run, from Sir Alexander Korda.



Captain John Alton, A.S.C., sends this picture himself with his present Commander, Major General O. W. Griswold, on whose staff he is now serving as liaison officer between the Commanding General's office and the Signal Photographic Laboratories, and his former Commander, Lt.-Col. Edward J. Hardy, under whose command Alton received his basic military training. John reports that he is attending General Griswold's staff school, and was recently called upon to lecture to one of these classes on "Motion Pictures—the New Weapon." He's enthusiastic about the way the Hollywood men in his outfit have taken to soldiering. "You should see some of our former executives, editors, directors of photography, sound engineers, and so on, command a battalion," he says, "and march on a hike with full pack, tin hats, gas-masks, etc. It would make West Pointers envious!"



Reunion in the Pacific—Pathe News War Correspondent Len. H. Roos, F.R.P.S., (left) and Lieutenant Philip M. Chancellor, A.S.C., F.R.G.S., A.R.P.S., U.S.N.R., meet "somewhere in the Pacific Area." They hadn't seen each other for over eight years.

While we're on Naval matters, Lt. Gregg Toland, A.S.C., U.S.N.R., recently took time off from the picture he's producing, writing, directing and photographing for the Navy to have his tonsils yanked. Gregg must be a smart producer, for he scheduled the carving for a Saturday, so he could be back on deck the following Monday, without having to "shoot around" himself!

James Wong Howe, A.S.C., draws the prize plum of directing the photography of Samuel Goldwyn's forthcoming big special about Russia, "North Star," with a cast any producer might envy.

Harry Perry, A.S.C., gets a nice break at Universal. After spending three months shooting backgrounds and atmospheric scenes with Atlantic convoys for "Corvettes In Action," he has been selected to direct the photography of the production scenes in the studio. Good work, Harry!

Hal Mohr, A.S.C., just signed a new term contract at Universal. His first assignment is to direct the photography of "Phantom of the Opera," in Technicolor.

Charles Schoenbaum, A.S.C., phones in to tell us he's just finished a four-months' assignment Technicoloring MGM's biggie, "Salute to the Marines." He handled this big Technicolor assignment solo and, so we hear, has done a swell job. We'll be waiting for the preview, Charlie!

Henry Sharp, A.S.C., says that while the typical "Hollywood wolf" used to prefer a girl who'd meet him half way, now that gas rationing has gone into effect he knows one who insists on a girl who'll meet him half way—and has a "C" card to do it with!

Nick Musuraca, A.S.C., is doubling in brass at RKO, directing the photography of "Fallen Sparrow," and also serving as Italian language consultant.

PHOTOGRAPHY OF THE MONTH

CHINA GIRL

20th Century-Fox Production.

Director of Photography: Lee Garmes, A.S.C.

One expects interesting camerawork from Lee Garmes, A.S.C., and in this pleasant little melodrama he delivers it. "China Girl" is by no means Garmes' best work, but his contribution is unquestionably the most distinguished part of the production. His mood and effect-lightings, together with his characteristically pictorial compositions, lift the picture decidedly above what it would be otherwise.

To this writer's opinion, Garmes was probably at his best in the extremely effective opening sequence. This is dramatic cinematography at its best, and gets the picture off to an unusually good start. But throughout the picture, Garmes' camera does a great deal more than either actors, direction or script to establish and maintain a dramatic mood and that elusive something known as "production value."

The art direction of Richard Day and Wiard B. Ihnen is particularly interesting, and gives Garmes excellently pictorial material with which to work. It furnishes, too, an excellent indication of the inter-studio cooperation engendered by the wartime limitation on new set construction, for unless we miss our guess very badly one of the key sets—the big hotel lobby—was one built originally by MGM for "They Met In Bombay," apparently borrowed by 20th-Fox and very skillfully disguised.

Henry Hathaway's direction was below par, and seemed particularly amateurish in the unusual number of very bad cuts which furnished a constantly jarring note which ran through the entire picture.

STAR SPANGLED RHYTHM

Paramount Production.

Directors of Photography: Lt. Leo Tover, A.S.C., and Theodor Sparkuhl, A.S.C.

A big musical like this one, which is primarily a revue to showcase virtually all of Paramount's stars, isn't the sort of picture which offers its photographers the most outstanding of opportunities, but Tover and Sparkuhl have given the picture an unusually effective photographic mounting. They've done an unusually smooth job of it, too; it's almost impossible to tell where Tover's contribution leaves off and Sparkuhl's begins. The picture covers an unusual range of photographic and dramatic moods, too, ranging from extreme high-key "filmusical" and lightings to some very fine, extreme low-key effect-lighted sequences.

To our mind, the pictorial highlights were the "Black Magic" ballet number (which was, incidentally, photographed by John Seitz, A.S.C., though not credited), Rochester's zoot-suited "Smart

as a Tack" number, and the concluding "Old Glory" number. The latter, incidentally, provides the final fade-out in most effective fashion by lap-dissolving from black-and-white to color. It is unfortunate, though, that the black-and-white portion of this final shot was not, or perhaps could not have been printed five or six lights darker, to match better with the rest of the sequence.

The special-effects staffs of Gordon Jennings, A.S.C. (Special Effects) and Farciot Edouart, A.S.C. (Transparency Projection) certainly deserve high credit for their contributions to the picture, though they were not officially credited. Jennings' work in the "Black Magic" number was particularly fine, and in the jeep number—"I'm Doing It For Defense"—both he and optical printer expert Paul Lerpae, A.S.C., have contributed outstandingly and with hilarious effect. Old-timers will recognize in this sequence Fred Jackman's famous old trick of submarining a car through a lake—and it's still good for as big a laugh for Paramount today as it was for Mack Sennett twenty-five years ago.

MOON AND SIXPENCE

United Artists' Release.

Director of Photography: John F. Seitz, A.S.C.

"Moon and Sixpence" is one of the more interesting releases of the season, both dramatically and photographically. Director of Photography Seitz has a picture that is replete with pictorially interesting atmosphere, and aided by the always deft production designing of Gordon Wiles, he takes full advantage of every bit of mood and atmosphere.

The picture is interesting, too, in that it makes effective use of a three-color Cinecolor enlargement from a 16mm. Kodachrome original to provide a brief sequence in color. The central character is a painter, and all through the picture Director Al Lewin very cleverly avoids showing any of his paintings: even when he or his friends exhibit them to other characters, all that the audience sees is the back of the canvas. The paintings themselves are never shown until just before the climax of the picture—and then they are shown in color, adding immeasurably to the dramatic effectiveness of the treatment.

From the photographic viewpoint, this color sequence is very interesting. It would be an exaggeration to say that it is fully as good as a direct-35mm. color sequence, but considering its 16mm. origin, the results on the screen are surprisingly good. In the first few scenes, it struck this observer that cinematographer Seitz was lighting with a little too much contrast for the Kodachrome-Cinecolor combination, as contrast is increased and shadow-detail distorted in the enlarging process. But when the scenes were lit rather flatly, the results

proved excellent: the definition was satisfactory, and the color rendition good, though it seemed the color-saturation was rather higher than we're accustomed to in Technicolor. However, in this instance the bright coloring probably served well to heighten the dramatic result desired. The directorial technique employed in getting into and out of the brief color sequence was also interesting.

SEVEN DAYS' LEAVE

RKO Production.

Director of Photography: Robert De Grasse, A.S.C.

Bob De Grasse brings this entertaining little musical to the screen with the sure smoothness we've come to associate with his name. It's not what you'd call "a cameraman's picture," but he does a good deal more with the material at hand than might ordinarily be expected. Where there's any excuse for pictorialism, he provides it; where there aren't pictorial opportunities, he uses camera and lighting so deftly that the audience is seldom conscious of photography. And throughout, his treatment of the players is such as to present them at their very best.

I MARRIED A WITCH

United Artists' Release.

Director of Photography: Ted Tetzlaff, A.S.C.

Special Effects: Gordon Jennings, A.S.C.

This is an unusual picture in every way, and one which gives its cinematographer and special-effects technicians plenty of opportunity for spectacular achievement. A very great deal of the picture is of a nature which calls for strikingly dramatic mood lightings. Tetzlaff handles these superbly, and makes them thoroughly enjoyable to the photographically-minded.

His effect-lightings and compositions make "I Married a Witch" a picture one could enjoy seeing several times. His treatment of the players is, as always, excellent; we haven't seen Veronica Lake so well presented in some time, and what his camera has done for Frederic March deserves high praise, indeed.

Like the "Topper" pictures, with which it must inevitably be compared, "I Married a Witch" depends for much of its humor and effectiveness on the contributions of the special-effects staff. In this, Gordon Jennings, A.S.C., and his associates have distinguished themselves. Their work, like Tetzlaff's production camerawork, is spectacularly effective.

The direction of Rene Clair deserves careful study, too, especially in the smooth way his scenes flow together visually.

It is in a way unfortunate that "I Married a Witch" is one of the group of films made last year by Paramount, but

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Ray Maker and his home-built 16mm. sound camera. The light-valve sound-recording unit is in the housing below the camera-head, which will be recognized as a modernized Model A Cine-Kodak.

I Made A 16 mm. Sound-Camera

By RAYMOND L. MAKER

EVERY amateur dreams of the time when he can make his movies "in sound" like the professional films he sees in theatres. And with most of the commercially marketed sound-film cameras and projectors priced well above the average amateur's reach, even in pre-priority days, most of us have looked to sound-on-disc as the simplest and most economical solution to the problem of sound. I did.

But after completing a successful feature-length amateur sound movie using sound-on-disc, I changed my mind. In "sounding" some of the sequences, I found myself using as many as seven turntables to handle the various discs carrying the dialog, music, sound-effects, and so on. And even when these various records were dubbed together onto a single disc, synchronization was always something of a problem—especially if the film broke, or had to be re-spliced.

So I decided that it would be much easier—and a good deal better all around—if I switched to the method used by the professionals—sound-on-film. Even if it necessarily meant making my own 16mm. sound-film camera.

Little did I realize what I was letting myself in for!

My first step, of course, was trying to find out *how* to make a sound-on-film recorder. After a futile search of the larger libraries, I came to the conclu-

sion that the published material available simply wasn't suitable for 16mm. use. Although the material found was excellent, most of it dealt with 35mm., or in extremely broad generalities concerning 16mm. It just wasn't sufficiently detailed to help the fellow who wanted to make his own 16mm. sound-film camera. So I had to work things out for myself as I went along.

For the type of picture I make, and for the type of sound conversion I had in mind, I decided that the old, dependable Eastman Model A was the most suitable camera.

The first problems were to provide the proper separation—24 frames—between the sound and picture apertures, and to provide a smooth, continuous movement of the film past the sound-recording aperture. I decided that the most practical way to do this would be to run the film through a separate sound-head mounted below the camera itself.

Accordingly a light-proof box was built, 6 inches deep, 5½ inches wide and 12 inches long, with a removable plate on the left-hand side for loading. A slit was cut in the base of the camera-box to correspond with a similar slit in the top of the sound-recording box. The two units were then attached together.

A set of rollers and a flywheel constructed along lines similar to those used in the Amprosound projector were

placed in the sound box in such a position as to give the correct spacing between the picture-aperture and the sound-recording slit. Directly behind the flywheel was inserted a light shield to prevent any stray light from hitting the film.

The recording unit was built as follows. Upon a base a center-bracket was placed to hold the light-valve. This valve was made from two pieces of block steel lapped together with a horizontal slit .001 of an inch deep and .260 of an inch wide.

Directly opposite, another bracket was installed to hold the vibrating unit, which was made from a rebuilt RCA phonograph pick-up. In place of a needle, a blade .001 of an inch thick, 1/16th inch wide and ¼-inch long was fitted, and honed to a razor edge on the side which strikes the beam of light.

The top block of the light-valve was set back .002 of an inch. The blade was then adjusted in front of the slit and directly over the bottom block. Both blocks were given a razor edge and blackened so that no unwanted light would reflect at broken angles.

To form the image of this slit on the

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FREE WHEELING —

The Story of a Bicycle-Movie Vacation

By STANLEY and MARYJANE BEAN

WE had a car once. We drove often into New Hampshire, over and through the White Mountains. It was one of our favorite movie-making and hiking spots.

The above sentences are very much in the *past tense!*

Last summer we had a few days vacation available, three bicycles and the desire to go into the mountains once more.

The above desire was *intense!*

So we loaded the wheels and the camera for what turned out to be one of the best vacation trips ever.

To know us better, here's Stan, Jr., seven last August. He was pace-setter, riding his own bike with a bag of tools and spare parts and recording the speed and miles with a cyclometer.

Douglas, the younger chap, 3 years old the day after Christmas, rode on an air-cushioned seat behind Daddy (Big Stan). This seat was attached to the rear-carrier holder by a metal piece held by two thumb-screws fastened to two bolts set through the bottom of the seat itself. It was as firm as the bike itself but easily removed without a wrench.

Sitting on the cushion, Douglas had a comfortable back, arm-rests, and straps slung under Big Stan's seat which served

as stirrups for his feet. When traveling he has a safety strap around his waist. It is not possible for Douglas to fall out or off. The only chance of getting a bump would be if Big Stan took a spill which, luckily, he didn't.

Maryjane toted the real load: movie camera, film, clothing changes, bathing suits, maps and actual necessities (weight under 35 pounds). Our bikes were two-speed, carried lights, mirrors (worth their weight in gold!), and bells.

On the road we followed in this order. Big Stan first place; Stan Jr. following, and Maryjane last to keep her eye on the situation. In this order Stan Jr.'s pace is observed and ours regulated accordingly. He seemed to ride in better order when any amount of two-way traffic was encountered. All of us walked the upgrades and through cities with congested traffic.

The morning our trip began, we left our home in Amesbury, Mass., early on our bikes for a ten-mile jaunt to Exeter, N. H. to catch the Mountain Train which we boarded with our bikes for a lift to North Conway, N. H., the Eastern Gateway to the mountains. There we took to the highway and began the film record of our vacation in 16mm. Kodachrome.



Left: the bicycling Beans ready to take off, Big Stan and little Douglas in the lead, Stan, Jr., as pace-setter in the middle, and Maryjane bringing up the rear with the luggage and the precious movie camera. Right: frame enlargements from the Beans' 16mm. picture, showing how it was done.

We rode as we wished, over delightful birch-bordered byways, across mountain streams, through rustic covered bridges, seeking out the natural wonders and beauties of that region. Stops were frequent, as blueberries were ripe and plentiful!

Another day another train carried us at a snail's pace through the Crawford Notch along the spectacularly engineered railroad-bed of the Maine Central, cut out of the granite sides of the Willey Range nearly 1,000 feet above the motor road.

At Twin Mountain station we unloaded our vehicles with the help of the trainmen, as no one was on duty at the station. Our journey began away from the rails through this delightfully healthy

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Forty-Eight Years of Home Movies

By WILLIAM STULL, A.S.C.



MOST amateurs probably feel that home movies and substandard film are relatively new inventions, dating from Eastman's introduction of 16mm. in 1923, and of 8mm. in 1932. But the first substandard camera made its bow forty-eight years ago, in 1895! Then, for nearly twenty-eight years, inventors here and in Europe struggled to perfect some means of bringing home movies to the masses in a safe and simplified form. Along the way, they introduced such professional refinements as the first pressure-plate and the first pilot-pin registration.

But until 1923 all of them failed of widespread commercial success for three very good reasons: the excessive cost of the negative-positive system; the excessive danger of using inflammable, nitrate-base film in the home; and the excessive complication of hand-cranked cameras. Once these three drawbacks had been removed by the introduction of reversal film coated on noninflammable acetate-base "safety stock," and the development of simple, spring-driven cameras, the brakes were off and home movies became a world-wide institution.

The first substandard camera—which appears also to have been the first designed for home movie use—was the "Kinetic" camera introduced by Bert Acres of London in 1895. Edison was already using the 35mm. film made for him by Eastman, and Acres got his narrower, and therefore less expensive, film by the

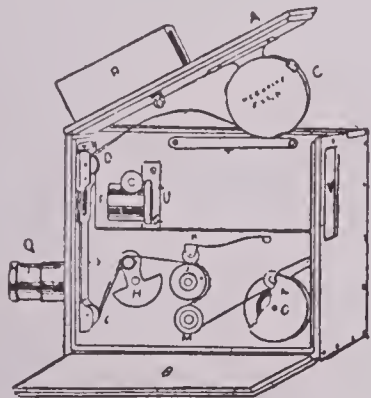


Figure 2: The first home movie camera—the 17½mm. "Kinetic" of 1895.

simple trick of slitting standard 35mm. negative film lengthwise. This gave him a film 17½mm. wide, perforated only on one edge, as shown in Figure 1, with a picture half the size of a standard 35mm. frame.

His camera is shown in Figure 2. The unexposed film seems to have been carried in a small, closed magazine (C) attached to the hinged top door of the camera (A). From there it fed forward and down through a long film-channel (D) past the taking lens (O) and past a sprocket (J) to the take-up magazine (G).

There were neither claws nor sprockets to give the film its intermittent movement. This was done, instead, by a beater (H) which at each revolution jerked the film down through the aperture enough to move it down one frame.

As may be imagined, this movement was rather rough on the film, and it was rather noisy, besides. But it had the advantages of being simple and of getting around some of the patents which stifled early-day development in cinematography. According to contemporary reports, this movement worked well enough to give "extremely steady pictures." It probably did, for it was used in quite a number of the early professional cameras, including the Gaumont and others.

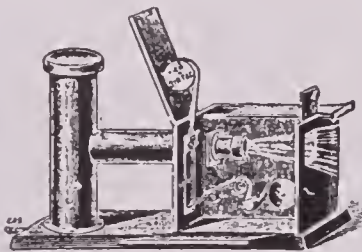


Figure 3: The "Kinetic" camera in use as a projector.

The camera served as its own projector. You simply turned it around as shown in Figure 3, and attached a lamp-house in which was a gas light. Then the auxiliary projection lens (U), about which you've probably been wondering, became a projection lens. The top of the camera-box hinged up and back to simplify the feed, and a neat little porthole at the opposite side of the box slid open so the projected image could continue on to the screen. The motive power, whether used as a camera or a projector, was provided by a hand-operated crank.

Most early-day cameras, by the way, were made like this, so that one mechanism could serve as a camera, a projector, and often as a printer as well. This was true even of much professional apparatus, for it kept the cost down and permitted a single unit to do everything.

People who have seen the center-perforated 9.5mm. film so popular in

Europe usually comment on the novelty of the idea of putting a single perforation in the center of the film, between each pair of frames, and ask if it isn't something new. Novel it may be, but new it certainly isn't, for a center-perforated 17½mm. film (shown in Figure 4) was brought out by Wrench & Son in London soon after the introduction of Acres' "Kinetic."

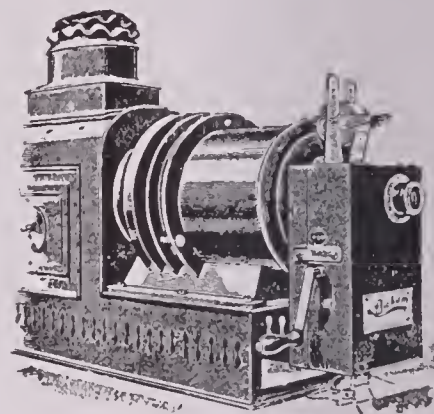


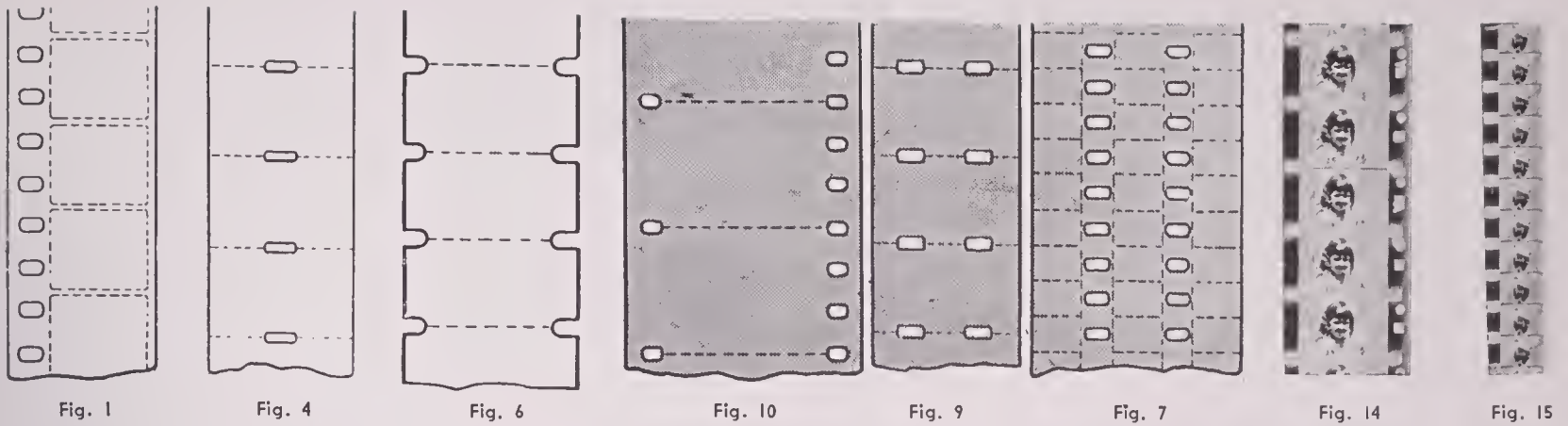
Figure 5: The "Biokam" camera projecting its center-perforated 17½mm. film.

This film was to be used with the firm's home movie camera, which was known as the "Biokam," which is shown in Figure 5. Like the "Kinetic," it was designed to photograph, print and project. Used as a camera, it was remarkably compact for its day, measuring 9½x5½x3½ inches, and selling for approximately \$33. It was equipped with a German-made Rapid Rectilinear lens which worked at $f:7.7$.

Used as a projector, the taking lens was removed and replaced with another Rapid Rectilinear working at the remarkable aperture of $f:2.5$, and the camera was attached to an enormous gas, acetylene or oil lamp-house identical with those used in still enlargers. A bracket at the top held the unspooled roll of film to be projected, and the projected film ran out of the bottom of the box onto the floor, or maybe into a wastebasket. In this, the "Biokam" projector followed the design of the professional projectors of the period, none of which had take-ups.

A very similar camera was made by Hughes, also of London. It, too, used a center-perforated 17½mm. film, but with a square perforation instead of a slot-shaped one. This was to permit better registration. Used as a projector, it was one of the first to be fitted with a take-up magazine.

The 1900 Reulos, Goudeau & Co., of Paris, put on the market an amateur movie outfit known as the "Mirograph." This used film 21mm. wide which, instead of having perforations, had notches cut in its edges as shown in Figure 6. The camera cost \$50, and the



Forty-eight years of home movie film, including split-35 17½mm.; center-perforated 17½mm.; 21mm.; 22mm. (Edison); 22mm. Pathescope; and today's 16mm. and 8mm., all shown approximately actual size.

gas-lit projection lamphouse \$16 extra. With this illumination, the "Mirograph" would project a picture at least three feet wide, and with a more expensive arc lamp it would even give a 12-foot picture.

About the same time the big French professional firm, Gaumont, entered the amateur field with its "Pocket-Chrono," which used a center-perforated film 15mm. wide and, of course, the Gaumont-Demeny beater movement.

About this time, in the early years of the century, Edison introduced a system of home movies, though he seems to have concentrated on a projector which would run special prints of professionally-made films rather than upon a real camera-projector home movie system. The projector was built along the general lines of the standard projectors of the period, but it was made to use a special film, 22mm. wide, with three rows of pictures and a row of perforation between each row, as shown in Figure 7.

After cranking the film through the projector to show the first row of frames, the projection aperture was moved over to the next row, and the film was run through again, this time in the opposite direction. Finally, the aperture was moved over again, and the film run through a third time—forward, this time—to show the third row of pictures.

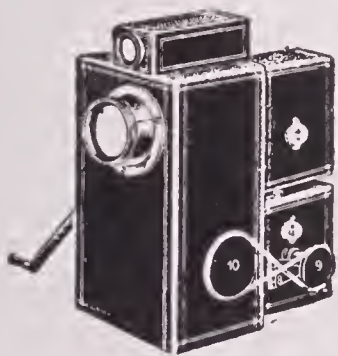


Figure 8: The 17½mm. Ernemann "Kino" of 1903.

In Germany, Ernemann, of Dresden—already one of the big names in the still-camera field—made a strong fight to popularize home movies. In 1903 they introduced their first home movie camera, the "Kino," shown in Figure 8. This was a very compact little camera consisting of a box measuring 2.4x5.6x3.2 inches, and two detachable metal magazines which held 33 feet of center-

perforated 17½mm. film. The film was moved by a claw-type intermittent, and held in register during the exposure by a pilot-pin. The camera was of course hand-cranked, with both the standard eight-pictures-per-turn shaft and one-frame-per-turn "trick" shaft customary on professional cameras. The take-up was driven by a wire belt.

The following year an improved model of the "Kino" was introduced. In this model the two single magazines were replaced by one double magazine, and the take-up was driven—independently of the hand-cranked operation of the camera—by a spring-powered clockwork mechanism. The claw intermittent was replaced by an intermittent sprocket driven through a Maltese or Geneva cross and cam like those used in 35mm. projectors. Constant focus was ensured by a pressure-plate which appears to have been the first one used in any movie camera. This model could be used interchangeably as a camera, printer or projector. In the latter use, it was placed on a special stand fitted with a fixed lamphouse.

In 1912 the French firm, Pathe Freres, introduced their first substandard outfit—a projector known as the "Pathe K-O-K," apparently in reference to their famous rooster (or cock) trademark. It was built to take a very special film, 28mm. wide with the professional standard of four perforations per frame on one side, and two perforations per frame on the other, as shown in Figure 9.

In creating this special film-size the Pathe people seem to have been motivated less by a desire for economy than by a desire to keep the dangerous 35mm. nitrate film out of the homes; the 28mm. Pathe was one of the first, if not actually the first commercial users of non-inflammable acetate-base "safety" film. The special perforation, which was of course patented, was a neat little safeguard to prevent Pathe films from being used on any but Pathe projectors. The firm built up quite an extensive library of these films—reductions from Pathe productions, both French-made and American-made—for use with these projectors.

The "K-O-K" projector itself was a self-contained unit. As electricity was not available in many parts of Europe in 1912, current for the projection lamp was generated by a small dynamo belted

to the crank which drove the projector. A clever friction drive mechanism prevented the current generated this way from exceeding that which was safe for the lamp, no matter how fast the projector was cranked.

A year later, this system was introduced in America under the name "Pathescope." Here, the projector was made for use on the regular electric light circuits, and a camera for taking home movies on 28mm. negative film was also marketed.

The 28mm. standard became quite popular in American home movie and educational circles, and several American-made 28mm. cameras and projectors were developed. These, of course, used 28mm. film with the regular four-perforations-per-frame arrangement on both edges. In 1918 the Society of Motion Picture Engineers officially recognized this "Safety Standard."

These "Safety Standard" 28mm. prints could of course be run on any Pathescope projector, while the "Pathescope Standard" prints could be run *only* on Pathescope projectors. Both systems used acetate film, but employed negative-positive, so that the only real advantage gained was safety, and there was very little, if any, reduction in expense.

In 1912 there appeared another interesting little home movie outfit known as the "Duoscope." It took center-perforated 17½mm. negative film with two perforations, side by side, instead of one, between the frames, as shown in Figure 10. The movement consisted of a double arm which moved the film onto and off from two fixed pilot-pins. The camera could be used as a projector, in which case the light was supplied by a pocket flashlight battery! In addition, the negatives could be enlarged onto a succession of small paper prints which were bound into little pocket-sized books in which the pictures could be viewed—in motion—by rapidly flipping the leaves through the hand.

Soon after this Charles Urban, a well-known professional producer and designer of the time, brought out a short-lived but interesting system known as the "Spirograph." In this the film was made in the shape of a disc, with the frames arranged spirally, like the grooves in a phonograph record. Although both cameras and projectors seem to have been made for this system it was a failure

because it prevented any possibility of editing the films, or even cutting out bad frames, while of course only a very limited amount of action could be recorded on each disc.

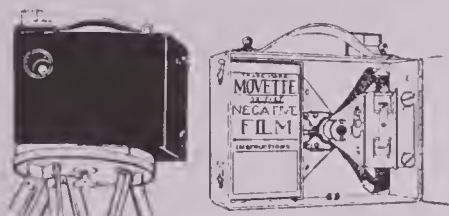


Figure 11: The 17½mm. "Movette" of 1917.

From Rochester in 1917 came a camera which can be called a genuine ancestor of today's home movie cameras. It was the "Movette" (Figure 11) which used 17½mm. film with two perforations per frame on each edge, almost exactly like the silent 16mm. film of today. The film—it was negative, of course—came in a daylight-loading magazine of 50-foot capacity, in which I believe it was also returned to a central laboratory for development and printing.

The camera was unusual in that the magazine was placed at right angles to the axis of the lens, as may be seen from the illustration. The camera was of course hand cranked, and a separate mechanism—also hand-cranked—was used for projection.

The following year another American-made camera for this 17½mm. film was introduced by the Wilart Instrument Co., of New Rochelle, N. Y., who were already favorably known as the makers of a professional camera patterned after the French Pathe Studio Camera. The Wilart 17½mm. outfit was known as the "Actograph," and was of virtually professional design, metal-bodied, with a Bausch & Lomb Tessar lens. The film was carried in double outside magazines which were virtually a miniature of those used on professional Bell & Howell or Mitchell cameras, but only of about 100-ft. capacity, and slanted rakishly on the upper rear corner of the metal camera-box.

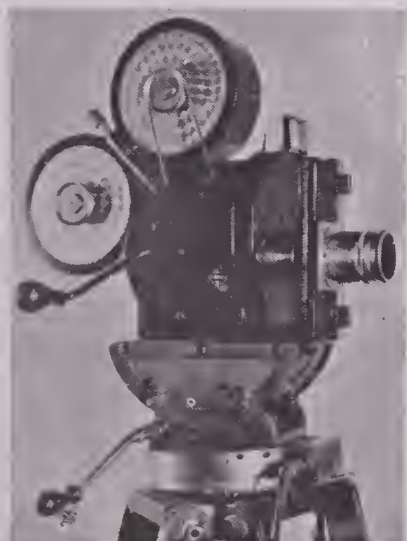


Figure 12: The 35mm. Wilart amateur camera, an enlarged version of the 17½mm. "Actograph" of 1918.

The same design was later enlarged to a 35mm. outfit of 200-ft. capacity

and known as the "Wilart News Camera, (Figure 12.) In this form it was an excellent camera for the 35mm. beginner, as this writer can testify, having started his movie-making career with one. Still later, a much simplified 35mm. version of the design was marketed by the New York Institute of Photography for its students, under the name "Institute Standard."

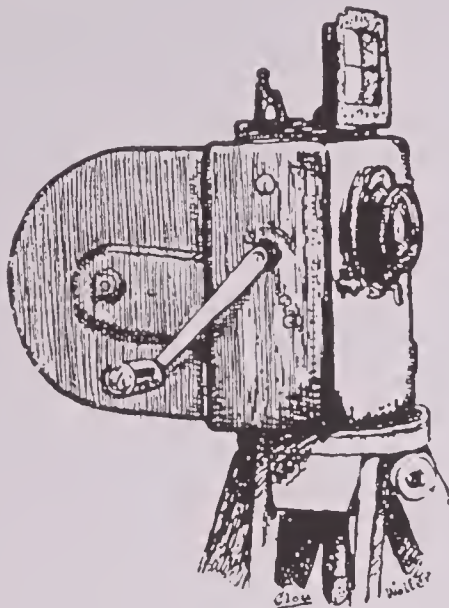


Figure 13: The 17½mm. "Clou" of 1920.

In 1920 an Austrian firm introduced another 17½mm. camera known as the "Clou" (Figure 13). This used film much like that used by the "Movette" except that the perforations were round instead of rectangular. It had a semicircular magazine in the rear and employed a single sprocket for both feeding and taking up the film. The intermittent movement was driven through a heart-shaped eccentric cam, and would operate equally well either forward or backward.

The last two attempts at 35mm. amateur cameras came respectively from France and Germany. About 1920 DeBrie, the big French professional camera-builder, introduced the "Sept," the first spring-driven, hand-held movie camera. It held slightly over 15 feet of 35mm. film in daylight-loading magazines essentially similar to those used today by the Leica and Contax 35mm. miniature still cameras. This footage could be exposed either as 15 seconds of movies, or as 250 individual stills. It could be used as a camera, a printer or a projector, and may be considered the forerunner of both today's 35mm. hand cameras like the Eyemo and the 35mm. miniatures like the Leica and Contax.

In Germany the firm of Ica, A. G.—now a part of the Zeiss-Ikon combine—brought out the "Movex," a hand-cranked 35mm. home-movie camera which used 35mm. film in 33-foot magazines. It was the direct ancestor of the later Zeiss-Ikon "Kinamo S-10," several of which were sold in this country, and the more recent "Movikon," also occasionally seen here before the war. When the writer visited Germany in 1925, he

saw 35mm. Agfa reversal film spooled for use in these "Movex" cameras, though as this was after Eastman's introduction of 16mm. reversal film, it is likely that this 35mm. reversal was introduced in an attempt to compete with the then growing popularity of 16mm.

Then in 1923, American ingenuity paved the way to the first genuinely successful system of home moviemaking. Eastman introduced the 16mm. standard (Figure 14) and the reversal film idea, coupled with a company-operated processing service which assured every user of the film of uniformly perfect processing.

This move drastically slashed the costs of amateur moviemaking. When this writer started out as a 35mm. amateur, more than twenty years ago, the bare costs of negative film, developing, and printing totalled about ten cents a foot. Eastman's first 16mm. reversal film sold for six cents a foot, including processing and return postage from the Rochester processing plant. And in 16mm. one foot of film gave the equivalent in screen time of 2½ feet of 35mm., so that 16mm., judged on a basis of screen time, cost its user about a quarter of what an equivalent amount of 35mm. would. A 15-minute, 400-foot reel of 16mm. cost the amateur \$24; a 1,000-foot reel of 35mm., giving the same screen time, would cost him over \$100. No wonder 16mm. got off to a good start!

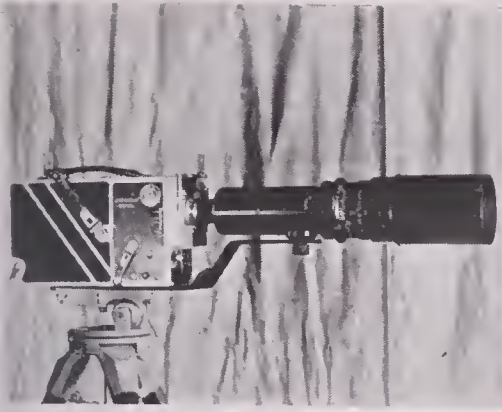
It is rather hard to determine which of the three firms—Eastman, Bell & Howell, and Victor—which between them pioneered 16mm., actually put the first 16mm. camera on the market. Certainly the three worked fairly closely together, for without Eastman's film, the other manufacturers' cameras would be of little use, while without a variety of cameras in varying price ranges to use it, the film, too, would be of little commercial value.

The sturdy old hand-cranked "Model A" Cine-Kodak is generally regarded as the granddaddy of all 16mm. cameras, though the Victor people tell us that their first 16—an adaptation of an earlier, hand-cranked 17½mm. model—antedated the Cine-Kodak by a few months. And the Bell & Howell "Filmo" was incontrovertibly the first to introduce the simplicity of spring-motor operation in place of hand-cranking which, though it seems simple, is none the less something which requires practice to do well, not to mention the firm foundation of a tripod.

All of these cameras made history in another way, too: they were one-purpose devices. For almost the first time in the twenty-eight-year birth throes of home movies, cameras were designed strictly to photograph pictures, and entirely separate units were provided to project the films.

And so, after twenty-eight years, home movies arrived. They arrived not so much because big and powerful companies stood behind the development (that had happened before, and failed)

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POINTERS ON USING TELEPHOTO LENSES

By JACK SMITH, A.S.C.

IF you want my very best advice on the subject of using telephoto lenses, it can be summed up in the three words "don't use 'em." At least, not if you can possibly manage to get out of it and make your shot with a more normal, shorter-focus lens. A scene made with a telephoto can never be as satisfactory photographically as one made with a normal lens.

In the first place, it's characteristic of telephotos that scenes made with them are flatter than those made with shorter-focus objectives. The photographic contrast is a good deal flatter, and so is the visual perspective.

For instance, if you make a full-screen shot of a man with, say, a tree, a fence or a building perhaps a hundred feet behind him, and a hill maybe a quarter of a mile in the background, a shot made with a normal lens will give you a pretty good idea of the spatial separation between the three. A telephoto shot taking in precisely the same field will compress these planes—or flatten them—so that man, tree and hill will seem much closer together, and perhaps hardly separated at all.

Moreover, there are special problems in mounting, focusing and aligning telephoto lenses which you never encounter with ordinary objectives. And atmospheric conditions you'd hardly notice when shooting with a normal lens can give you all sorts of headaches when you start working with a telephoto.

But of course there are times when you've simply *got* to use a telephoto if you want to get the picture. We don't often run into them in studio camerawork or in ordinary home moviemaking; but in field camerawork, making newsreels, documentaries, films of wildlife, and so on, we do. And of course in today's military combat camerawork the difference between using a telephoto and a short-focus lens may often be

very literally a life-and-death matter.

So if you're going to use a telephoto, begin by being sure it's a good one. With ordinary lenses, as most of us have found out, there are some types which have the characteristic of giving crisp, sharply-defined images, and other types which, no matter what you do with them, will never give you anything but a comparatively soft picture.

It's the same with telephotos. Only, if anything, rather more so. And in telephoto work, you need every bit of sharpness your lens can give you. So begin by getting a lens that has the sharpest, wiriest characteristics you can get. After all, if a lens is too sharp, you can always soften the image down; but if the definition isn't there to start with, nothing you or anybody else can do can put it into your picture.

My personal preference, if it matters, happens to be for Zeiss telephotos, while a good many of my friends swear by Cookes. For 16mm. use I've never heard any complaints about either Cooke or the Kodak Anastigmat telephotos.

Incidentally, in these days when it isn't any too easy to get hold of lenses—good or bad—here's a little fact that may be helpful. A true telephoto lens, you know, is one specially designed so that it gives the equivalent angle of a long focal length lens without requiring the full separation from the focal plane that its equivalent focal length would ordinarily demand. A twelve-inch telephoto, for instance, may require a separation from the film of only six or seven inches instead of the full twelve.

However, if you don't mind having a bulkier lens-mounting, you can mount any ordinary long-focus lens for use as a cine telephoto. A lens like that will almost certainly be designed to cover a picture larger than the movie frame you're using it on. Using it on a much smaller picture-area, you'll be using only

Left: 12-inch Dallmeyer Telephoto mounted on a Cine-Special. Center: 40-inch "Dallon" telephoto mounted on a 35mm. Vinten camera. Right: 20-inch Cooke telephoto mounted on a magazine-type "Filmo." Note auxiliary reflex focuser included in lens-mount, and use of surveyor's transit as finder.

the center of the image—the part where the definition and optical correction are the best. In this way you can often make a lens which in itself isn't so hot give quite satisfactory results.

This is true when you take a lens originally intended for use on a 35mm. camera and remount it for use on 16mm. The editor of this magazine, for example, tells me he has a lens—a 3-inch, $f:1.9$ Dallmeyer—which, when he used it on his 35mm. camera was so lacking in sharpness that he pretty well abandoned it in favor of a much slower—but sharper—Goerz. But since he has had the $f:1.9$ lens remounted for use on his 16mm. Filmo, it has suddenly turned into an excellently sharp lens. The reason is, of course, that on 16mm. he is using the lens on a picture-area only one quarter as large as that of a 35mm. frame, and by using only the center of the image, he is using just the very best part of the lens' image. The same thing is true when you take a much longer-focus lens off a Graflex or other still camera and use it on a cine-camera.

Mounting a telephoto is a vitally important factor in getting good results. If you've tried any telephoto work at all—even with the less powerful telelenses—you know that the first essential of good telephoto camerawork is to provide the rigid foundation of a good, solid tripod. For practical purposes, you might consider the action of a telephoto lens as being like that of a lever with its fulcrum at the center of the lens. The image is balanced at the tip of the short end of the lever, and the scene itself is balanced precariously at the end of an infinitely long lever-arm. Obviously, even the tiniest bit of motion at the end of the short arm will make the scene at the end of the long arm jump tremendously. In consequence, the resulting picture will jump all over the screen. In the same way, any unsteadiness between the lens and the camera will be magnified enormously.

For the lower-powered telephotos—up to, I should say, about a six-inch focal length—the ordinary screw or bayonet type mounts used on good 16mm. or 35mm. cameras will usually be adequate. But beyond this, telephoto lenses need

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Amateur Movies and the War Effort

By W. G. CAMPBELL BOSCO

SPEAKING on the occasion of last year's Academy Awards Banquet, to an audience of film notables still trying to adjust the pattern of their thought to the reality of War, John Grierson, Film Commissioner for the Dominion of Canada, said, "There is a duty which falls on all in this industry alike. It is humble, it is deeply ordinary. It carries no honors with it. Theatres will not applaud it: like private soldiering it will go completely unnoticed.

"But it is none the less vital. It is the simple duty of helping the country with its every-day chores of war publicity and instruction.

"We can use the film to help the fighting services in their daily instruction. We can help the thousand-and-one Civilian Defense Services to a better understanding of their sometimes quite local duties. We can aid industrial morale and speed the organization of new skills in the service of our country.

"We have the difficult duty—the most difficult of all from a mental point of view—of shaping from our war observation on every front, both military and civilian, the strategic pattern of highly complex events. Of helping the people to a broad and simple understanding of what is happening—of where they fit in—of what in duty is expected of them.

"Nothing is so certain as that men cannot give their best if they are bewildered, and particularly so in a democracy; and the greatest, perhaps, of all our film responsibilities is to give people, in simple dramatic patterns of thought and feeling a sense of the true issues which lie behind the maze of events in this difficult moment of human history.

"There is a contribution which every kind of film and every kind of technician can make to help everyone, on military and civilian front alike, to do his job just a little bit better and feel, however obscure he may be, a fighting force in the national effort. This sober and humble and unselfish duty of helping the people, wherever they may be organized, to effective citizenship and good soldiering, will be the best evidence that we have, in all reality, aligned our art with the public purpose and have dedicated it, in all realism, to the pressing needs of our United cause."

A year has passed since these words were spoken. A year has seen the entire

National effort reoriented to meet the demands of Total War.

During this period the people of the motion picture have met their wartime obligations enthusiastically, and have produced countless evidences of the power of the motion picture as a weapon of modern war. And by the phrase "the people of the motion picture" we cannot by any means restrict our meaning only to the professionals of Hollywood. Their contribution has been enormous: but it is by no means all. The makers of 16mm. educational and industrial films have also played an active, if unpublicized, part in this effort.

And so have America's amateurs. Some Clubs and individuals have done yeoman service in making—often at their own personal expense—films on Civil Defense subjects for their own communities. Some of them, like the Long Beach Cinema Club's "Fire From the Skies," are in every way "professional enough" to merit national release.

Many other individuals and groups have found their way of service in projecting 16mm. films for Army posts and Civil Defense meetings. The Syracuse Movie Makers' Association, for instance, has taken over the task of providing motion picture entertainment for the troops at a big Air Force base nearby. The Long Beach Cinema Club has been doing its collective bit by going out to the remote posts, gun and searchlight emplacements, etc., guarding the nearby coast and defense plants, and putting on shows for these men whose duty prevents them from leaving their stations long enough to enjoy the normal recreational facilities open to the men in the large Army Camps. And you can bet your bottom dollar that these soldiers and sailors are a most enthusiastic audience, regardless of whether the films shown are silent or sound, professional or amateur!

Amateurs who voluntarily engage in tasks like this are patriotic enough to be willing to do it on their own time, with their own gasoline and tires, and using their own equipment. But sooner or later they come up against the problem of getting fresh program material. They've shown all the worthwhile amateur films that are available to them, and all the professionally-made 16mm. films they can afford to buy. But the soldiers are still there, or the civilian defense meetings still carrying on—and somehow, they must get film for

them. New pictures that these audiences haven't already seen.

Fortunately, several Government agencies, in collaboration with civilian film-library organizations, are launching programs which will help solve this problem.

The Office of War Information, for example, is making available 16mm. reduction prints (in sound) of its constantly increasing library of films made to inspire, instruct and keep the people abreast of the War Effort in all its many phases. These films are being made available for a service fee of only fifty cents for the first subject on the program, and twenty-five cents for each additional subject.

These productions present visual evidence of what's going on in this country of ours in this time of Total War. They show the increasing might of America's wartime production as the "arsenal of democracy." They show what the civilian can do—and also, in some cases, what he *should not* do.

They're professionally made in every respect. The photography is by such men as Carl Pryer, A.S.C., Lt. Floyd Crosby, A.S.C. (probably America's outstanding photographer of documentaries), and by various outstanding studio cinematographers. The musical scoring is admirable, and the commentaries written by such notables as Carl Sandburg, Eleanor Roosevelt, and others, and read by such professionals as Frederic March, Spencer Tracy, Katharine Hepburn and Lt. James Stewart.

The series available at present include "Aluminum"; "Bomber"; "Building a Bomber"; "Building a Tank"; "Democracy in Action"; "Lake Carrier"; "Men and the Sea"; "Power for Defense"; "Ring of Steel"; "Safeguarding Military Information," and many others. Also—in color—is that epic of Walt Disney's, "The New Spirit," in which Donald Duck makes it almost a pleasure to pay one's income tax. Five releases per month are planned for the future.

In much the same way, the Coordinator of Inter-American Affairs has released a series of pictures dealing with the life of our Latin-American neighbors below the Rio Grande. From one to four reels in length, most of these subjects are in color, and all are available on the same terms as those released by the O.W.I.

"Our Neighbors Down the Road" concerns itself with the events and scenes of a motor trip through South America along the new Pan-American highway. "Bounteous Earth" records the festivities of Candlemas day in the ancient city of Cholulu, Mexico. Then there are "Patagonian Playground"; "Sunday in the Valley of Mexico"; "A Line from Yucatan"; "Guatemala Sketch-book"; and "Americans All," a two-reel picture showing intimate glimpses into the lives of those other Americans, our neighbors, who live in that vast and beautiful section of the earth which stretches from

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HERE'S HOW

For many years an important feature of THE AMERICAN CINEMATOGRAPHER'S service to its readers has been the answering of technical questions about professional and amateur movie-making. The majority of these queries require replies too detailed to be answered by publication; but from time to time, as space permits, we publish the answers to some of the more interesting, or the more frequently asked, of these questions in this department. We invite all of our readers to make use of this service.

LIP-SYNCHRONIZING

Q: Recently I heard of an amateur who used a flexible cable between projector and recorder to lip-synchronize home movies. How is the camera connected with the recorder?—C. H. B., Chicago, Ill.

A: According to John Leffler, Minneapolis movie maker, who devised the set-up, the only cameras which may be adapted successfully for simultaneous photographing and recording by this method are the Eastman 8mm. Models 20, 25 and 60. Leffler mounts a motor on the camera, with necessary gears and a flexible cable, which may be attached to most any recorder. To attach the motor, however, a slight alteration in the camera is necessary. Of course, the motor is readily detachable again.

FRAME ENLARGING

Q: I am an 8mm. fan, and some of my 16mm. friends tell me that they have had good success in enlarging their frames as "stills" for contact printing. Is an 8mm. movie frame enlarger available?—B. T., New York City.

A: During 1941 the Craig Movie Supply Co. introduced a modification of their well-known "Projecto-Editor" film-viewer which permitted making enlargements from 8mm. frames. However, due to the war only a limited number of these "Enlargo-Editors" were manufactured, and while some may yet be available, they are not easy to obtain. It is possible, though, to make 8mm. frame enlargements with Eastman's 16mm. enlarger by masking off the part of the aperture not filled by the 8mm. film with opaque Scotch tape. Enlarged negatives can also be made by projecting the desired frame on a piece of cut film in a darkroom or in a pyramidal hood attached to the projector, and developing the copy negative in the usual manner. Exposure must be short, and focusing may be done on a white card of similar size before substituting the sensitized film. Our experience has been that the best results come from enlargements of fairly close shots, preferably Kodachrome, and using a film like Verichrome or Plenachrome for the enlarged negative.

FADES AND DOUBLE-EXPOSURES

Q: I wish to get a camera that will permit me to lap-dissolve, fade, and double-expose. What do you suggest? C. R., St. Mary's, Pa.

A: Only the more expensive cine outfits permit professional touches such as dissolves, fades and multiple exposures. There are some firms, however, which have specialized in rebuilding cheaper cameras to permit these effects. Even without these gadgets, lap-dissolves and double-exposures are easy if you use a double-run 8mm. camera. All that is necessary is to mark the starting-point of the first run accurately on the film and make an accurate record of the footage run off between that point and the point you start your dissolve or double-exposure. After making the first "take" of your dissolve or double, run the rest of the roll through the camera twice with the lens capped. This brings you back to the starting-point, after which (still with the lens capped) you can run off the necessary footage to bring you to the starting-point of the second "take" of the dissolve or double. After making that, finish the roll in the usual manner.

8MM. OR 16MM.?

Q: Although I've had the movie bug for some time, I'm planning at last to buy a cine outfit. Shall I get 8mm. or 16mm.?—E. S., Billings, Mont.

A: The type of camera you get will depend on the amount you want to spend and the use to which it will be put. If you plan to shoot only for a personal record for home screening, the 8mm. will do the job, but the 16mm. will probably give you sharper pictures, thus permitting you to project them on larger-sized screens, and if you have the ability, to make some commercial use of your films. On the other hand, 8mm. is cheaper to buy, and you can get nearly three times as much screen time in 8mm. for the same money spent buying film. And as the Armed Forces are making constantly increasing use of 16mm. for combat and other camerawork, it is probable that 8mm. equipment will be somewhat more readily obtainable "for duration."

DEVELOPING MOVIES

Q: How can I develop my own movies?—J. L., Newcastle, Pa.

A: Since Kodachrome can only be processed by the manufacturer, we assume you mean black-and-white movies. Sixteen millimeter negative film, and the positive film often used for titling in either 16mm. or 8mm. are developed like a still-camera negative, but reversal-film must be developed, "flashed" to reverse the image, and redeveloped. As many amateurs have proven, this can be done at home, though until you've gained the requisite skill, the results are likely to be inferior to those obtained by sending your film to a regu-

lar Eastman or Agfa processing station. Full instructions, including list of dark-room essentials, may be obtained from the film manufacturers or in such standard reference works as Morgan and Lester's "Photo-Lab Index," etc. With the exception of the fact that drums or racks must be used in processing motion picture film, the methods and formulae recommended for Agfa's 35mm. Reversible Superpan, for Dufaycolor, and for the old Lumiere Autochrome and Agfacolor color plates will work satisfactorily for reversing 16mm. film.

AIR MOVIES

Q: What speed would you suggest for taking movies at low altitudes from an airplane?—F. H., Duluth, Minn.

A: At altitudes of several thousand feet, normal 16-frames-per-second speed will suffice, but when you drop below 1,000 feet, 32 frames will smooth out rough air and slow up the fast-moving terrain. Ducks Unlimited observers, on their annual aerial survey of the Canadian North, report that they get their best results filming waterfowl at 64 frames while flying at 100 to 400 feet off duck-infested lakes. Of course, much depends on the speed of the plane and the angle at which you shoot.

FILMING PARADES

Q: I have a passion for shooting color movies of parades. How should I vary my shots to prevent sameness throughout?—M. D., Los Angeles, Calif.

A: Look for unusual angles. Try worm's eye and bird's eye views. Avoid head-on movies. Newsreel cameramen find that a fairly lofty camera position over the heads of the crowds and with the marchers coming diagonally into the camera gives a desirable effect. In filming a recent Ice Carnival, the St. Paul Amateur Movie Makers Club placed a high-walled empty furniture truck beside the line of march where lighting and shooting angle would enable members to photograph to best advantage without the usual crowd-jostling. Since you can't do that these days, try setting up on the protruding marquee of a theatre, hotel or the like so you can get above the crowd and fairly close to the edge of the sidewalk.

BIG SCREENS

Q: I have heard that some amateurs have successfully projected 8mm. movies to fill an 8x10 foot screen. Is this entirely satisfactory?—M. H. O., Starkville, Miss.

A: Two Minneapolis amateur movie clubs have already put on 8mm. shows in a theater-size auditorium, filling an 8x10 foot screen. Special equipment was used, however. An Eastman 8mm. Model 70A projector was fitted with a 750-watt lamp, with voltage boosted by transformers to 125 volts. A specially-shimmed Bell & Howell 1½-inch projection lens was used to give maximum brilliancy for the long throw. It is not advisable to use high-wattage lamps in some projectors, for damage to film or motor might result.

AMONG THE MOVIE CLUBS

"Nation Builders" For 8-16's

Highlight of the January meeting of the 8-16 Movie Club of Philadelphia was a showing of James A. Sherlock's great film "Nation Builders," from the library of THE AMERICAN CINEMATOGRAPHER. Other highlights of the meeting included a demonstration of the Club's new point system of rating films, and a demonstration of how a film can gain or lose points according to the choice of a good or bad musical background. The meeting was planned and organized by Phil Oetzel and George Burnwood.

FRANK HEININGER.

San Francisco Elects

The January meeting of the Cinema Club of San Francisco was the first to be held under the guidance of the Club's 1943 officers, elected at the Club's December meeting. They include Rudy Arfsten, President; L. M. Perrin, Vice-President; Adaline Meinert, Secretary; Jesse W. Richardson, Treasurer; and C. D. Hudson, D. L. Redfield and F. C. Younberg as Directors.

The scheduled program included "Wedding at Stanford Chapel," an excellent 16mm. film by K. A. Meserole of the Peninsula Home Movie Club; "Ice Follies," filmed by Len Fogassy, the prominent skating instructor, and planned especially to show ice skating technique; and "Careless Heiress," a comedy by Member Eric Unmack.

ADALINE MEINERT, Secretary.

Preview For Tri-City

Feature of the January meeting of the Tri-City Cinema Club of Davenport, Ia., and Rock Island and Moline, Ill., was a "sneak preview" advance showing of scenes made by John Hoffman at the December Annual Banquet. Also scheduled was a talk by Dr. James Dunn, "What My Movie Camera Has Done For Me," and the projection of members' films including "Animals and North Woods," 400 ft. 16mm. Kodachrome by Jacob Accola. It was announced that all films shown before the Club's June meeting will be automatic entries in the Annual Contest, while later entries may be made by turning the film over to the Contest Committee.

WILLIS F. LATHROP,
Secretary-Treasurer.

Color In Philadelphia

In keeping with his reputation as a producer of fine Kodachrome pictures, Robert Crowther brought to the screen of the Philadelphia Cinema Club's January meeting his latest film, "Grand Manan." To the casual observer, the film seemed to lack the brilliant color of his previous pictures, but it gave a true rendition of the foggy atmosphere of Grand Manan and its sister islands in the Bay of Fundy. A complete story of the her-



LONG BEACH INSTALLS. Left: members of the Long Beach Cinema Club turned out over a hundred strong for the Club's annual Installation Banquet January 6th. Right: the Editor of THE AMERICAN CINEMATOGRAPHER hands the gavel to incoming President Claude Evans. Left to right, Treasurer A. W. Nash; President Claude Evans; Editor Stull; First Vice President Mrs. Mildred Caldwell; Secretary Lorin Smith, and Second Vice President Pat Rafferty. Photos by Clifford Lothrop.

ring industry was captured by the energetic cinematographer who sailed out into the bay at 4 a.m., and got his camera going just as the fog lifted. The succeeding sequences showed the fishermen laying their nets and bringing in a record catch, unloading it at the wharf, and the final smoking.

Mr. Robbins, representative of a local Bell & Howell dealer, gave helpful suggestions for indoor lighting. Two delightful films were contributed by Neil MacMorris: "Autumn," a beautiful picture taken in the Poconos, and a repeat showing of his colorful film, "Bermuda." "Boy Scout Camporee" pictured an encampment of Boy Scouts in Fairmount Park. This was Adolph Pemsel's first effort in movie-making and shows promise of good pictures to come.

FRANCIS M. HIRST.

New Officers In Indianapolis

The Indianapolis Amateur Movie Club held its annual election at the meeting of December 16th, and the results were as follows: G. A. Del Valle, President; A. J. Thomas, Vice-President; C. Watzel, Secretary; A. F. Kaufmann, Treasurer, and E. M. Culbertson, Corresponding Secretary. The installation of the new officers took place at the banquet on January 9th. The entire dining-room was scheduled to be lighted to Super-X brilliancy to give any members who wished to take movies of the affair a chance to do so. The Club has not as yet been adversely affected by gas rationing, and the officers and members look forward to the best year yet in 1943.

ELMER M. CULBERTSON,
Corresponding Secretary.

Metro Parties Winners

The January meeting of New York's Metropolitan Motion Picture Club was planned as a party to honor Joseph J. Harley and Charles M. De Bevoise, first- and second-place winners in the Club's recent Annual Contest, and to enable the

Club's thirty new members to become better acquainted with each other and the old-timers. Screen fare included Member De Bevoise's prize-winner, "Queens Is Ready," a dynamic picturization of Air Raid Precautions in New York's largest borough; "How to Use Your Camera," from the Harmon Foundation; and "Three Episodes," with which Wallace W. Ward won honors in a "Photoplay Magazine" contest 'way back in 1929.

FRANK E. GUNNELL.

Long Beach Installs

The January meeting of the Long Beach (Cal.) Cinema Club was the group's Annual Installation Banquet. In spite of a very bad cold, Honorary Member William Stull, A.S.C., Editor of THE AMERICAN CINEMATOGRAPHER conducted the installation ceremonies, presenting the Presidential gavel to incoming President Claude Evans, and introducing Vice Presidents Mildred Caldwell and Pat Rafferty, Secretary Lorin Smith and Treasurer A. W. Nash. He also announced the winner of the Club's Annual Contest and presented them with their Certificates of Award. In the 8mm. division, first prize went to Lorin Smith for his film "Ceramics;" second place to Mildred Caldwell for "Behind the Scenes," and third prize to Earl Everley for "A Trip to Dreamland." In the 16mm. division Pat Rafferty won first prize for "Rebound Books with Brand-new Looks," while Clarence Aldrich captured both second and third places with "Oddettes," and "Fiesta," respectively.

The Club's January 20th meeting was opened with the pledge of allegiance to the Flag and the singing of the National Anthem, accompanied by a sound picture with words and music. Mrs. Caldwell reported on the success of the showing of films to men in the service, and President Evans, who is also Chief of the Fire Prevention Bureau, showed a film, "Guardians of the Home," which pictured Long Beach in its infancy, and fire equip-

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Free Films For Movie Club Programs

In response to numerous requests from program chairmen and other officers of amateur movie clubs, we list below the films from the library of THE AMERICAN CINEMATOGRAPHER which are available for showings at meetings of recognized movie clubs in the United States. These films are duplicates of some of the prize-winning films in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contests, and include some of the outstanding amateur films of all time. Winners of the Grand Prize are designated by an asterisk. Except where specifically designated as color, the films are in black-and-white, from black and-white originals.

Musical scores from phonograph records have been arranged for some of these films, and when requested, a listing of these records will be sent along with the films as a guide for clubs using this method of musical scoring. If the request is made sufficiently far in advance, an analysis of the films will also be sent as a guide to study the factors which made each film outstanding.

These films are available to all recognized amateur movie clubs within the continental U.S.A., at no charge other than transportation from and to Hollywood by express or parcel post. The request for bookings should be made by the program chairman, president, secretary or other responsible officer of the club. Due to the unavoidable delays in wartime transportation, such requests should reach us not less than three weeks before the meeting at which the film is to be shown, and it is advisable to give an alternate choice in case one or all of the films requested have been previously booked elsewhere or delayed in transit from another booking.

SCENARIO FILMS (8mm.)

*"Red Cloud Lives Again"	(1 reel)	("Covered Wagon" type of Western.)
*"New Horizon"	(1 reel)	(Excellentlly-handled heavy drama of farm life.)
"Cattle Country"	(1 reel)	(Simple love-story in Western setting.)

(16mm.)

*"Tarzan, Jr."	(3 reels)	(Movie-within-a-movie in a boy's camp.)
"Prize Winner"	(1 reel)	(Well-handled homespun comedy.)
"Ritual of the Dead"	(1 reel)	(Horror melodrama, excellent acting and makeup.)
"Little Sherlock"	(1 reel)	(Amusing melodrama in a movie-maker's home.)
"Solar Pelexus"	(2 reels)	(H. G. Wellsian fantasy-satire on a mythical planet, filmed largely in miniature.)
"Nite Life"	(2 reels, color)	(Insomnia and a nightmare, trick photography.)
"I'd Be Delighted"	(1 reel)	(Story of a polite seduction, told in close-ups of hands and feet in sophisticated style.)
"The White North"	(1 reel)	(Snow-country melodrama; excellent sets and acting; indifferent photography.)
"Chronicle"	(1 reel)	(Biography of a boy from cradle to prison, told in close-up of hands and feet.)

TRAVEL FILMS (16mm.)

"Rice"	(3 reels)	(Life-story of a Korean peasant.)
"Beyond Manila"	(3 reels, color)	(Little-known parts of Philippine Islands.)
*"To the Ships of Sydney"	(1 reel, color)	(Poetic presentation of harbor of Sydney, Australia, in form of a ship-lover's will.)
"Chicago, Vacation Centre of the Nation"	(1 reel, color)	

DOCUMENTARY FILMS (16mm.)

*"Nation Builders"	(3 reels)	(One of the greatest amateur films made: comprises entire history of Australia.)
*"Doomsday"	(1 reel)	(Impressionistic film based on old superstition connecting solar eclipse with end of world.)
*"In the Beginning"	(2 reels)	(Reverent account of creation, with titles from Genesis.)
"Garden Life"	(1 reel, color)	(Unusual film, in stop-motion, showing flowers actually growing.)

PHOTOGRAPHY—EXTERIOR

"Early Summer"	(1 reel, 16mm.)	(These four pictures are all made by the same man, Tatsuichi Okamoto, of Japan. They all have some of the finest photography ever done by an amateur, and show Japanese life and thought.)
"Tender Friendship"	(1 reel, 8mm.)	
"Vanishing Autumn"	(1 reel, 8mm.)	
"Lullaby"	(1 reel, 16mm.)	
"Mt. Zao"	(1 reel, 16mm.)	
"The Brook"	(1 reel, 16mm.)	(Extremely spectacular film of skiing in Japan.)
"Moods of Nature"	(1 reel, 16mm.)	(Pleasant scenic of Australian countryside, titles from Tennyson's poem.)
		(The first film made by the English documentary film maker, Paul Burnford, A.R.P.S.)

HOME MOVIES

"Happy Day"	(1 reel, 16mm.)	(An English child's holiday at the seaside.)
"Another Happy Day"	(1 reel, 16mm.)	(The same child's Christmas.)
"Life"	(1 reel, 16mm.)	("Barefoot Boy" reminiscences of "Life—As You Remember It.")
"Mischief"	(1 reel, 16mm.)	(Amusing film of family pets—a cat, a Scottie, and a tame sparrow.)
"Two Kids and a Pup"	(1 reel, 8mm.)	(Simple story of two children and their pet.)
"Santa Visits Elaine"	(1 reel, 16mm., color)	(Very clever Christmas film, with Santa Claus' visit highlighted by trick photography.)

MISCELLANEOUS

"Jello Again"	(½ reel, 16mm., color)	(Novelty, animated-cartoon made with Jello boxes.)
"200-inch Telescope"	(1 reel, 16mm.)	(Casting of the 200-inch telescope mirror, filmed by a Corning Engineer.)

Movie Clubs

(Continued from Page 64)

ment drawn by horses. The film was presented with narration and musical background. A 16mm. color-film on the launching of a Harbor Dept. fire-boat was also shown. "Sport Spellbinders," a fast-moving sound picture with action shots of various sports was shown by Clarence Aldrich, and Lorin Smith's "Yachting" was also enjoyed.

LA NELLE FOSHOLDT, Publicity.

Patriotic Films In Chicago

The January 7th meeting of the Chicago Cinema Club featured two patriotic films made by members. "Keep It Flying" by Member Allen proved a fine Kodachrome subject any filmer could make from his miscellaneous shots. Member I. Vise's "Victory Gardens," also in Kodachrome, showed his wife's struggling but victorious work at her Victory Garden.

BARBARA HUBBARD.

Photography of the Month

(Continued from Page 55)

purchased for release by United Artists. The print we saw gave us the impression that the camerawork and negative processing had, as might be expected, been planned to coordinate with the Paramount laboratory's printing standards, and that this coordination had been somewhat upset by release-printing in another laboratory.

THE GLASS KEY

Paramount Production.

Director of Photography: Theodor Sparkuhl, A.S.C.

"The Glass Key" is in some respects one of the best pieces of work we've seen come from the camera of Theodor Sparkuhl, A.S.C., in some time. A melodrama, he has photographed it in the crisp, modern manner, making considerable use of the current increased-depth technique. While in some sequences it seemed to us that he had carried his effect-lightings a bit too far, they are undeniably effective from both pictorial and dramatic viewpoints.

His treatment of the male players is excellent; the story gives him constant opportunity for presenting them in virile, and pictorially striking character-lightings. His treatment of Veronica Lake is rather uneven: in some sequences it is excellent, while in others it could certainly have been improved. In these latter scenes both he and the player were certainly not helped by the costumer, especially as regards the hat Miss Lake was forced to wear.

Telephotos

(Continued from Page 61)

some additional provision for rigidity if first-class results are expected.

For what we might call moderate-powered telephotos—say up to twelve or fifteen inches—probably all you'll need is some sort of an auxiliary brace

like the one shown in the left-hand illustration. This is just a simple angle bracket, one end of which screws rigidly to the lens and supports most of its weight, while the other end locks into place between the camera and the tripod-head.

For more powerful telephotos, and particularly if you are using a rather lightweight camera like the magazine-type Bell & Howell shown fitted with a 20-inch lens in the right-hand picture, you'll do well to mount the lens firmly on the tripod, and then virtually hang the camera onto the lens.

When you come to the really high-powered telephotos, an even better mounting is one on the order of the one shown in the middle picture, in which a Vinten 35mm. camera is shown fitted to an $f:8$ Dallmeyer "Dallon" telephoto of 40-inch focal length. In this a long, extra-rigid mount, something like a small lathe-bed, is fitted to the tripod, with the lens rigidly supported at one end of the mount and the camera at the other, with a light-tight tube in between. Personally, by the way, I rather prefer a small bellows like that on a still-camera instead of a tube for an extreme telephoto mount like this.

Focusing and aligning telephoto shots bring up some more interesting little problems. Working with the ordinary one and two-inch lenses which are considered normal for 16mm. and 35mm. work, at the distances usually encountered in telephoto work, and at the stops usually used for exteriors, we can be pretty safe, in a pinch, in setting the lens at infinity, or better yet, at its hyperfocal distance and shooting, with reasonable assurance that practically everything in the field will be adequately sharp.

But as the focal length increases, this depth of field decreases, and decreases very sharply. If you set a 25mm. lens at 15 feet and stop down to $f:8$, everything from 4 feet to infinity will be acceptably sharp. With a 50mm. lens set at 20 feet, everything from $9\frac{1}{2}$ feet to infinity will be adequately focused at $f:8$. But with a 6-inch lens at the same stop and focused at the hyperfocal distance (182 feet), the depth of focus has dropped off until your zone of adequately sharp focus extends only from 90 feet to infinity. With a 10-inch lens focused at infinity and stopped down to $f:8$, anything nearer than 520 feet from the camera will be badly out of focus.

Thus while with the lower-powered telephoto lenses you can work quite well by simply using the calibrated focusing scale on the lens-mount, for the higher-powered telephotos you'll need a decidedly more accurate means of focusing. If your lens is calibrated accurately in the higher ranges, you can sometimes solve this problem with an optical rangefinder if this, too, is calibrated to read accurately for telephoto distances. In at least one case I've known of a cinematographer who successfully built a Leica rangefinder into the finder of his Eyemo and interlocked

it with the focusing of a 12-inch telephoto by means of gears and cams.

But your safest bet is to follow the professional method of focusing visually on a ground glass focusing screen, preferably through a magnifying eyepiece. With a 16mm. camera like the Cine-Special or the magazine-type cameras in which you can replace the magazine with a ground glass focusing attachment, this is easy. For other cameras and really long-focus lenses a good idea is to use a reflex-type focusing device like those sold for use with 35mm. miniature cameras and inserted in the long tube between the telephoto lens and the camera, like the one in the right-hand picture.

A device like this will be helpful in framing stationary shots, but if the subject is likely to be moving, you'll need an accurate finder so you can follow the action. I wouldn't advise trying to mask down an ordinary finder for this because while you may be able to mask it quite accurately, you'll end up by having such a small finder image that it is very difficult to follow accurately, especially on fast-moving action. Your best bet is to use a positive type finder like those on the Bell & Howell cameras, with the finder lenses so matched to the telephoto lens that they cover the same field of view and still give you a good, big image. Sometimes, as in the right-hand picture, a surveyor's transit can be adapted for this purpose.

An absolute essential to good telephoto camerawork is a really good lens-shade. Nine times out of ten the one that comes already fitted to the lens isn't nearly enough. Any lens-shade should be just as narrow and as deep as is possible consistent with keeping it from cutting into the lens' field.

This is especially necessary in the case of telephoto lenses. Most of them have front elements which are much larger than the front glasses of much faster ordinary lenses. These big glass surfaces—unless fully shaded—tend to pick up and reflect stray light-rays from outside the picture-area and kick them back into the picture in the form of scattered light which produces an effect on the picture similar to fog. That's one reason why most telephoto scenes are so much flatter than scenes made under identical circumstances with ordinary lenses. The simple addition of an adequately deep lens-shade will go an amazingly long way toward snapping up any telephoto shots.

Atmospheric conditions can give you a lot of trouble when you start shooting with a telephoto lens, too. Working in black-and-white, you can cut through ordinary aerial haze with a filter, but you can't filter out the ripply effect made by the heat-waves shimmering up from the ground on hot days.

Probably, back in the days when we all took our vacations by motor, you may have noticed how on hot days the distant pavement seemed to look as if it were covered with water. This isn't just an optical illusion: it is caused by

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the heat waves reflecting up from the hot ground and actually moving the air—in the literally physical sense—as they reflect upward. You can sometimes see the same thing above a hot stove.

Of course it photographs, giving a good deal the same effect that a diffusing screen would. Making pictures in Africa some years ago I noticed that this was particularly troublesome when we had to make telephoto shots with the camera comparatively close to the ground. If the camera was higher, shooting from a hill out over an open landscape, or even on a tree or parallel, the heat-wave ripples gave us much less trouble.

As I've said, you can cut through ordinary atmospheric haze with filters. In black-and-white, I'd recommend the Aero filters, which were made for this specific purpose. You'll get stronger haze-penetration with heavier filters like the G and the various red ones, and added contrast, too, but at the price of over-correction and a distorted tonal rendition of color values. If you want your telephoto scenes to intercut smoothly with other, normal shots, or to give a strictly normal black-and-white rendition of colors, keep away from filters except, at most, the Aeros.

In Kodachrome, the rule-books say to use the so-called "haze filter" for penetrating haze in distant landscape shots. But my personal preference is for the Pola-screen, which cuts through ordinary aerial haze just as well, if not better, since much of this haze is simply scattered or polarized light. And the Pola-screen doesn't change the color-rendition as the haze filter often does.

Finally, remember to keep your exposure correct, and your lens clean, and you'll have a good start on the way to mastery of telephoto camerawork.—END.

Films For War Effort

(Continued from Page 62)

the Rio Grande down to the Straits of Magellan.

Showings of pictures like these, whether to Service or civilian audiences, provides entertainment—and a great deal more besides, for they will help foster the understanding which is needed to cement the growing friendship of the peoples of the two Americas, who really have so much in common, in spite of the differences in language and superficial customs.

To facilitate the distribution of these pictures, Bell & Howell's Filmosound Library and many other similar organizations throughout the country are swinging into action with their already well-established systems of 16mm. film distribution. In addition, most of these libraries have available 16mm. prints of outstanding British, Canadian and other War Films which show the War Effort on both the fighting and the home fronts. And 16mm. prints of the latest newsreels from all the war fronts throughout the globe are constantly being rushed

into readiness to bring to the 16mm. audience the current aspects of the common struggle.

Yes, the motion picture, so far, has more than lived up to the expectations of those who hoped the most for it. And the amateur, with his camera and with his projector, is doing his part in making the motion picture's War Effort a truly vital part of this world-wide war for freedom. END.

Prison Camp

(Continued from Page 51)

should be so suggestive of one of America's favorite movie comedians; it leads us too much to underrate him. Unbalanced he may be in the psychiatrist's sense of the term, and undoubtedly funny-looking from the American viewpoint: but that shouldn't keep us from realizing that he is a very dangerous opponent, who will demand every bit of our own strength, force and intelligence to defeat.

After this, I was one of the official news-camera crews assigned to cover first the Czechoslovak "incident," and later the opening of the war in Poland. Though we were photographing military operations in the field, we worked as civilians; it was only later—after the Polish campaign—that the Nazi news cameramen became soldiers.

Interestingly enough, for our work in the field we used largely American camera equipment—Eyemos taken over from the various newsreels, and occasionally a DeVry. Though the Germans had developed some types of hand-held movie cameras which, on paper at least, were excellent, they seemed to prefer the ruggedness and dependability of the American cameras for their field work.

It was during the start of the Polish campaign that the Nazi officials discovered I was an American. And let me assure you that Americans—particularly cameramen—were most decidedly not wanted as witnesses to what the Wehrmacht was doing. I was summoned to Berlin immediately. A year or so later I've no doubt that even though I was an American, and presumably neutral, I would simply have disappeared into a concentration camp. As it was, I was given the choice of going to a concentration camp or getting to H--- out of Germany within eight hours.

I left—gladly and quickly. It gave me an excellent opportunity of doing something I'd wanted to do—but couldn't—for some time.

Travelling the usual roundabout route of the wartime refugee, I finally got back to Paris. There I began to try to find some way of doing my part in the war. As I've said, I had already seen enough in Czechoslovakia and Poland to make me want to even things up with the Nazis. I tried to enlist in the French Army. But no, I was an American, and that might cause international complications. Then I tried the Foreign Legion. Being an American

was no bar there, but I found I would have to enlist for something like ten years, and once in, there was no guarantee I'd be sent against the Germans; much more probably, they said, I'd be sent off to North Africa, or Syria, or even to French Indo-China for garrison duty. Somehow, keeping the Arabs or the Annamites in order didn't appeal to me. . . .

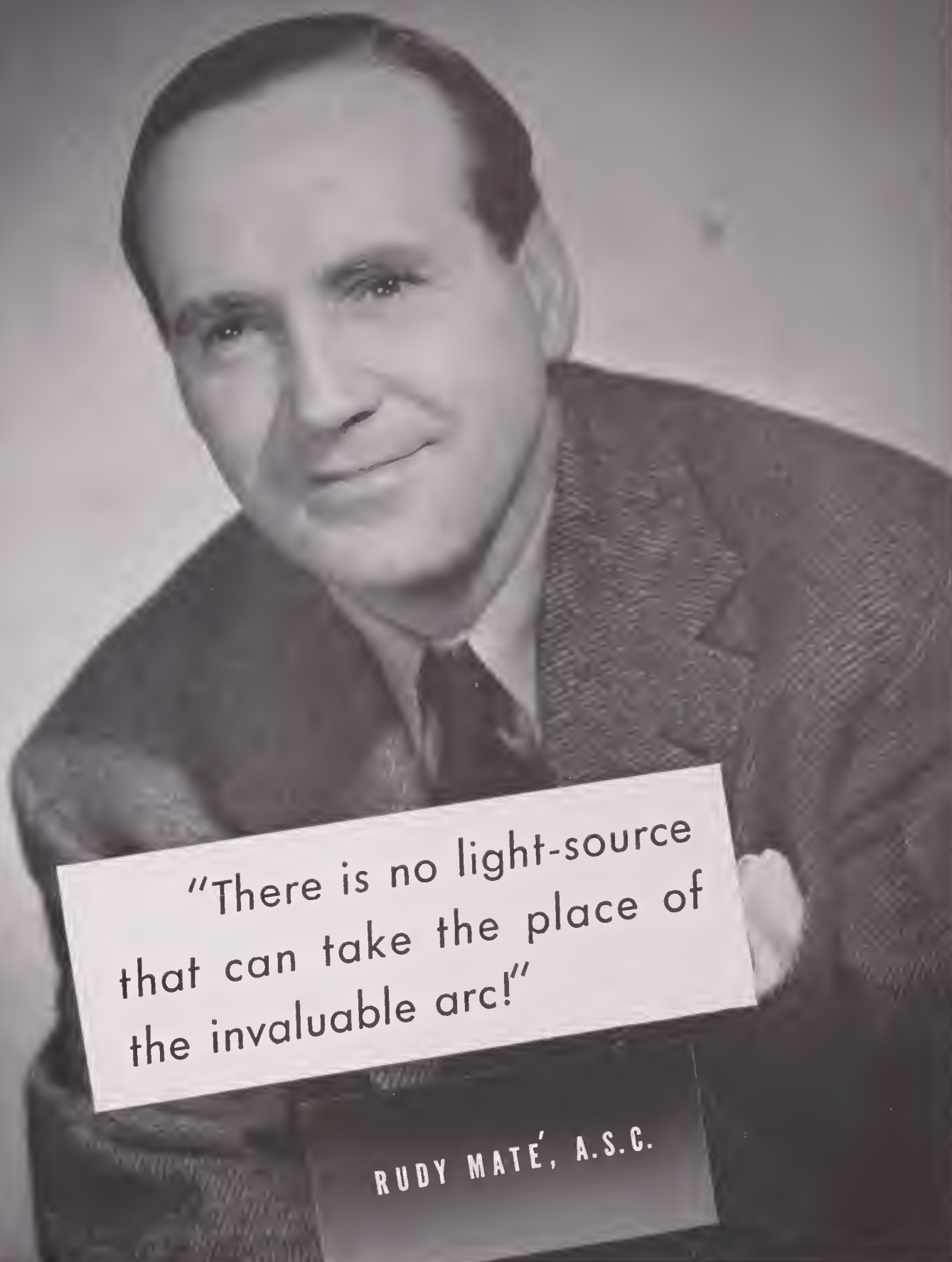
Finally I learned that a Franco-American Ambulance Corps was being organized. Driving an ambulance is technically non-combatant work, and as such was a perfectly proper occupation for a citizen of then-neutral America. I'd be up at the front where the Nazis were, and, well—after all, one never knows just what opportunities Lady Luck may bring. I enlisted as an ambulance-driver, and went off to the front at the wheel of a nice, new Dodge ambulance.

Those first several months of the war were what some people called the "Bore War," while France sat in fancied security behind her Maginot line, and the Germans mopped up unfinished business in the East. But there were skirmishes—little, unimportant actions that rated no more than a curt line or two in the newspapers. Just minor skirmishes. But they provided work for the ambulance drivers.

And don't think because an ambulance-driver's job is technically non-combatant that it's easy—or safe, especially when there are Nazis on the other side! Our first job whenever we moved into a new sector was to learn the road between the front-line dressing stations where we picked up our wounded, and the field hospital where we turned them over to the doctors. We had to know the road not only horizontally, but vertically: even though the war was at that time in a fairly quiet stage, the road would be under shellfire from the German lines. We had to learn just where the shell-holes were, and keep up with each day's new crop.

We did most of our actual work at night. The darker it was, the better for our purposes. We would load up our wounded, head the ambulance along the road, and drive like Hell. Without headlights. If we showed a light, the Nazis were almost certain to shell us. Even if their sound-detectors picked up too much of the noise of our motors, they'd shell us on general principles.

In some sectors, the roads were so close to the front lines that when they heard or saw us, the Nazis would turn their searchlights on us. In that glare of light the big red crosses on the ambulances stood out prominently, and made a perfect target. In a case like that, all you could do would be to shove the accelerator to the floor and make the best speed you could, through, as well as around the shell-holes, praying fervently that you'd manage to avoid getting in the way of a shell or piling up in an unseen shell-hole . . . and that the poor devils who were riding with you would get through alive in spite of the rough ride you had to



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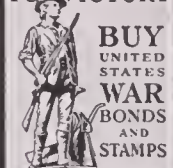
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give them.

Later on, as the Germans started their blitz against France, and the action became more fluid, we drove our ambulances day and night. Daytimes, the German aviators made it a particularly difficult job. The big, red crosses on the tops of our trucks must have made unusually inviting targets to the Nazi pilots. Any time there was a stray Jerry in the air you could expect almost any time to hear the unmistakable "brrp—brrrrp—brrrp" of a BMW engine, followed by the rattle of his machine-guns as he strafed you, and maybe bombed you as well, if he had any bombs to spare.

If you could, you'd stop and try to get your wounded passengers and yourself out and under the truck, where you had at least some protection. Sometimes you could do it. At other times—especially if your passengers were too badly wounded to get out—you just kept on going as best you could . . . hoping. I've often seen ambulances come limping in, riddled with machine-gun slugs, and with a cargo of dead men. Sometimes you just found the ambulance standing in the road, or lying in the ditch, its passengers and driver both dead. And it didn't seem to matter to the heroes of the Luftwaffe that often enough the wounded men in the ambulance might be Nazis as well as Poilus or Tommies. . . . I guess any unresisting target was fair game to the supermen from beyond the Rhine.

And then came the beginning of the end, when the Nazis broke through at Sedan. For us there began what seemed a nightmare that would never end. Retreat—retreat—retreat—each day amid greater confusion and a dull, gnawing spirit of hopelessness.

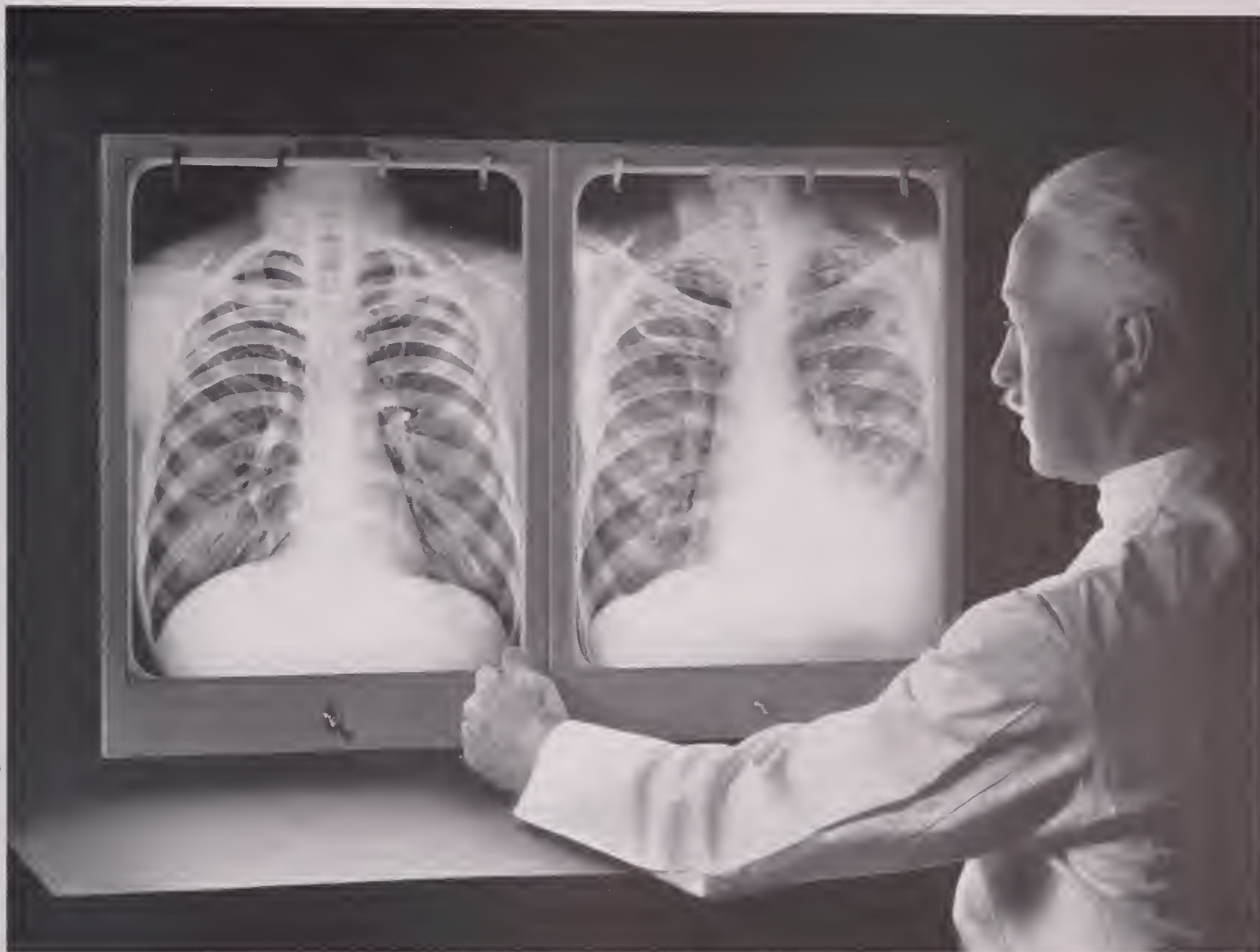
Finally I found my unit cut off from the army we were supposed to be serving, and headed toward Bordeaux. I was a Sub-Lieutenant then, in charge of twenty-five ambulances and their crews. And I wanted to get them through to Bordeaux before the Germans came.

We weren't far from our goal when we found ourselves running too low on gas to get there. We stopped to take stock of our situation; between the lot of us, we had about enough gas to enable one ambulance to press on ahead to a city where we could get the fuel we needed to take us to our goal. So we drained the remaining fuel into the tank of one of the ambulances, and the rest of the fellows crowded into it to press on while I stayed behind to stand guard over the other trucks. I never saw any of those boys again. I suppose they ran into the Germans, who were in front of us as well as behind and on both sides of us. But in due time I saw the Germans, and found myself a prisoner.

So back to Paris I went, as a prisoner of the Nazis. Since I wore the uniform of a French officer, I was at first lodged in the comparative luxury of one of the city's criminal prisons. That wasn't too bad. Most of us military prisoners still

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had some of the money we had had with us before our capture—but we weren't allowed to buy anything with it. The French criminals, who remained in the prison with us, had the privilege of buying things through friends on the outside—but no money to do it with. The obvious solution was quickly reached; the French jailbirds bought us what we wanted—with our money, of course—and saw to it that their own wants were taken care of, as well. They were quite honest about it, too; I don't think they charged any of us more than three or four times the actual cost of our purchases. After all, one expects to pay more under such conditions for the little luxuries of life. . . .

But this comparative idyll was soon spoiled. The Nazis again discovered that I was an American. Obviously, then, I had no place among these French prisoners. So I was transferred to a prison-camp for English officers.

The less said about this, the better. The Germans, you know, have no love for the English, and in this prison they made use of every opportunity to prove it. The winter of 1940-41 was one of the coldest in many years. Our sleeping quarters were well ventilated; our beds consisted of bare wooden benches. Such luxuries as blankets, pillows and heating, of course, were much too good to be lavished on Englishmen . . . we slept uncovered, on the bare benches, and liked it. By way of food, our captors would bring us in a bowl of colorless, lukewarm liquid. If it had a few

potato-peelings floating around in it, we knew it was supposed to be soup. If it had an occasional—oh, so occasional!—shred of meat of questionable antecedents in it, we understood it was supposed to be stew. It tasted the same either way, and contained just as little nourishment. I don't know how we would have survived if the French villagers hadn't occasionally managed to smuggle us a few crusts now and then from their own all too scanty store. . . .

Eventually, through the efforts of the American Consulate and others, I found myself back in Paris, a free man. There's no space here to tell of my battles with Vichy-French bureaucrats who obviously considered that while I might have been good enough to bleed and die for France, I most certainly wasn't good enough to obtain a ration card without which no one in France could eat or clothe himself. But finally I managed to make my way out of France, and back to Free America. . . . I'll never forget what a sight the Statue of Liberty was as the ship steamed up the harbor towards New York's skyline.

Since then, I've had to spend a good deal of my time building myself up. Before that prison camp episode, I wasn't such a bad physical specimen. Today, you'd probably take one look at me and mentally classify me as the perfect "4-F." I'm not surprised that the Army doctors turned me down half-a-dozen times when I tried to enlist; malnutrition and lack of vitamins do that to you. But finally I managed

to make the grade for enlistment in the Enlisted Reserve of the Signal Corps.

This last fall I passed through the training-school the A.S.C. and the Academy have been conducting for Signal Corps cinematographers. My past experience had given me a good deal of practical preparation for the job, but I found that men like John Arnold, A.S.C., and his staff could teach me a great deal which will make me a much better combat cameraman for Uncle Sam than ever I was for UFA.

And now I'm waiting my call to active duty as a U. S. Army cameraman. I don't know what sort of a job it will be, or where: but I hope it will take me up to one of the fronts across which I'll again face the Nazis. If it does—well, an Army cameraman is a soldier first and a cameraman incidentally, and maybe luck will be with me again and give he a chance to do some shooting with something besides a camera! END.

Free Wheeling

(Continued from Page 57)

resort country, with the high Presidential Range climbing into the sky.

Here we seemed quite alone—rationing of tires and gas had made its inroads on the traffic, and summer tourists were very, very few. Untouched forests and grand mountain views greeted us on every hand as the miles rolled behind. Usually at 11 a.m. it became necessary to stop for Douglas's nap. If we neglected to do so, very soon he would fall asleep in his seat! So time out for rest for all, or to wander nearby . . . often to make movies.

Off again, we entered the Franconia Notch Region not far from Bette Davis's Sugar Hill home, wound around mountain-held Echo Lake down to Indian Head to enjoy the comforts of cottages by a lake and stream.

One day we pedalled only 11 miles, another 22. Our record day of 51 miles was accomplished in a little less than 12 hours. Another adventure came while hiking a long up-grade, a trucker engaged in hauling pulp logs asked us if we'd like a lift.

We accepted. So onto the empty truck we piled, bikes and all. You probably realize how well mountain folks know their own country so I need not mention that we slipped around some of the corners, rose off the "deck" often when rough spots rolled under the heavy dual wheels, and arrived at a junction in less than a half-hour, having 15 miles to our credit! We managed to thank our host but we did not feel fully gathered together for some time after his truck had rumbled out of sight!

Turning off onto a spruce and balsam lined road we filmed shots of ourselves pedalling along. After a bit of practice, it is not so difficult to take a scene or two from your bike, one-handed, of the rest of the party as you catch up or ride

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Scenes of our sojourn on Lake Winnepesaukee and Winnisquam took us from wheels to boating, bathing and fun in the sun.

In two weeks we rode 210 miles on the bikes and 400 miles by train and withal brought back a film record which will keep alive our summer of 1942 for the duration, and long years after. And we discovered something we're sure many other cinefilming cyclers will also learn as time goes on: that when you tour the country in leisurely bicycle fashion, you really see more of the country than you do when you whiz through by motor at the usual pre-war touring speeds. You find yourself taking better advantage of picturemaking opportunities, too, for things you'd never notice (at least not enough to make you stop the car) when driving through at fifty or sixty per become much more evident when you approach them at bicycling speed—especially as they offer an inducement to stop pedalling for a moment while you make pictures! END.

Sound Camera

(Continued from Page 56)

film, a four-to-one reduction lens mounted in a microscope adjustment rack was placed between the slit and the sound roller.

The recording lamp was mounted in a lamphouse fitted with suitable condensing lenses and placed at the back of the recording unit. A ruby pilot-light was mounted at the left-hand side of the

box to indicate whether or not the recording light is working.

To insure constant speed, a sound-camera must of course be motor-driven. Working in houses, and in most industrial plants and offices, the regular 110-Volt alternating current from the city power lines is usually available, so a standard 110-Volt synchronous motor is generally used.

But making exteriors "on location," this 110-Volt A.C. is not always available, so a second motor, operated by direct current, was also provided. It is interchangeable with the A.C. motor. In order to get constant speed from this D.C. motor, a speed-control was mounted on one end of the shaft.

On location where 110-Volt power is not available, the D.C. motor is quickly put into place, and then two 12-Volt batteries supply all the power necessary to operate the camera, amplifier and exciter-light. A 6-Volt converter supplies the 110-Volt current necessary to operate the amplifier.

As will be seen from the illustrations, a belt-drive transmission is used to convey the drive from the motor to the camera. The motor is belted to a pulley on the side of the sound housing. From this, a second belt runs upward to a large pulley equipped with a flywheel and fastened to the camera's hand-crank shaft by a bracket which attaches to the screw sockets originally provided to fit the auxiliary gearboxes, motor-drive unit, etc., to the Model A. From this point a third belt extends upward to drive the take-up on the external, 300-foot magazines fitted to the top of the camera.

The entire outfit—camera (including the recording assembly beneath it), motor, and all, are mounted on a rigid steel plate base which is in turn attached to the tripod. The tripod itself was constructed along professional lines, and is as large and rigid as though intended for a 35mm. outfit. In order to give a solid support to the weight of the camera (60 lbs.) and to insure steady panning, a heavy thrust bearing is used in the tripod-head.

It must be admitted that this outfit lacks the streamlined professional finish of the commercially marketed 16mm. sound-camera outfits. With its various externally mounted gadgets it has rather the look of some of the very early, more or less experimental 35mm. single-system sound cameras. But even though a choosy industrial designer might find fault with its "home-made" appearance, it works—and very successfully. We proved that in the making of a full feature-length Western picture in Kodachrome, with lip-synchronized dialog, sound-effects and musical background. After all, audiences don't judge a picture by the appearance of the equipment that made it, but by the quality of the picture they see on the screen, and the sound they hear from the loudspeakers. And when, as in this case, you can add to successful performance the pleasure of having planned and made the outfit yourself—well, what more could you ask? END.

48 Years of Home Movies

(Continued from Page 60)

but because at last they had the three great essentials without which home movies could not be successful. They had the safety of acetate-base film. They had the economy of narrow-gauge film and the reversal process. And they had the simplicity of almost foolproof design and spring-powered operation.

At the same time in France, another home movie standard which also incorporated these essentials was born. This was the 9.5mm. "Pathex" system introduced by Pathe. This system also used reversal film, but of 9½mm. width, and single-perforated, with the single perforation in the center of the film between the frames, much like that of the earlier 17½mm. "Biokam" (Figure 4).

Due to the still narrower width of the 9.5mm. film, the "Pathex" system was even more economical than 16mm., yet because of the center perforation principle, the 9.5mm. frame was only very slightly smaller than the 16mm. frame.

This standard was introduced in this country about the same time 16mm. was; but because the American Pathex organization was working far from its base of supplies, and could not service the cameras well with either repairs or film, it never became popular here.

On the other hand, it has become extremely popular abroad, not alone in Europe, but in most other foreign regions, including Asia, Africa and Australia. As recently as two years ago, a survey made in England showed that there were more 9.5mm. outfits in use there than the combined totals of 16mm. and 8mm. equipments. It may surprise some American readers to know that European users of "nine-five" have for

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several years had color, in the form of 9.5mm. Dufaycolor, and even sound-on-film available to them.

The 17½mm. standard has by no means died, either. You will remember that when the Pathe organization launched their "Pathescope" 28mm. standard, they were more than a little influenced by a policy of establishing a standard which would be exclusively their own and would not only provide an outlet for their own films, but would also prevent the use of any but Pathe films on their equipment. So as they saw the dawning possibilities of 16mm. for educational use, the Pathe executives dragged the old split-35 standard of 17½mm. from its grave, and established a system known as the "Pathe Rural."

This is strictly a matter of making projectors—so far as we know, no 17½mm. cameras have been marketed commercially for more than twenty years—and of providing both educational and entertainment films for them from the Pathe libraries. So successfully has this

system been promoted, at least on the home grounds, that the 17½mm. "Pathe Rural" is the standard of the French educational system, and Pathe, of course, has a virtual monopoly on supplying both films and equipment. Naturally, during the last eight or ten years, 17½mm. sound-on-film projectors and films have been available.

And since the birth of 16mm., twenty years ago, another amateur standard—8mm.—has been perfected. It brought with it further drastic reductions in expense and yet, thanks to a decade's progress in camera, projector and lens design and emulsion chemistry, surprisingly little loss in photographic quality.

So today—almost exactly twenty years after the introduction of 16mm. as the "ideal" medium for home movies, we find a new and yet smaller film-standard taking its place as the home movie standard, while 16mm. goes increasingly professional. And why not, since direct 16mm., with modern emulsions and modern high-powered incandescent and arc projectors, can compete on almost even terms with 35mm. on even the biggest theatre-size screens, and if necessary be enlarged to 35mm. prints for theatrical or commercial use, while 8mm. reduces the costs of home moviemaking to less than one-tenth that of 35mm.? END.

Phil Tannura

(Continued from Page 52)

apprenticeship in the studio's motion picture film laboratory, learning how to mix chemicals, to wind and unwind film from the developing-racks and drying drums, and eventually how to develop negative and to make prints.

After a thorough grounding in this, during which, in a brief period of a few months, he worked his way through all the various departments of the lab, he felt he was at last ready to go out on the set and begin to learn how to shoot a movie camera. And he began to pester his chief for a chance to do so.

"That," he says, "paid dividends. The third or fourth time I hit him for a camera job, my chief gave me a reply I didn't expect. 'You're a persistent little son-of-a-gun, aren't you?' he said. 'I'm going to fire you . . . Come back

tomorrow and we'll see if we can make a cameraman out of you!'

"So the next morning I reported for work as an assistant cameraman. I spent about six months at that job, and then right in the middle of a picture the cameraman I was assisting fell sick. In the ordinary course of events, some other First Cameraman would have taken over the picture and finished it. But the man I'd been assisting had other ideas. 'Give Little Phil a chance,' he said. 'He'll finish the picture darn near as well as I'd do.'

"So there I was, a full-fledged First Cameraman. I don't know whether or not I finished the picture as well as my former chief would have done, but at least I finished it, and everyone seemed pleased enough to keep me on as a First Cameraman.

"At that time the Edison Company had quite a variety of irons in the fire. One of them was making educational movies for Thomas Edison's close friend, Henry Ford. And as I was the newest and youngest cameraman on the lot, making these pictures fell to me, in between grinding out my quota of the Edison Company's lesser features. Eventually, I was assigned almost exclusively to making the Ford Educationals.

"In that job, I had a lot of interesting experiences. I travelled all over the country, wherever material for these educational reels was to be found. And I had the unique experience of being the only official cameraman assigned to cover the mission of the famous Ford 'Peace Ship' which, carrying a tremendous cargo of high-minded notables, went to Europe in 1915 in the altruistic hope of ending World War I in time to 'get the boys out of the trenches by Christmas.'

"Of course that mission failed, just as a similar mission to end this war before the final defeat of Nazism and all it stands for would fail today. But I had chalked up several months of new and valuable experiences which were a liberal education to me.



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"And when I got back to the studio, I found a new management in charge. The new managers were beginning to realize that motion pictures were an art as well as a profitable form of money-making entertainment. They were all for new ideas in everything.

"That suited me right down to the ground. Ever since I'd found myself as a First Cameraman, I had experimented constantly. Under the previous, more conservative management, that had gotten me in the 1915 version of the dog-house often enough. But with the new management, it set me solidly in favor. Almost before I knew it, I found myself the 'ace' cameraman of the studio, getting assigned to the biggest and best pictures.

"As the studio chief put it, 'I like you, Phil, because you're always trying for something new. When you fail, I'll admit it's sometimes pretty terrible—but when your experiment clicks, it's often brilliant. And you seem to succeed oftener than you fail.'

"Then came America's participation in the War. I tried to get into the Marine Corps, but got turned down—officially because I was a few inches too short to make what they considered a good leatherneck, but actually, so I learned later, because some of the studio brass hats pulled some political strings to keep me in mufti. Then I tried the Signal Corps, and was accepted. The next few years were devoted largely to grinding a camera as a member of the Siberian A.E.F.

"When I got home after the armistice, I ran into the problem I hope our boys who have gone into the Service in this war won't encounter: I couldn't get a job. I'd been off the screen for nearly three years, and everyone had forgotten me. Still in uniform, I tramped from one studio to another, and everywhere they gave me a reception that indicated clearly that they thought I was just another ex-soldier crank-turner who had never had any studio experience.

"The first job I got was as cameraman for an exploring expedition the Brazilian Government sent out to find a fabled 'lost city'—if it was still there. I was on this expedition for more than six months, and later the officials told me I was the only North American or European ever to have gone so far into the jungles. We penetrated even farther

than Teddy Roosevelt did on his celebrated expedition to the River of Doubt. Starting from Manaus we reached the Matto Grosso, and then worked East and North and finally back to Manaus.

"When I got back to New York, I found I was still a forgotten man as far as the studios were concerned. Finally I landed a job—as Second Cameraman for a man who before the war had been my assistant!

"Once I got that foothold, I managed in time to work my way up to the position of First Cameraman again. And in the early 20's, as I saw the industry moving out to the West Coast, I, too, decided to move to Hollywood.

"There it was another battle to gain recognition. I did independent 'quickies' and Westerns for producers and stars who are now forgotten. It was a period of working heartbreakingly long hours with indifferent equipment, and for precious little money. It was a saying in those days that if a 'quickie' had a seven-day shooting schedule it meant seven days and seven nights of shooting; and that gag wasn't very far from being the literal truth!

"It was my fondness for experimenting that finally took me out of that class of work. In those days a Western usually meant ultra-crisp photography with *f*:64 definition and a soot-and-whitewash contrast which had to be seen to be believed. I tried the experiment of shooting for softer, more pictorial quality. I opened up my lens, even on exteriors. I used reflectors more, and played around with filters.

"And one day Charles Ray—one of the big stars of the day, and at that time producing his own pictures—happened to catch one of my obscure little Westerns.

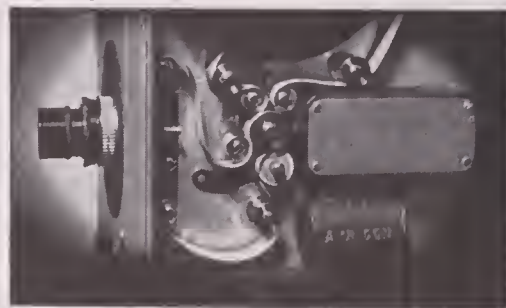
"The next day I got a call from him. 'If you can get that sort of quality in Westerns,' he said, 'you're good enough to shoot for me.' And up to the time he retired from the screen, I did."

From there, Tannura went to the FBO Studio, the forerunner of today's RKO. He stayed there until after the coming of sound in 1929-30.

Then producer Robert Kane came to him with a proposition to go to Europe. At that time, remember, sound had killed the world-wide foreign market. Previously, all that had been necessary to fit a picture for foreign distribution had been to replace the English titles

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with titles printed in the language of the country where the film was to be shown. That way, the silent screen could effectively "speak" any language—French, Swedish, Hungarian, Turkish, Arabic, Bengali, or what have you. But when the actors really began to speak, and the words came out in English from a sound track, it was different.

Kane had the idea of going to Europe to make foreign-language versions of American movies, using casts of foreign actors. He wanted Tannura to go with him as his right-hand man. Later "Little Phil" learned that a very important contingent factor in obtaining the financing for the deal had been getting Tannura to go with it!

So, in 1929, Tannura and Kane left Hollywood for Europe, armed with a contract to make foreign-language versions of Paramount's Hollywood-made films.

In this job, Phil Tannura found himself serving as a great deal more than a mere cameraman. First of all, he was Production Manager of the studio, and saw to the plant's physical and financial operation. He scoured Europe for players who could be cast in the parts played in the Hollywood versions by Jeannette MacDonald, Buddy Rogers, Kay Francis, Paul Lukas, and the rest of Paramount's stellar personalities.

In his spare time, he directed and photographed the pictures. Often he would make as many as 14 different foreign-language versions of a single picture.

This work was done in Paris. At first Kane and Tannura worked in one of the many French rental studios, renting stage space, offices, cutting-rooms, and everything else needed for production. But so successful was their work that before long the Paramount foreign executives decided that they would build their own studio. And Phil had the task of laying out and building Paramount's French studio at Joinville-sur-Seine, and of seeing to it that it was equipped with the best of modern production equipment. Then for several years he had charge of the Joinville studio's operations, which were on a constantly increasing scale.

In time, the physical and nervous strain of the responsibilities of managing the studio, producing the pictures and in addition directing and photographing most of them, proved too much

for Tannura. He asked to be relieved of the load, at least while he rested up for a while.

So, by way of vacation, he was sent to England to photograph one of Paramount's quota of English-made features, while somebody else shouldered the responsibilities of producing and directing it.

This was a lucky move for him, for while he was in England two developments occurred which eventually put a quietus to Paramount's foreign-version production. One of these was the development of the technique of "dubbing in" voices, by which other actors could record the dialog in appropriate foreign languages to synchronize with the lip-movements of the English-speaking Hollywood players.

This in time was developed to such perfection that even when you saw a "dubbed" version of a film featuring players you knew could speak nothing but English, the illusion and synchronism were so perfect you felt almost certain your actor had suddenly learned how to speak flawless French, or Hungarian, or Arabic.

The second was the fact that Paramount, having over-expanded at home, was forced into bankruptcy, and had to suspend its foreign production operations.

So until shortly before the outbreak of World War II Tannura remained in England, as one of Britain's top cinematographers. He played an important part in the planning and construction of Alexander Korda's big studio at Denham, and of several of the other modern British studios, as well. He was one of a group of American cinematographers who played an important part in the re-birth of the British film industry, and especially in the fight to bring both technical standards and salaries for British cinematographers into closer parity with those in Hollywood.

In this, he remembers, one of the biggest obstacles was provided by German cinematographers. Some of them were refugees from the Nazi terror, but others—well, looking back on it, he wonders. They came to England from the studios of Berlin, and were always ready to take any possible job away from an Englishman or American at half-price salaries . . .

Since his return to Hollywood Tannura has been almost constantly under contract to the Columbia Studio, and assigned to direct the photography of some of the firm's most important features. There's quite a bit of rivalry between some of Columbia's top feminine stars as to who should be photographed by Tannura.

And in between the big pictures, he's received assignments to plenty of Columbia's short-schedule, low-budget program films. And while some cinematographers try to dodge these "B" productions, Tannura rather likes them. "They're hard work," he says, "but they give you a chance to experiment in ways you can't do on the bigger 'A' productions.

"I don't mean by this that I take these less spectacular assignments as an opportunity to go hog-wild on photographic experiments. That wouldn't do at all, for a badly-photographed program picture stands just as much to a cameraman's discredit as a badly-photographed 'A' production.

"But on the big productions, you know there's such an investment involved in production costs, stellar reputations, and the like, that you tend to be cautious. On 'B' pictures, it's different. There isn't nearly so much at stake, so once you've gotten an idea worked out in your head to the point where you feel it's practical, you can afford to try it out in actual production. If it works out as expected, you've added something valuable to your professional repertoire; if it doesn't quite ring the bell, there's not too much lost as long as the scene is still commercially usable.

"To my mind, the so-called 'B' pictures and short-subjects ought to be recognized as the industry's proving-ground for both new talent and new ideas. Plenty of 'A' picture acting and directorial talent have already come up from these stepchildren of the industry. But all of us—producers, writers, directors, and cinematographers—could do a lot more than we are doing to make the program films a proving-ground for new ideas as well. END.

P-38

(Continued from Page 49)

ley matched-lens finder to the Special. We made a C-shape adapter to fit around the rear of the Special. The bottom of the C screwed onto the tripod in the usual way, and the Special was, in turn, fitted to this bracket.

On the top of the C we mounted my Akeley matched-lens finder with its pivoted eyepiece and magnifier. The mount was arranged so that the lens of the finder was accurately aligned

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directly above the camera lens. Since we were working at infinity focus, once we got the two units aligned for infinity, we didn't have to worry about finder parallax. And the construction of the bracket left the magazine side of the camera clear, so there was no interference with quick changing of magazines.

Matching the lenses of camera and finder for this type of infinity-focus camerawork was fortunately fairly easy. The horizontal angle of the 50mm. lens which is the "normal" lens in 35mm. work is 25 degrees; the angle of the 25mm. lens which is the correspondingly "normal" lens in 16mm. work is 21.2 degrees. So for our purposes a 50mm. (2-inch) lens in the finder served quite satisfactorily when shooting with the 25mm. lens on the Cine-Special. In the same way, when we used a 2-inch lens as a telephoto on the camera, we used a 4-inch lens on the finder. This gave me, so far as the finder was concerned, the same convenience of operation I'd been accustomed to in my 35mm. work.

The choice of a tripod was another problem. I used my regular Akeley gyro head mounted on a high-hat which was in turn bolted to a wooden support rigidly mounted in the open door of the camera plane. But—the Akeley head was designed to work with a much bigger and heavier 35mm. outfit. When the little Cine-Special was placed on it, there literally wasn't enough weight there to offset the pull of the counterbalancing springs which were tensioned to hold a 35mm. camera in perfect equilibrium. You had to watch it constantly or those overly-powerful springs would jerk the camera downward. And in starting and stopping on pans and tilts, the over-powered springing, designed to compensate for the weight of a heavier camera, would give you jerky pans if you weren't everlastingly careful.

The perfect solution would have been a tripod designed for professional use with a lightweight camera—but there wasn't one available. A lightweight friction head like Frank Zucker's "Professional Junior" would have made things a lot easier for us . . . and I kicked myself enthusiastically when I remembered that while I was in London before the war I had seen—and almost bought—a lightweight gyro tripod specially made by Vinten to go with a lightweight camera like the 35mm. Newman-Sinclair I brought back with me. Several times, after hops where we had to follow particularly difficult action, I had Flinsky deliver a couple of extra kicks on my rear for having been so foolish as to leave that tripod in London!

But once these problems were out of the way, the rest of the job was a pleasure, for Lockheed and the Army certainly gave us everything we could possibly have asked for. Our camera ship was a speedy Lockheed "Lodestar" transport—first cousin to the famous "Hudson" bomber—and our subject, of course, was the P-38 "Lightning" pursuit, flown for us by Lockheed's Chief Test Pilot, Milo Burcham, who is with-

out doubt the best P-38 pilot in the world. He ought to be—he's test-flown practically every P-38 that has come off Lockheed's busy production lines!

The Army made arrangements so we could fly our scenes anywhere we wanted to along the coastal airway between Los Angeles and San Diego, and inland into the Mojave desert, and at any time we felt the weather was right for our purposes.

Producer Burden cooperated, too, by letting us wait until we felt the weather conditions were just right to give us perfect shots. I've seen major-studio production executives with schedules and budgets twenty or thirty times as generous as his complain bitterly over that waiting for weather. But not Shirley Burden! He wanted things *right*—and he knew that having the right

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atmospheric and cloud conditions meant the difference between getting just ordinary aerial scenes, and getting perfect ones.

His patience was well rewarded. Right after the Christmas holidays we had a little spell of rain, followed by several days of absolutely perfect weather for aerial camerawork—clear, blue skies with just the right amount of pictorially puffy, white clouds, so that we could get over a real impression of the “Lightning’s” speedy flight. We flew and shot like mad while the weather lasted, and got everything in the bag. I don’t think the scenes could have been any better if we’d had Technicolor and a million-dollar budget.

In this part of the work, I can’t say enough about Milo Burcham. I always knew he was a fine pilot—but I didn’t really appreciate just how good he was until I saw him put that P-38 through its paces.

In all that we were helped immeasurably by having an intercommunicating telephone on the camera-ship, so that we could talk freely to our pilot, and two-way radio so that we could talk with Burcham while we shot. Of course we always planned every evolution out carefully before taking off—usually diagramming out each shot, and making sure that everybody concerned knew just where the camera-ship and the P-38 would be every second, and just what flight path each would follow.

I couldn’t help thinking what a big improvement it was over the way we worked in the early days of air movies, when we strapped ourselves into open-cockpit planes, with no way of communicating with either our pilot or the pilot of the other ship, and had to trust solely to pantomime, planning, and big gobs of luck to get our shots and bring us back with a whole skin!

Yes, there’s a lot of water gone under the bridge since those early days of “Hell’s Angels” and “The Great Air Mail Robbery.” There’s a difference in our movie-making materials and methods, and in the planes we fly. And there’s no less of a difference between the reasons for making these various pictures. I was proud to have worked on Hollywood’s first aerial entertainment movie, and on its biggest ones. But I’m a good deal more proud of this little 16mm. job which has the much bigger purpose of helping train the thousands of pilots coming from our Air Force training schools how to fly an all-American pursuit ship which has already outflown and outfought the best Germany and Japan have to offer! END.

Television

(Continued from Page 47)

collecting thirty-five cents admission in cash at the box office and American business leaders know it. Television will not have this direct income and, therefore, will not challenge the superior film product.”

“Television will, in effect, collect its thirty-five cents in cash because no matter how excessive the cost, the sponsor will simply tag the extra cost onto the sale price of his product to the consumer.”

“No matter how good television gets, people will still be gregarious, they will still like to ‘go out’ to the movies.”

“People will sit at home and drop a quarter in a meter and see a Metro, Fox, Universal, Paramount or Columbia picture transmitted from a central point over the air to sixty million people in a week’s time.”

“Theatres will have large-screen television and pay extra to see special events and news.”

And so forth, and so on.

My views, which as this welter of opinion shows, may be worth very little, are these: Television will injure the film industry just as radio has injured it—by keeping people at home looking at television programmes without any apparent, immediate cost. Television day-time dramatic material will be on a low production level—like small film company programme features, only serialized. They will cut deeply into the female matinee film audience. Television evening programs, other than dramatic shows, will not be much more of a draw than similar radio programs are at present—which is plenty, even though it hasn’t emptied the theatres.

Evening dramatic shows will not try to imitate film technique but will be billed as plays. The angle will be “Television brings Broadway to your living room.” And I think this angle may give the film industry a run for its money.

Anybody who has seen a live television play in a private home can testify that the effect could be that of the living quality of the theatre combined with the unique intimacy of the film. A well-acted, well-produced, two or three set play, aided by rear projection and film inserts, will be a devastating experience to the television skeptic.

As for the television treatment of news, it will be entirely possible to network each day’s news-events on film, with film sequences and the live personalities connected with these sequences cut into a master-controlled presentation, from twenty different locations, from coast to coast, and possibly continent to continent. In short, it will replace the present-day newsreel.

In conclusion, I think television will compete with the film industry to a considerable extent. Beyond that, and more significant to the readers of this magazine, I think the film industry will adjust itself by entering the television field—as sections of it have already begun to do. That is why I have spent so much time in this initial article on the possible functions of the cameraman in the new art. It is, I believe, an art which, potentially, can combine the special characteristics of radio, the theatre, and the motion picture into an incredibly effective whole. END.

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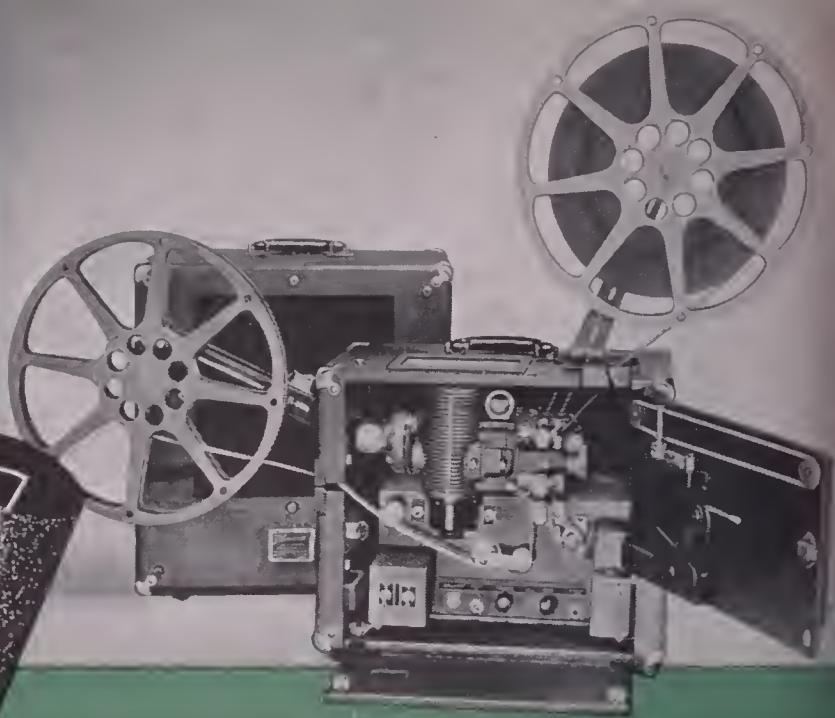
For children, movies are education. For normal men and women they are the grandest form of entertainment, reaching almost everyone. For those distraught by worry or sorrow, they are wholesome escape. For our service men on ships or in distant camps, they are a little of everything that is needed to give a man a “lift” . . . Eastman Kodak Company, Rochester, N. Y.

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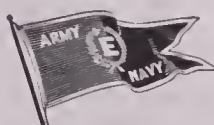
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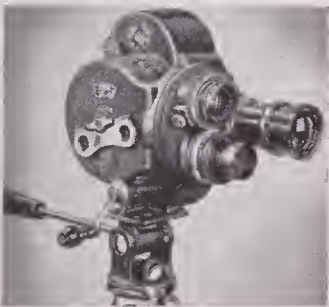
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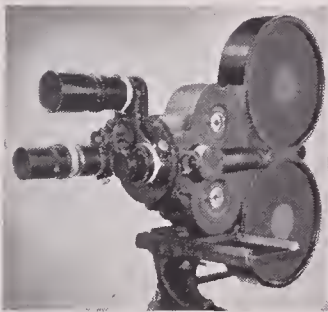


ARTHUR MENKEN, *Paramount Newsreel man*, using his Eyemo "somewhere at the front." His choice for this work is a model with the offset turret which permits simultaneous mounting, without interference, of a wide range of lenses.



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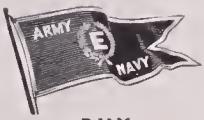


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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

MARCH, 1943

NO. 3

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The Front Cover

This month’s cover shows Nick Musuraca, A.S.C. (left) and director Richard Wallace discussing the angle for a shot to intercut with the scene they have just filmed for RKO’s “The Fallen Sparrow.” On this page, at the left, we see them making that reverse-angle. Note characteristic RKO-Cunningham blimp and the use of “Dinky Inkies” and baby spots on floor and behind the furniture. Stills by Alex Kahle.



3 things to do to conserve film

WARTIME is no time to have to do re-takes. Film must be used carefully.

So remember these three suggestions: (1) Be *doubly* sure of your exposure before you start shooting. Extra care here will save your film and your money.

(2) Be sure you're using the right film for the scene. On indoor shots like the one above, or for any *changing* light condition, use an extra-fast film. You can't buy a faster film than Agfa Ansco Triple

S Pan. In addition to its great speed, it has balanced contrast to provide desirable brilliance outdoors, yet avoid harsh effects under artificial light. It has plenty of latitude too.

(3) If you have any technical photographic questions that we can help you with . . . send 'em in. We've established an information service for you to use whenever you choose, and free of charge. Address your letter to Agfa Ansco Information, Binghamton, New York.

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TRIPLE S PAN
Reversible Film



SHOOTING ACTION MOVIES IN THE AFRICAN DESERT

By CAPT. OSMOND H. BORRADAILE*

THERE is little that I can add to what has already been printed about military cinematography, but, nevertheless, here are a few of the difficulties I experienced in trying to get a photographic war record. Although I held an Army commission, I was very fortunate to have seen action in the three branches of the service, all of which offered different problems for the cinematographer. Those of the Army, I consider the most numerous and varied. If the cinematographer is permanently attached to one unit he is well established and his problems are fewer, for he has not to worry about such matters as rations, transportation, winning the good will of the senior officers (without which he will not achieve much during a campaign), but his scope is limited.

When a roving cinematographer such as I was visits a unit—usually because he has been tipped off that interesting things might be happening there—he must, first of all, be able to definitely prove his identity; secondly—and this is not always an easy job—to convince the Commanding Officer of the value of propaganda and of the importance of getting a historical record; a persuasive line that I often found successful was that the folks back home may have a chance of seeing his men in action on their local screen.

* The author, Captain Osmond H. Borradaile, was for many years a member of the A.S.C. when he worked in the Hollywood studios before returning to England. Since the outbreak of the War, he has been on active service as an officer in the British Army Film Unit. Seriously wounded filming a convoy en route to Tobruk while under siege in the fall of 1941, he has been invalided out of service and is now with the Canadian National Film Board. THE EDITOR.

This procedure is always easier if the visitor can assure his host that he has an understanding of military behavior, and will not unnecessarily jeopardize the lives of his men. Another point of importance is that the visitor is self-sufficient as to rations and transportation. To give an idea of some of the problems the cameraman has to be prepared to face, I shall recall a typical Western Desert incident.

Things had been comparatively quiet, when suddenly the enemy broke through the wire with two hundred tanks and three hundred supporting vehicles. I lost no time in collecting my driver; together, we drew thirty gallons of petrol, a week's rations, twenty gallons of water (which was plentiful at our base). We packed all this, together with our bedding and equipment, into our open light truck, taking care to secure it well and endeavoring, by the use of tarpaulins, to do the almost impossible: protecting it against the penetrating desert dust.

We drove to a famous Armoured Division where I was known and with whose tanks I hoped to go into battle—but they retired, hoping to coax the enemy into a more suitable place before giving him battle. That night we slept under the bright stars, feeling confident that with the coming of dawn we would be busy, for surely the battle would be joined that day.

Instead, dawn brought us signals that Jerry had already turned back to his own lines. No, he would not fall into our trap! This was bad news to me, so I took leave of the C. O. and with warnings and the latest information as to the

enemy's position, we set out on a compass course into the desert.

It was a hot windy day with poor visibility due to the dust. The wind was on our tail which, together with the soft sand frequently caused the old bus to over-heat and boil. At first, I was generous with our precious water for I was anxious to reach the escarpment where I hoped to leave the dust and possibly see some signs of Jerry. But we soon found that radiator much too greedy, so after filling her up again, we tried a new system of driving on our course until she began to boil, then swinging the car around into the wind. Slowly, she would cool off enough to allow us another run of perhaps a mile. This was slow going and it was a tired, dusty pair of soldiers who finally reached the escarpment and found a trail up just before sunset.

Here we found tracks leading west; we identified them as British, so we followed them. As darkness overtook us, we drove into a wadi and were challenged by a friendly sentry. After I had established by identity to the satisfaction of the Intelligence Officer, I was paraded before the General—a plucky little fellow who a few weeks later was captured and succeeded in escaping, leading many of his men back through the enemy lines.

After winning the General's confidence and assuring him that I had my own water supply and would not therefore encroach upon his—which was, at that time, nearly one half gallon per man per day for all uses: washing, cooking and drinking—it was agreed we would start off at dawn, hoping to find some evidence of the invaders.

A few miles beyond the wadi we picked up German tank tracks; these we followed until climbing out of a little depression our two cars stopped short for, coming over a rise and bearing down on us were two armoured cars: Friend or foe—? We grabbed our rifles. On seeing us, they separated, took up position of advantage and stopped.

We scrutinized each other through our field glasses; satisfied we were friendly they closed in on us. I grabbed some pictures of them as they came alongside, as they had a couple of prisoners aboard,



Italian airmen whom they had just picked up.

These armoured car boys told us that our bombers had caught a concentration of Jerry tanks refuelling at a point ten miles to the south and it was in that direction that I stood the best chance of meeting up with some Jerries. As the General was more interested in spotting new gun positions, we parted company.

Yes, the bombers had had a bit of sport, for there lay one of Jerry's latest tanks, with its mutilated crew still smoldering away, giving off that strange, unpleasant smell so distinctive of human flesh. Besides the tank, there were two burnt-out petrol lorries, two ammo-carriers and a staff car. Too bad I didn't get a shot of that! But twice we had to "lie doggo" as enemy planes came over, though I could never resist a shot at them with my rifle.

While we were trying to scrape together the remains of a German and bury them, another armoured car drove up and told us that all the Jerries were now back behind their own wire except for a few more tanks which had been knocked out. So, feeling a bit disappointed, we set compass course and headed for our wadi where the General treated me to a drink and what at that time seemed a damn good meal.

The foregone will give you some idea of days spent by those who seek to get action shots on the desert, but fails to give all the problems for—had I been able to catch up with Jerry—the next thing would have been to get into a position from where I could photograph them without being spotted and knocked out. The shimmering heat waves, which so often prevail, make the use of long focal-length lenses impractical, and to make the job more difficult, desert warfare is a war of dispersal, and the camouflage boys are far too good at their jobs.

Learning of our coming November offensive and believing it would be from the low-flying bombers strafing Rommel's tanks that the best shots could be secured, I managed to win myself a home with a South African Squadron who were at that time flying Martin Marylands—a four-crew medium bomber.

At first, the C. O. would only allow me to go on test flights as carrying me meant that one member of the crew would be left behind—a very unpleasant and unfair situation for the kite and other crew members in the event of an

attack by fighters when all members depend on each other to do their job and fight their way home. It was however agreed that I should be allowed to take a course in air-gunnery and if my score proved satisfactory I would be allowed to ride as No. 4 (rear gunner), with the understanding that should we be attacked the guns immediately took priority over the camera. This latter stipulation I planned to overcome by camera-mounts and remote controls so that both guns and cameras could be worked together.

Long years of pointing cameras seemed to aid me in aiming machine guns, for I was very soon accepted as an air-gunner. The first few raids I went on were very interesting, but not too spectacular. They were high-level shows around the 20,000 foot mark.

We would be called before dawn, enjoy a hot breakfast in the cool air, go to the briefing tent, be given all the details of the job on hand, including information from Intelligence gained by reconnaissance flights and other means; the latest weather reports and so on. We then piled ourselves and flying kit into trucks which drove us to our planes, which had already been revved up and taxied to the take-off point.

At the last minute, we pulled on our heavy kit and climbed into our kites, me with my cameras which, in an endeavor to protect from the dust, I carefully wrapped in silk which I had salvaged from an Eyetie parachute which had not done its wearer much good. We then tested our oxygen supply and our inter-communication system, the latter a most important procedure for it furnishes the only possible means of contact between the forward members: No. 1, the pilot, and No. 2, the navigator bomb-aimer, and the rear members: No. 3, the radio-operator, and No. 4, the gunner, for between the forward and aft stations is the bomb-bay with its unfriendly load.

To me, our take-off was always dramatic. As No. 1 opened the throttle and we slowly began to move, the ground crew always gave us a cheery smile and wave. As we collected speed, the huge plume of cream-colored dust blotted them from view. Tearing along, we would see, a few hundred yards beyond the starboard wing, our tents—our desert homes—with the boys watching, slide by to be swallowed up by that ever-growing and pursuing dust monster. Our

(Continued on Page 117)



Above, left, "General Grant" tanks ride to the front on tank carriers; middle, a direct hit on a German tank; right, R.S.A.A.F. "Boston" bombers take off from a desert airfield. Below, A Douglas "Boston" of the South African Air Force bombs enemy transport and (bottom) strafes a Nazi supply-train. British Official Photos.



SPECIAL-EFFECTS IN ACTION.

Above, top row: miniature scenes of a submarine attack on a convoy from "Action in the North Atlantic." Note burning ships and "Liberty" freighter attempting to escape. Second row: left, filming a sinking in miniature; right, cameras mounted on motorboat, just above waterline, for low-angle shots. Third row: left, loading the miniature ships on flat-cars for shipment to location. Two of these "miniature" ships fill a 50-foot flat-car. Right, lowering the ships into the ocean from the pier at Santa Barbara. Note size of ship in comparison to men riding the crane beside it. Bottom: left, servicing the miniature freighter between takes; note size of ship as compared to speedboat and rowboat alongside. Right, a burning cargo-carrier goes to the bottom—in miniature. On Opposite Page: bombers and torpedoplanes attack a Japanese convoy in miniature scenes for "Air Force." Note torpedo wake (left) and airplane laying smoke-screen (right). The latter required the rigging of over 600 feet of wire to support the miniature plane.



"Special-Effects" and Wartime Production

By BYRON HASKIN, A.S.C.

Supervisor of Special-Effects,
Warner Bros.' Studio

A FEW weeks ago a group of our highest-ranking Naval officers assembled in a Washington projection-room for a private preview of a Hollywood film dealing with Naval matters, and culminating in sequences of spectacular Naval battle. When the screening was over, this audience of Naval experts congratulated the studio representatives enthusiastically. "Gentlemen," the highest-ranking Admiral present is reported to have said, "I wouldn't have believed our forces on the West Coast had time to afford you such extensive and thorough cooperation, or that your cameras could so convincingly capture the atmosphere of Naval actions."

The fact is that with the exception of a few sequences of action and background-scenes made in a West Coast Navy Yard, the Navy did *not* take time out from its vital business of conveying cargoes across the Pacific. The scenes which so won the Admiral's admiration were created in the studio by the staff of that organization's special-effects department.

This little incident clearly epitomizes one of the most important services special-effects cinematography is rendering the industry today. With our country at war, it is only natural that stories hinging to a greater or lesser extent upon military, naval and aerial battles should form a considerable proportion of almost every studio's production schedule. And while the Army, the Navy and the Air Force gladly cooperate with the industry to the fullest extent possible, under wartime conditions they cannot cooperate to the extent they sometimes did in times of

peace. They cannot afford to have two or three squadrons of fighting or bombing planes tied up for weeks at a time for picture-making purposes; and "loaning" a studio a battleship, a cruiser or two, or a flotilla of destroyers is even more obviously out of the question. The answer is that these scenes must now be staged by the special-effects department.

Similarly, climatic scenes in which warplanes are crashed, tanks destroyed, or warships sunk—whether ours or the enemy's—must obviously be done in miniature.

It may be pointed out that there are in existence documentary films photographed by military or naval cameramen, which show these things occurring in actuality, and that in addition, under certain circumstances, it may at times be possible for a skeleton studio unit to accompany a naval convoy, or to work with land or air troops in training areas, to obtain background and cut-in scenes of documentary actuality.

But this argument brings up a fact which is often overlooked even by picture-wise studio executives: the fundamental difference between scenes of actual battle, and battle scenes which must fit into the dramatic and visual pattern of an entertainment movie. Not only must the action conform rather closely to the dramatic requirements of a pre-arranged story; it must also conform to the visual and psychological patterns of the entertainment film.

The action must, in a word, be compressed to fit the screen. Modern battles, generally speaking, are rather long-range affairs. At best, the camera can only focus on a small part of the action

as a whole. A modern convoy, for example, may comprise from fifty to two, three or even four hundred freighters, transports and escort vessels; no less than 800 ships, I believe, participated in transporting our forces for the recent invasion of North Africa.

It is much easier to write about a 200-ship convoy than to photograph it. You can paint word pictures of a double or triple row of ships extending as far as the eye can see in both directions. But you cannot put it on the screen; when the ships are strung out over a distance of five or ten miles or more, no possible camera-position or lens will enable you to put more than two or three ships—half-a-dozen at most—on the screen at once. And on the screen, the images of the ships will be small—too small to convey the desired impression of actuality—and generally hidden by atmospheric haze, as well.

Suppose an aerial attack is made on the convoy. You've seen the real thing in the newsreels: it gives you a thrill because you know it *is* the real thing—but not, as a rule, because of anything you see on the screen. You see the black puffs of the anti-aircraft shellbursts. Maybe you see a tiny black pinpoint weaving among them; the narrator tells you it is an attacking torpedo-plane. You see another, slightly larger black speck in the distance, surrounded by tiny white specks. Only the narrator's voice tells you that the black speck is a 20,000-ton aircraft-carrier being dive-bombed, maybe to death.

To conform to the pattern of the dramatic picture, this action must in-

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Tempo In Industrial Films

By FRANK H. KIRCHNER

Chief Photographer, Caterpillar Tractor Co.

TEMPO can be maintained in any industrial film only if the producer can forget the "run of mine" scenes where "the whistle blows and our 7,280 employees leave the plant"—"our shipping rooms"—"our testing laboratories." These scenes may mean much to plant heads and employees, but become boring to the prospect—and for whom but the prospect was the film planned?

We would like to emphasize here that in planning "Caterpillar" films we try always to keep in mind not what we would LIKE to show, but what OTHERS would like to see.

Industrial film producers can well follow the methods of circus entertainment. Open with blare, hold 'em with short, interesting sequences and close on time. Or vaudeville's method of "making 'em whistle the tune" as they leave the theatre. Films, like preachers' sermons, can be ruined by failing to say "Amen" at the right time. It's better to have an audience wish for more than to have it "serve on fatigue duty."

Titles are important. There are three requisites for any title. First, make it easy to say and remember; second, allow the title some spot or relation in the subject; third, let the title background have attractiveness and/or action—preferably action, for as the picture first comes on the screen it must immediately get attention and hold it. Fast readers of titles will be held by the interest in the background action.

The title "War Against Waste"—our current film on industrial salvage—is easy to say and remember. Even if remembered as "War On Waste" it hasn't departed from the original thought. The title is casually mentioned once during the narration and stressed at the finale in the narrator's concluding words. These words, followed promptly by martial closing music, emphasize to every loyal person in the audience the vital need for saving and salvaging scrap.

As for the background action on the presentation and main titles, one might think of using a booming cannon to fire the words "War Against Waste" off the screen. Our subject is a war in one sense, but reclamation is a war against inanimate things—a war against the waste of metal, tools, dies, rubber, wood and paper. Thus we used for a background a pile of steel scrap upon which a huge electromagnet falls, dragging away all the metal that holds to the charge. Seeing that mass of homely, jagged pieces of precious metal makes one REMEMBER there's a SCRAP going on—suggests that the pile may contain pieces of the old lawnmower the spectator donated to his scrap drive—hints that now, at last, the donor will really see what becomes of scrap metal.

Carrying on after our main title we "surprise" the audience briefly with a few scenic shots depicting America, heretofore, as a peaceful land of plenty, with laden orchards, fields of grain, acres of cornfields and herds of dairy and beef

cattle. This leads quickly to the arrival of war and the need to conserve the nation's resources.

We then take the audience into the great "Caterpillar" plant to show how our reclamation department does its part to salvage, reclaim and conserve material of war. It is here that the film's action and interest gain momentum—tempo rises—action—speed—a big job to do—doing it.

Inasmuch as "War Against Waste" is a MOTION picture, only scenes and machines having action were selected. Scenes of the welder's sparks—grinders—moving gears—spilling oil—flying chips from revolving cutters—they all stress the act of doing something necessary to speed the day of victory.

Even though our plant covers more than 166 acres of ground and offers splendid views of endless rows of machines in operation, there is little overall interest in such scenes. Therefore, the settings are held to CLOSE-UPS. If necessary the operator's hands are included to show comparative size, but the main objective is machine action, photographed close enough to show the curling chips from the machined pieces actually "falling into the lap" of the audience.

Effective lighting has much to do with bringing out the interest of any industrial operation. Incidentally, the lights used throughout the production were the simple spot floodlights, except in a few foundry scenes and the cupola charging room where we were obliged to use our 10 Mole Richardsons. These small floods, fitted with clamp handles and built-in reflectors, were fastened to any projecting part on or near the operation, making it possible to get effects which would be impossible with larger lamps on rolling stands. Too, moving and using bulky equipment around a factory cut deeply into valuable man-hours and flat plain lighting can also drop the tempo of interest.

Camera-angles were employed with care. Use of low angles wherever possible helped bring the operator's face into the frame and heightened and strengthened scenes when the ceiling or skylight appeared in the background. Odd angle scenes usually raise the question, "How did you do that?" Any question as to "how" proves that attention has been paid, and interest has been held—and attention and interest are the goal in planning any film.

High camera-angles have their place depending on the operation. The principal thought on any angle is to see the complete operation without a pan or tilt. Let the operation do the moving—but hold the camera STILL. A held position can be framed correctly but a panned scene is "pot luck."

Camera dissolves always carry a smoothness of action and go far toward eliminating "dragged out" footage. Short action scenes dissolved together gracefully and quickly cover any lapse of time or distance. Choppy breaks are eliminated and interest is held.

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Direct-16mm. vs 35mm. for Training Film Production

By WILLIAM A. PALMER

AS has been the case with business and educational films in the last few years of peacetime, the showing of training films is almost entirely on 16mm. projection equipment. At least as far as training films for war industry is concerned, it would be hard to find 35mm. projection equipment in use. The Army and Navy in some of their more permanent posts are still using the theatrical-size film, but all have 16mm. equipment as well. All the outlying posts and bases are now using the 16mm. projection equipment for their training films as well as entertainment features.

The production of these training films by the Army and Navy, and by private concerns under contract to government agencies, is now almost entirely on 35mm. film. To many who have seen the excellent results obtained by producers of "direct-16mm." industrial films, it may seem strange that more production isn't undertaken in the medium in which the release is made—direct 16mm. Why shouldn't the various government agencies take advantage of the economies and simplicity of direct-16mm. production? Or are there any economies and simplicities in direct-16mm. production?

If one were to sit down and make a theoretical comparison of the two methods of training film production, weighing the costs, problems, and quality of results of one method against that of the other, the conclusions, I believe, would be that direct-16mm. is the proper medium. But this is no time for theoretical considerations. Like the military demands of the war itself, the demand for quantity production of visual aids to military, naval, and war industry training came suddenly, leaving no time for figuring an over-all procedure. The immediate needs after December 7 were for hundreds of films in the shortest possible time.

When the war broke there were three main groups who were able to start on a large scale training film program: the Army Signal Corps, the Hollywood theatrical producers, and the large industrial film producers. All three of these groups were completely geared to 35mm. production and had personnel acclimated to that medium. So they immediately went ahead with full speed, producing tremendous numbers of training films with excellent technical quality, reasonable cost, considering their value to the war preparations, and in general with the subject matter well handled.

If this has been the case, one might be

prompted to say, why bring up 16mm. production? Isn't everyone concerned perfectly satisfied with the present 35mm. systems?

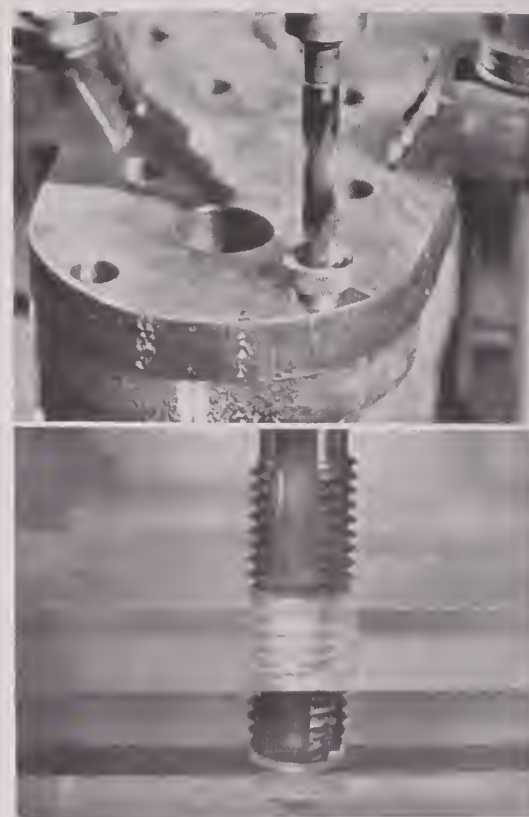
The answer to this is that the need is for many more training films, made much faster and under conditions where the lighter, fast-operating 16mm. equipment really shines. There is also the most important fact that 16mm. production has one ace-up-the-sleeve which can make all 35mm. abilities look in vain for a trump. That ace is Kodachrome.

Well, how important is color in a training film? *I believe color is all-important regardless of the subject.* I believe that color alone can add enough, giving a clearer visual impression, to make it more important even than the sound-track which is now considered indispensable.

Having thus stuck my neck out, I would like to explain more completely what I consider to be a good training film, and then maybe I can support my unqualified endorsement of color.

I believe a good training film to be primarily a *visual* aid to teaching some skill or operation. I don't think any training film made can be so good as to render unnecessary other more conventional methods of teaching, although I am aware of the experiments which have shown that educational films alone can do a better job on many subjects than can a teacher without visual aids. The great value in the training motion picture at the present time is that it can make up for the inability of available teachers to cope with the gigantic mass needs of war conditions.

The basic criticism that I have had to find with most of the training films I have reviewed is that they have been designed to cover too much or do too complete a teaching job by themselves. Their makers have considered that both the visual side and the sound-track had to be as complete as possible. I agree that the picture should be as complete as possible, but it has seemed to me that in many cases the sound-track has been so full of boiled-down information, even though well organized and presented, that it competes with, rather than aids the visual side. Since the visual side of a talking picture is the most vivid, the mind is apt to discard information given audibly, which does not apply *directly and immediately* to the scene being shown. Time and again I have seen supplementary information put in a sound-track of an advertising film simply fail to



Instructional films like these gain added value from the color-separation by which Kodachrome gives an added dimension of realism.

register with the audience; and I think the same holds true with a training film.

It is this that convinces me that a training film must have every consideration given to the clearest visual presentation possible, and that all other factors—sound-track, film effects, smooth technical work, and even cost are secondary.

Here is where I believe the case for 16mm. production can be sold. In 16mm. Kodachrome and dupes therefrom, we have a color process rivalling anything in 35mm., and at reasonable costs in terms of both money and equipment. The only comparable color process, Technicolor, being prohibitive in cost even if equipment were available in sufficient quantity.

The presentation of subjects in Kodachrome is so much more natural than in black-and-white that to me there should be no hesitation in its use. By the use of color, many things can be shown that would be very difficult in black-and-white, even in subjects which at first would be considered to have no color possibilities.

To illustrate, we might consider a training film on lathe practice, several of which have been already produced in 35mm. black-and-white. In order to show clearly the operations, extreme close-ups must be used, and because parts of the lathe, as well as the work being turned out, are metallic and more or less shiny, it is very difficult to avoid confusing lights and shadows with the type of lighting demanded by good black-and-white photography.

The same film in Kodachrome would separate the grey shiny enameled parts of the lathe from the work being turned by color contrasts, which could be made extreme by using yellow brass for the

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Aces of the Camera

XXVI:

Robert De Grasse, A.S.C.

By WALTER BLANCHARD

DIRECTOR of Photography Robert De Grasse, A.S.C., was practically born into the picture business—but it took a war to make him aware that the career he wanted was one behind a motion picture camera! Four of his father's brothers were stage or film folk. One of them—his uncle Joseph De Grasse—was one of the most prominent and best-liked of silent-picture directors. Another—Sam De Grasse—was one of the foremost screen “heavies” of twenty-five years ago.

But young Bob, though he grew up in a theatrical atmosphere, never paid

much attention to the movies. He was much more interested in basketball; and America's entrance into World War I found him a student at the University of Southern California, studying occasionally, playing basketball energetically, and in general having a pleasant, carefree life.

The war changed things for him, though. As soon as he was old enough to meet the age requirements, he enlisted and was accepted for Officer's Training in the Field Artillery of the U. S. Army. But the Armistice found him still in training, and with the need for officers

gone, he was soon granted honorable discharge and returned to civil life.

After his Army experience, though, he found he wanted something with more serious purpose to it than the life of a conventional collegian. So he decided to forget college and go to work. As a starter, he hit his Uncle Joe for a movie job. What kind did he want—? That was easy: he had decided that he wanted to get into camerawork, and work his way up to where eventually, as a First Cameraman, he could be responsible for bringing feature films to the screen. And in due time he found himself on Universal's payroll as an assistant cameraman.

This work suited him perfectly. There was endless variety in it, coupled with a purposefulness he could see as the picture progressed from the start to the finish of its shooting.

Besides, the comparatively easy-going production methods of twenty-five years ago gave him plenty of time to devote to his first love—basketball. He played on studio and semi-pro teams with distinction. One year his team even proved strong enough to be sent to the National Championship Tournament, in which it captured third place—the first team from the Pacific Coast to place so high nationally.

“I guess I felt pretty good about that,” he says, “and I must have showed it. At any rate, my folks decided it was time to deflate me a bit. They began dropping hints that while they saw my name often enough in the sports pages in connection with basketball, they hadn't noticed anybody writing about my skill as a photographer.

“As those hints began to penetrate my consciousness, I suddenly made the discovery that there were a lot of things going on in the studio, and more or less directly related to the work I was doing, but about which I didn't know anything. I decided that if I wanted to get ahead in the business, I'd better forget basketball and begin learning about my own work!

“For instance, while I loaded and unloaded the camera, and took the exposed film to the laboratory every night, I realized I didn't know a thing about what happened to that film between the time it reached the lab and the time the rushes hit the screen the next day. So I began to put in my spare time helping the laboratory crews who developed and printed my film. I learned not only what they did, but how and why they developed and printed the scenes as they did.

“Next, I realized that a whole succession of interesting things must be happening in the cutting rooms where the disconnected scenes we shot on the set were assembled into a smooth-running continuity. So I made it a point to get acquainted with the cutters, and put in as much of my spare time as I could helping them. I learned how to cut film—not just how to splice it, but how to build the scenes and angles into

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THROUGH the EDITOR'S FINDER

DURING the past month a little group of publicity-seeking Senators have been sniping at the men from Hollywood who are serving as officers of the U. S. Army Signal Corps. From their viewpoint, this is probably understandable, for any attack on Hollywood and its prominent personalities is automatically good for Page 1 publicity for the attacker. But from any standpoint of logic or of common decency it is damnably unfair—especially when they charge that men who have been proving their ability and courage under fire are not worthy of the uniforms they wear.

Let's examine the facts. Long before Pearl Harbor, the Army knew it needed training films in greater quantity and quicker than its own scanty peacetime facilities could produce them. It knew, too, that when war eventuated, it would also need motion pictures of actual combat, made both for strictly military reference purposes and as documentary reports for the public at large.

To meet these needs, the Army very logically turned to America's motion picture industry and its people. The industry responded by turning out hundreds of Army training films—some of them of more than feature length—on a rock-bottom, less-than-cost basis. No charges were made for studio overhead or any of a score of other similar items which would be figured in any normal, commercial cost-accounting. The industry's best and highest-salaried executives, writers, directors, actors and other creators vied for the privilege of donating their services to the production of these films. In a word, the motion picture industry is the only industry in America which from the start—nearly two years before Pearl Harbor—deliberately arranged its government contracts so that it would not and could not make a penny of profit on its defense production!

For combat films and tactical or training films which had necessarily to be made within the Army organization, Hollywood bled itself white to provide its best manpower. Executives, directors, writers and technicians voluntarily gave up the comforts of home and abundant salaries to step into uniform. The great majority of them, by reason of age or dependencies, did not really *have* to go—but they went, and asked for assignment to duty in combat areas.

The Army rewarded most of them with commissions, it is true; but these commissions are not so much a reward as the only possible means of giving these men the minimum military authority necessary to enable them to carry out their picture-making assignments. And whether these men were producers, directors, writers or cinematographers, the authority implied by their military commissions is in no case commensurate with the authority to which they were accustomed in their civilian positions.

Let's take the case of the individual most prominently—and most unwar-

rantedly—attacked: Colonel Darryl F. Zanuck. In civil life, he was the production head of the 20th Century-Fox Studio, with authority and responsibilities which can best be likened to those of a Major General in the Army. On the basis of proven performance, rather than politics or "pull," he stood unquestionably at the head of his profession.

For nearly a year before Pearl Harbor, and for many months thereafter, he was the guiding and coordinating spirit of the industry's Army training film production effort. In this he worked tirelessly: his days, he gave to his exacting studio job; but night after night, during the hours when most men are at home with their families enjoying well-earned rest, he remained at the studio, personally supervising the editing of Army training films, and the planning of new ones.

When he was finally called to active Army service, he was commissioned as a Lieutenant Colonel. He did not have to go. He was well past the selective service age limit. He was the father of three children. And he had served with distinction as a member of the 163rd Division of the A.E.F. in France during World War I.

But he volunteered and went—giving up, in the process, a brilliant career and a salary of more than \$5,000 per week.

Going into active service, he did not ask for an easy desk job in Washington or Hollywood. He requested active service. And in the few short months since he was called into active service, he has seen dangerously active service on three fighting fronts. His first assignment took him to Alaska and the Aleutians, where he flew over Jap-held Kiska on reconnaissance for the Signal Corps. His next assignment took him to England, where he took commando training and participated in at least one hard-fought Commando raid.

His latest assignment took him to North Africa, where he participated in both the preparation and the actual land fighting of the invasion, filming a complete motion picture record of this major American military campaign. Where his next assignment may be, no one can tell: but anyone who knew or worked with him in Hollywood can tell you that if he has anything to say about it, it will be wherever there's the hardest and most dangerous work to be done. And the pictures he brings back, like his African invasion film which is shortly to be released (and not through his company, by the way!) will, we are sure, vindicate him in the eyes of the American public.

We haven't cited Col. Zanuck's record because of his erstwhile position in the industry, but because he has been the one most spectacularly attacked, and because we believe his record is typical of those of the hundreds of trained picture-makers Hollywood has given to the Army. There may be some military misfits and pink-tea officers who have

given Hollywood as their home address—that's always likely when swift and tremendous military expansion is taking place. But we don't believe Senator Truman or anyone else can put the finger on *one* man from Hollywood's film industry whose peacetime achievements indicated he had anything on the ball, who isn't more than pulling his weight in the Service.

For to us, Hollywood's attitude is typified by the remarks of one cameraman who came to see us shortly after Pearl Harbor. "Hell," he said, "I'm not worrying about a commission. I was an officer in the last war, but I'd be willing to go in as a buck private in this one. I don't want an easy, desk job: what I want is a chance to take my coat off and work hard making pictures. Rank or swank don't interest me—but I want a chance to put whatever skill I have to work for my country!"

RANKING high among the industry's unsung heroes are the contact-men of the various raw film organizations. Ostensibly, their jobs are to promote the sale of their firm's product to the studios, to run down technical complaints and to keep the industry's cameramen up to the minute on the technical performance of their film.

But unofficially, their service to the industry and to the camera profession far exceeds this. Without exception they act as professional counsellors and friends to the men of the camera. They act as unpaid publicists and business agents for cinematographers—especially for those who may be out of a job or "between pictures." Times without number they have gotten jobs for cinematographers—often for men who didn't even know they had such friends plugging for them behind the scenes.

Any one of them has alone done more for cameramen than all the agents and "artist's representatives" who ever attempted to get jobs for cinematographers. Repeatedly they'll go to executives and camera chiefs and tell them frankly they're making a grave mistake in letting this man get away from them, or not hiring that one. And these executives accept the film salesman's word because they know he has no axe to grind. He gets no ten per cent from the man he "sells" to a studio; no gift or salary cut-back—often not even a word of thanks.

It seems to us that it's about time these men received some tangible expression of the camera profession's appreciation of their untiring service to the interests of cameramen, both individually and collectively. The war has honors for those who give service "above and beyond the call of duty." We who benefit by it should give honor, too, to these men give cinematographers that same sort of service above and beyond the strict letter of their jobs as film-salesmen.

A.S.C. on Parade



Now it's Major Ted Tetzlaff, A.S.C., U. S.A.A.F. Right in the middle of putting RKO's "Free For All" on film, the Army Air Force pinned a pair of gold maple-leaves on his shoulders and put him into training for active foreign service. Meanwhile, Frank Redman, A.S.C., took over the completion of Major Ted's picture, and, so we hear, has everyone at RKO doing raves over the swell job he's doing.

From the "hot corner" of the South Pacific comes word that Lt. Phil Chancellor, A.S.C., U.S.N.R., has received a well-earned promotion and is now Lieutenant Commander Chancellor, Photographic Officer on the Staff of the Commander of Aircraft in that busy area.

And Winton Hoch, A.S.C., is now in uniform as a Senior Lieutenant in the U. S. Navy.

Among uniformed visitors of February was Capt. Wilfrid M. Cline, A.S.C., U.S.A.A.F., in town briefly from parts unknown, en route to more of the same.

Another visitor was our Washington representative, Reed N. Haythorne, A.S.C., out here on a Government camera assignment.

Add military "hush-hush" notes—Roy Hunt, A.S.C., away from Hollywood on a special mission for the Army which, according to Army announcement, is "outside the continental U. S. A."

And Bert Glennon, A.S.C., draws the prize plum of Technicoloring Irving Berlin's "This Is The Army" for Warner Bros., on a new contract that will keep him there for some time to come.

Shed a tear for A.S.C.-Prexy. Fred Jackman: his ration board let him get

a brand new Buick and gave him a "C" card—and then Fred got laid up with intestinal flu and couldn't use either of them!

With three days of shooting left to finish "Old Acquaintance," Sol Polito, A.S.C., had the bad luck to tumble off a camera-parallel and break his ankle. So Arthur Edeson, A.S.C., stepped into the breach to finish the picture. Here's wishing Sol a speedy recovery!

The other day on the Warner lot we were startled by a lusty hail from a block away. Turned out 'twas Capt. Joe Valentine, A.S.C., of the Army's Special Service Corps, blowing off steam because we had reported him as a mere 1st Lieut. Don't blame us, Joe—that's the way we got it from the studio and the trade papers! And remember your promise to send us up a picture of you and those two nifty shoulder-bars to convince the other readers of this page!

L. Wm. O'Connell, A.S.C.—"Connie," to you—busy at Columbia filming "Blondie Buys a Horse."



It's 1st Lieutenant Tom Tutwiler, A.S.C., now. He's another good man grabbed by the Army Air Force. Lot's o' luck, Tom. We'll miss you!

Ernest Haller, A.S.C., gets the Director of Photography assignment on Warner's biggie, "Saratoga Trunk."

Congratulations to Ralph Staub, A.S.C. Just recovered from a serious siege of pneumonia, he started his 11th year with Columbia, turning out his "Screen Snapshots."

John Seitz, A.S.C., bedded by "flu," so Theodor Sparkuhl, A.S.C., pinch-hit for him filming Paramount's "Five Graves to Cairo."



As we go to press, Elmer G. Dyer, A.S.C., was just about to be sworn in as a Major in the Army Air Force. Those wings, he tells us, indicate he's the camera-toting member of the flying crew. Pretty nifty, what? No wonder he's beaming.

Out at Universal, Paul Ivano, A.S.C., is assigned to film "You Go To My Heart."

We don't know if it's true, but one of the town's better columnists tells this one about Lt. Charles W. Herbert, A.S.C. Last year, when Herb went into the Army he decided to sell his photographic equipment, as he certainly wouldn't be using it "for duration." When he got his assignment to active camera-duty, the Signal Corps issued him—you guessed it!—his own camera!

Out at MGM, Lester White, A.S.C., and Hal Rosson, A.S.C., both smiling over new contracts.

And at 20th-Fox, Camera Chief Dan Clark A.S.C., and Eddie Snyder, A.S.C., have been anchored for another year via the contract route.

George Robinson, A.S.C., is head of the photography department of Universal's "School for Jive."

Russian notes: Out at MGM Harry Stradling, A.S.C., gets the nod to put the Ratoff-Pasternak epic, "Russia," on film, while for Sam Goldwyn, Jimmie Howe, A.S.C., is assigned to another Russky Kino, "North Star." After that, we hear, Jimmie is due to report back to Warner's on a new term contract—unless an important Government assignment "breaks" first.

Russell Metty, A.S.C., busy at RKO filming "The Sky's the Limit," with Fred Astaire and Joan Leslie.

PHOTOGRAPHY OF THE MONTH

THE HUMAN COMEDY

Metro-Goldwyn-Mayer Production.

Director of Photography: Harry Stradling, A.S.C.

This picturization of William Saroyan's much-discussed story must inevitably go down as one of the really great pictures of all time. In every phase it has the simplicity and moving power of true greatness. There is not a scene nor an action which does not ring true, to bring to the screen the most sincere and realistic presentation of the real America that we have ever seen.

This applies just as much to Harry Stradling's photography as to the rest of the picture. He contributes enormously to the production: his camera-treatment maintains a superb balance between documentary realism and a subtly "different" treatment in lighting and composition which enhance the dramatic values of the story without ever for a moment becoming obviously theatrical. Without doubt, it is his greatest camera achievement so far.

We could fill countless pages expressing our enthusiasm for this picture and its photography—but it would all add up to urging every reader, and especially those in foreign countries, to see this picture for themselves, for it is the finest picturization of American life and ideals ever screened. If you miss it, you will regret it, for "The Human Comedy" is not only a great picture, but a great emotional experience.

HANGMEN ALSO DIE!

Arnold Pressburger Production; United Artists' Release.

Director of Photography: James Wong Howe, A.S.C.

This melodramatic picturization of the Czech "underground" movement is unusually good entertainment, for in addition to its timely anti-Nazi theme, it is a more than ordinarily good melodrama. Both the story and the direction of camera-wise Fritz Lang have afforded James Wong Howe, A.S.C., unusually fine opportunities for photographic effectiveness. His treatment is throughout a study in the dramatic use of composition and effect-lightings. In only one sequence can we find any serious criticism with his treatment: this is in the sequence in the cafe where Anna Lee starts the cleverly-motivated movement to entrap Gene Lockhart. In the scenes where she and the waiter approach Lockhart, the composition in both long and medium-shots is seriously weakened by the inclusion at the right of the frame of the face of an extra girl which consistently distracts attention from the action of the principals.

For the rest, "Hangmen Also Die!" is well worth seeing as an example of fine melodramatic cinematography and for its interesting plot construction and presentation.

IN WHICH WE SERVE

United Artists' Release.

Director of Photography: Ronald Neame, A.C.T.

Noel Coward's picturization of the career of a British destroyer and its crew is another outstanding example of fine craftsmanship. Produced in England under wartime difficulties, it reflects endless credit upon all concerned. The photography by Ronald Neame, one of Britain's foremost cinematographers, is one of the finest pieces of camerawork ever to come out of England. It shows clearly how capably, and in what fine spirit our fellow-cinematographers of Britain's A.C.T. are carrying on. It is unfortunate that space limitations forbid a more detailed review of this exceptionally fine production, but we can sum it up by saying that we sincerely congratulate Cinematographer Neame and Producer-Director Coward on making one of the year's outstanding films, and one which we urge all our readers to see.

THE AMAZING MRS. HOLLIDAY

Universal Production.

Director of Photography: Elwood Bredell, A.S.C.

When the difficulties which attended the making of this production are taken into consideration—it was off again and on again four or five times, while directors were changed, story rewritten, etc.—it must be concluded that "Woody" Bredell, A.S.C., has done a most creditable job of camerawork. It is not easy to turn out a smoothly consistent piece of cinematography when there are intervals of days and even weeks between spurts of shooting, during which story concepts and treatment are basically changed around. But Bredell has managed it with really surprising success. He gives the picture the required opulent visual mounting, and deals very well by the players, including the now completely grown-up star. Here and there can be seen traces of his difficulties—a sequence here which might have been better photographed in a higher key, a scene or two there which appears to have been printed down to the detriment of flesh values—but in general Bredell's skill and adaptability have brought him most successfully through what must have been a very trying assignment.

THE IMMORTAL SERGEANT

20th Century-Fox Production.

Director of Photography: Arthur Miller, A.S.C.

When they handed Arthur Miller the task of photographing "The Immortal Sergeant," they handed him an unusually difficult assignment. There are really two stories, which require diametrically opposite camera-treatment, but which are intercut as one—the story of Henry

Fonda's pre-war life—is told in flashback form. On the one hand, these pre-war sequences called for sparkling, high-key camerawork; on the other, the basic story of a British patrol lost in the Libyan desert, calls for day exteriors of ruggedly documentary quality and a preponderance of virile night-effects. The way Miller has managed to blend these two conflicting elements into a coherent and comparatively smooth production is as great an evidence of his technical and artistic skill as anything he has ever done, not excluding his Academy Award achievement of last year.

THEY GOT ME COVERED

Samuel Goldwyn Production; RKO Release.

Director of Photography: Rudy Maté, A.S.C.

Special Photographic Effects by Ray Binger, A.S.C.

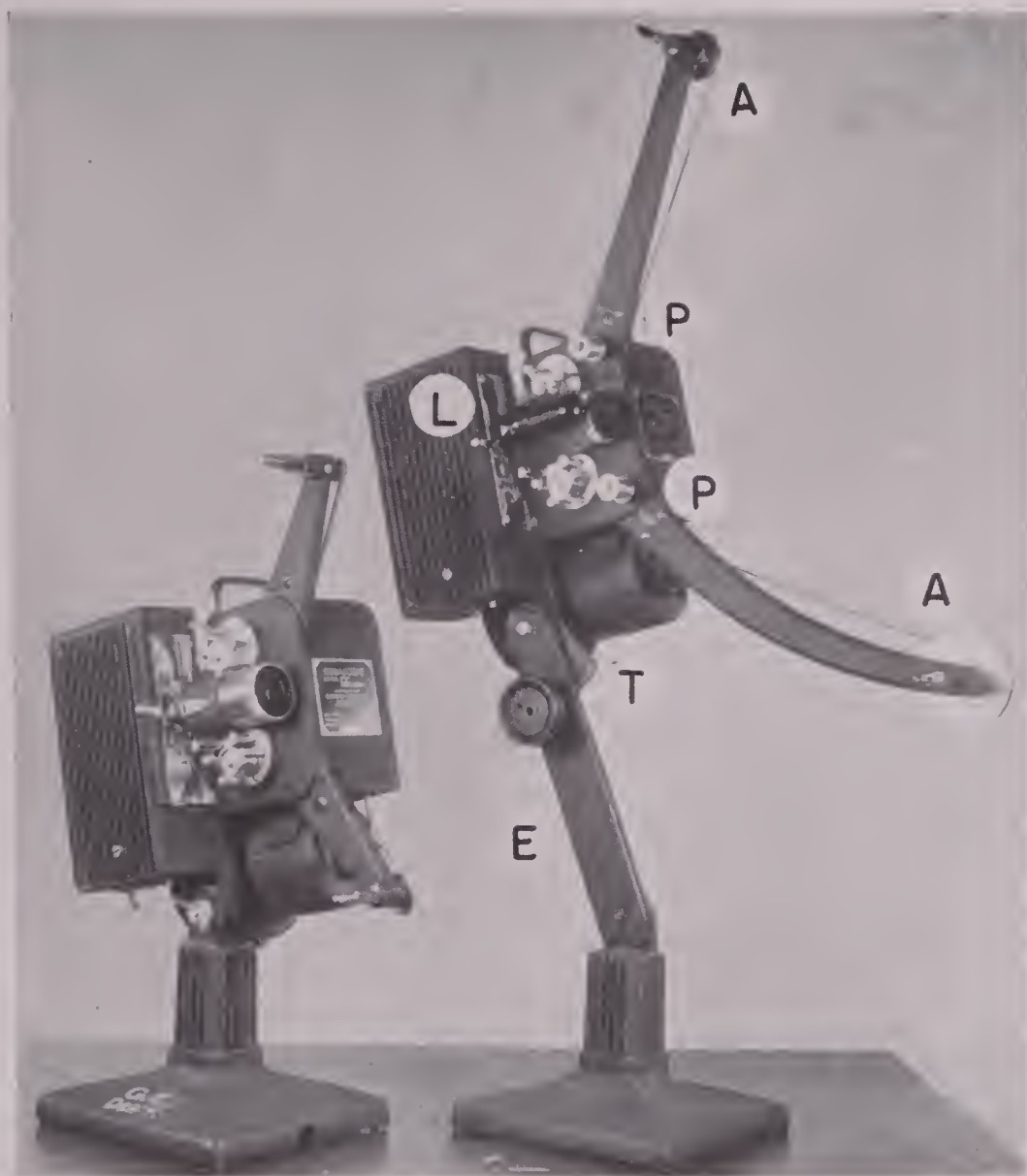
The mixture of typical Bob Hope ad-libbed comedy with a melodramatic story in this picture gave Director of Photography Rudy Maté, A.S.C., a really difficult assignment, but he has delivered his customarily fine performance at the camera. He keeps his players looking unusually well; especially Dorothy Lamour, whose appearance in this picture impressed me as being far better than in any black-and-white production in which she has appeared in a long time. Maté's effect-lightings are well worth study, among them the sequence in the abandoned factory which, instead of a studio set, employed as a background a bonafide abandoned gas-works. Art Director Perry Ferguson's contribution is another interesting phase of the picture, especially the way he and Maté have given the film so much "production value" in spite of the current restrictions on set-construction. Ray Binger's special-effects work is another contribution which comes in for more than ordinary praise.

STRANGER IN TOWN

Metro-Goldwyn-Mayer Production.

Director of Photography: Sid Wagner, A.S.C.

This unpretentious little program production offers more charm and entertainment than many an "A" production we could mention. Sid Wagner's camerawork smoothly complements the rest of the production. His interiors are excellently handled, and his exteriors models of fine outdoor camerawork, while he presents his players to unusually good advantage. This, by the way, is particularly true of his treatment of Frank Morgan and Porter Hall, the latter appearing to better photographic advantage than we've ever seen him. All told, this picture is one we can recommend both as photography and entertainment.



A "Model EE" Grows Up

By PHILIP A. JACOBSEN

Technical and Research Director,
Campus Studios, University of Washington

NCESSITY is a good stepmother to Invention. She encourages honesty and does not bother with superficial refinements. She is not afraid of hard times and rough going. Necessity's adopted son seldom picks his haberdashery from Esquire and practically never rides in luxury, but those who know him best say that his homemade get-up belies his unusual performance and that the roads he travels with his "haywire old busses" and strange new rigs often get him there ahead of schedule. Hard-working and frugal Necessity is not much like the romantic, generous and easy going mother who bore most of today's crop of young movie-men but she is respectable and determined, and she has no intention whatsoever of abandoning her role as

stepmother while it takes an AA-5 priority or better to put photoflood light in dark places. If your dreams of 16mm. sync-motor driven cameras, dual-system recorders, Moviolas, batteries of film phonographs and lockers overflowing with "Number 4's" and Kodachrome are suddenly interrupted by this strange woman calling you to breakfast in your war-stricken kitchen, you had better be nice and call her "Mama".

I started calling Old Lady Necessity "Mother" in 1937 and she has been the recognized head of my family ever since. In that year my plans called for sound-on-film by 1938 at the very latest. In 1938 I postponed the "sound-where-it-belongs" business until 1939. In 1939 I started shooting some backgrounds for the great sound-on-film job but put off

the lip-sync stuff until 1940. In 1940 I rewrote the entire script, eliminating all sync sound, photographed everything "silent" on color ribbon but saved the post film recording for 1941. In '41 I recorded the sound on disk.

In 1941, Necessity, working overtime, figured out a way of getting our Eastman Model EE into long pants. The scheme called for man-size 1,600-foot arms, a stilt to keep the new reel-holders off the deck, a threading light, a fancy go-stop switch, a new speed control, and a flashy neon speedometer.

Our studio technician mutinied at the thought of mutilating a perfectly good projector in order to get parts enough to assemble an overgrown orphan, but we lured him back into the shop by rashly declaring that the hospital bill would be less than thirty dollars, and that since no manufacturer lists a machine with a stroboscope at any price, if he could do the trick he might get his name printed in *THE AMERICAN CINEMATOGRAPHER*.*

Building a couple of arms and spindles is not much of a trick for a man with a few good tools, and our duped mutineer would have turned them out in a few hours if someone hadn't stayed his hand in mid-air by pointing out that the reel arms on an "EE" are practically interchangeable with the 1,600-ft. arms on an Eastman FS-10.

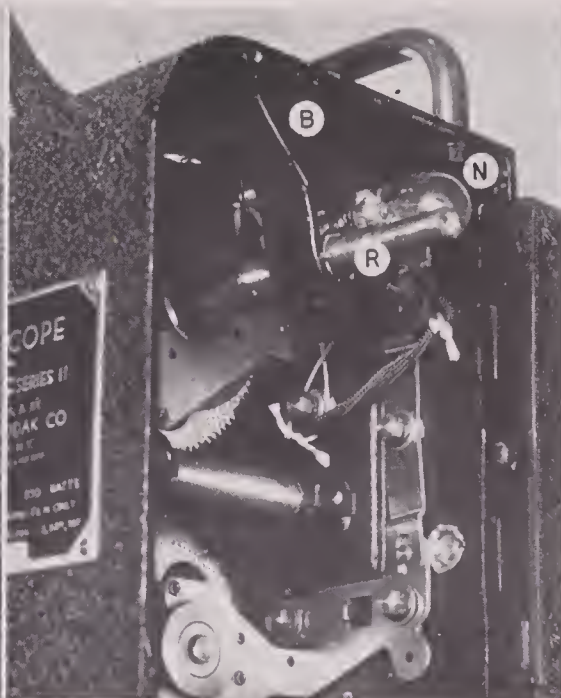
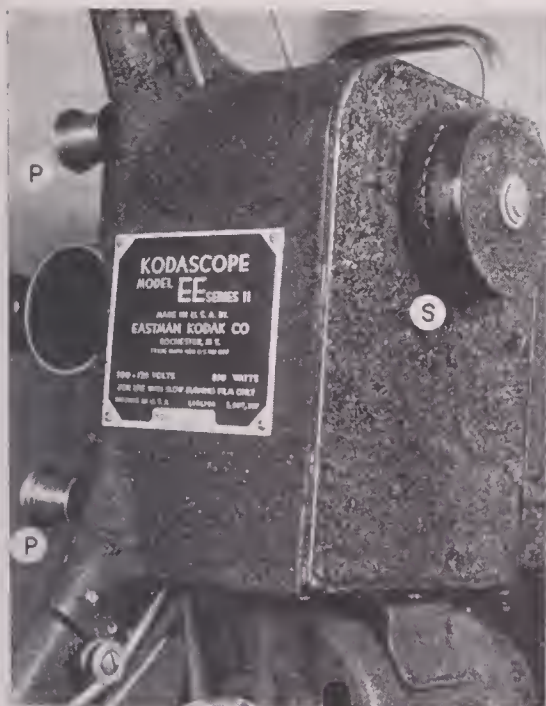
Closer inspection convinced us that the longer belts on the 1,600-foot capacity FS-10 would also fit the rearmend "EE" without recourse to "jimmy", hack saw or torch. (In Fig. 1 the FS-10 arms grafted on our grown-up "EE" are lettered "A").

On top of this good fortune came the report that our purchasing agent had actually smiled when he found that he was not expected to buy a complete FS-10 to get each set of arms requisitioned, so we pressed our advantage by persuading him to buy new arms and belts for all the "EE's" on hand. For good measure we slipped in an order for several Eastman Model G threading lamp assemblies and start-stop-threading light switches. (In our photographs, "L" designates the threading lamp unit).

While we were about it we decided to do something about the speed-control resistor on the "EE". This control will completely stop the projector motor and cooling fan in its "all in" position *without* switching off the 750-watt light-and heat-giver. This makes things hot as hell in the lamp house and around the picture gate and makes even an operator dumb enough to stall the motor plenty mad.

We found that a fixed resistor of the right value in parallel with the variable control rheostat would prevent the motor from ever completely laying down on the job, but we happened to have a very nice Ward Leonard control with higher dissipation rating and just the right resistance, which could be installed without using brute force, and we couldn't resist using it. With this change

* Andrew B. Jacobsen (Now on RADAR research at M.I.T.).



in speed-control resistance the "EE" couldn't be forced to run at any speed less than about eight frames per second.

To keep the 1,600-foot reels from dragging, it was found necessary to insert an extension bar between the base of the "EE" and the head of the projector. (This link is marked "E" in the photographs). The backward rake of the piece is just enough to put the weight of the vital parts where it will counterbalance the turning moment of a 1,600-foot reel when it is loaded to the gills. The fibre gear and brass pinion "T" with the associated handwheel were incorporated to make it easy to find the screen with the picture. The two rollers indicated by "P's" were installed after it was found that the film feed and take-up from the bigger reels was not smooth without a guide-snobber arrangement.

The final bit of surgery was undertaken in the interest of speed control accurate enough to give semi-synchronous operation with sound-on-disk. An abdominal was performed and the shaft mounting the upper sprocket wheel was removed and replaced with one long enough to stick through the plate covering the projector's inner vital organs. (In our operating-table photograph the new shaft is marked "R"). This same view shows a new bearing, "B," complete with oil-hole and well, which was installed to prevent shaft "R" from wandering.

Near this shaft, on a piece of bakelite, two terminal lugs were mounted to which a small neon lamp was directly soldered. Connections were then made from the neon lamp to the 110-volt circuit at a point where full voltage was applied to the lamp whenever the motor turned over. Next, a hole large enough to allow both the new shaft and the head of the neon lamp to protrude was carved in the soft metal cover-plate.

Then a hollow cylinder with one end open was fashioned from thin tubing and sheet brass to form the stroboscope wheel. Forty holes were drilled in the face of the cylinder. We were told that this is just the right number to indi-

On opposite page, the Model "E" in its original condition, and as rebuilt to take 1600-ft. reels. Above, the details of the conversion. P indicates idling rollers added to smooth feed and take-up with extended reel-arms; S indicates stroboscope drum; R, the extended shaft which revolves the "strobe," B, its bearing, and N the neon lamp which illuminates the stroboscope.

cate when the Model EE is pulling film past the light gate at 24 frames per second. Some one with a degree in mathematics figured the new shaft would turn three revolutions per second when the machine was turning up sound speed. Since the sprocket mounted on this shaft sported eight teeth and three times eight is twenty-four, the figuring seemed about right.

Forty "strobe" holes per revolution times three revolutions per second was 120 "strobe" holes per second to us after a spell of thinking. Some one with a degree in electrical engineering helped us figure that a neon lamp sitting on a sixty-cycle source will flash on both peaks of each cycle which is the same as saying that it will get bright 120 times each second. This is just the way a neon light behind a 120 hole per second stroboscope should blink to make the "strobe's" spots stay put.

As I said we drilled forty evenly-spaced holes, but since all of our pictures are taken for sound speed projection we just never have been able to find time to put in an additional set of 27 holes in the cylinder to indicate 16 1/5 frames per second. It may be years before we can get our drill press to make us a set of 26 2/3 holes to signal exactly 16 frames per second.

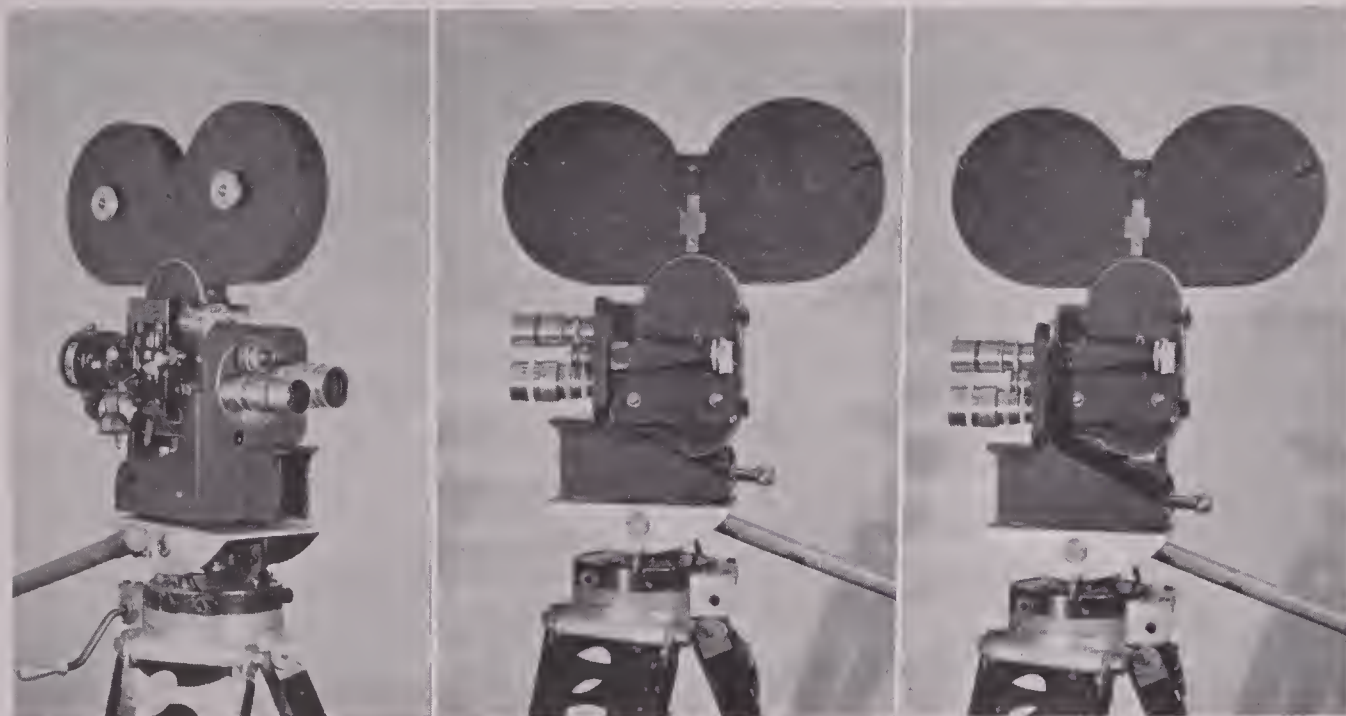
The outboard end of the new shaft was drilled and tapped for an 8-32 machine screw which, together with a pin, was made to hold the stroboscope cylinder in place. ("S" is for stroboscope in the illustrations). This finished the reconstruction and the masculated projector was christened, "Model EE Series J" by cracking a bottle of Kodascope oil over the oil holes. The launching was followed by a trial run with some of the crew holding their breath and some their noses.

To my great relief the reincarnated "EE" treated a 1,600-foot roll of film to as smooth a ride as a 16mm. picture can ever expect to get on any machine costing less than \$1,200. In addition, the stroboscope proved to be such a good indicator of "out of bounds speed operation" that even lip-sync-sound-on-disk could be handled by a patient and attentive operator. Our success braced us for our next and most precarious step.

To keep the adult series J company on trips, we built a transcription player with a frieze of functional white spots running around the rim of its turntable and a neon flasher to chase these spots forward and backward when the platter turner wasn't rolling on the nose at 33 1/3 R.P.M. Before we finished everything necessary to force our cine-disk production on the audiences our public relations director was trapping, we had almost run out of days and nights tagged 1941. Finally, amid cat-calls and mud from both silent and sound-on-film arm-chair experts, and with some real misgiving on my part, we pushed the show and its gear out the alley door of the studio and onto the road.

Immediately that miserable "going to get fired" feeling enveloped us. We waited . . . for over a month, we waited. I packed my bag and waited . . . waited fully expecting a telegram from the unfortunate operator sent out with our "big mistake," telling us that he was closing the season with a special showing for his new schoolmates at the State Insane Asylum.

Instead, to my utter astonishment, we finally got an entirely different kind of a letter. It read: "Hello Gang. Maybe they won't padlock the studio. Surprise!! Your kaleidoscope of unintegrated color, message and transcribed sound, 'University' is getting by in the best of yokel circles with nary a slur on your necessity-mothered sound-on-disk. So easy to operate that I fell asleep during last night's show and didn't come to until the finish fade when some one turned on the house lights and the applause started." END.



Above, left, the "professionalized" Bolex; middle, camera in photographing position, and (right) in focusing position. Below, the camera in shooting position (above) and focusing position (below).

Professionalizing The Bolex

By WILLIAM STULL, A.S.C.

THE criticism most frequently levelled against most 16mm. cameras for either professional or advanced amateur use is that they do not provide for a professionally accurate method of ground glass focusing. One or two more or less custom-built "16-pro" designs, it is true, do provide this feature. But most of the better-grade 16mm. cameras of the types used by the majority of 16mm. professionals and advanced amateurs do not. They may provide ground glass focusing, but not with the lens in actual photographing position. Usually, the image is too small for precise work, and the focusing eyepiece unhandily located, as well.

But William A. Palmer of San Francisco, one of America's foremost exponents of professional 16mm., has recently remodelled a standard Bolex 16mm. camera to conform to standard 35mm. professional practice in this respect. Like a 35mm. studio camera, his professionalized Bolex has a handle-operated "throw-over" which moves the camera-head to one side and away from the lens and brings into place behind the lens a ground glass focusing screen with a suitable magnifying system which enables him to focus on an enlarged and laterally correct image while the lens is in actual photographing position.

In making this conversion, the original Bolex was left virtually unchanged. It can be removed from the device and restored to its original condition in a few minutes. Moreover, in making the conversion an absolute minimum of critical materials were used.

The foundation of Palmer's conver-

sion is a shift-over mechanism he developed some years ago to eliminate parallax in the Bolex's usual visual focusing arrangement. This consists of a base on which the camera is mounted, and built up from two castings connected by a spring-tensioned cam-and-lever linkage. Originally this was used to drop the camera downward and to the left so that the lens, when rotated on the turret to bring it in front of the Bolex's visual focuser at the upper right-hand corner of the camera, occupied the same position it would when shooting. For photographing, the shift-over handle was given a half turn, lifting the camera up and to the right so that with the lens in front of the aperture, it would occupy the same position as in focusing, eliminating parallax worries.

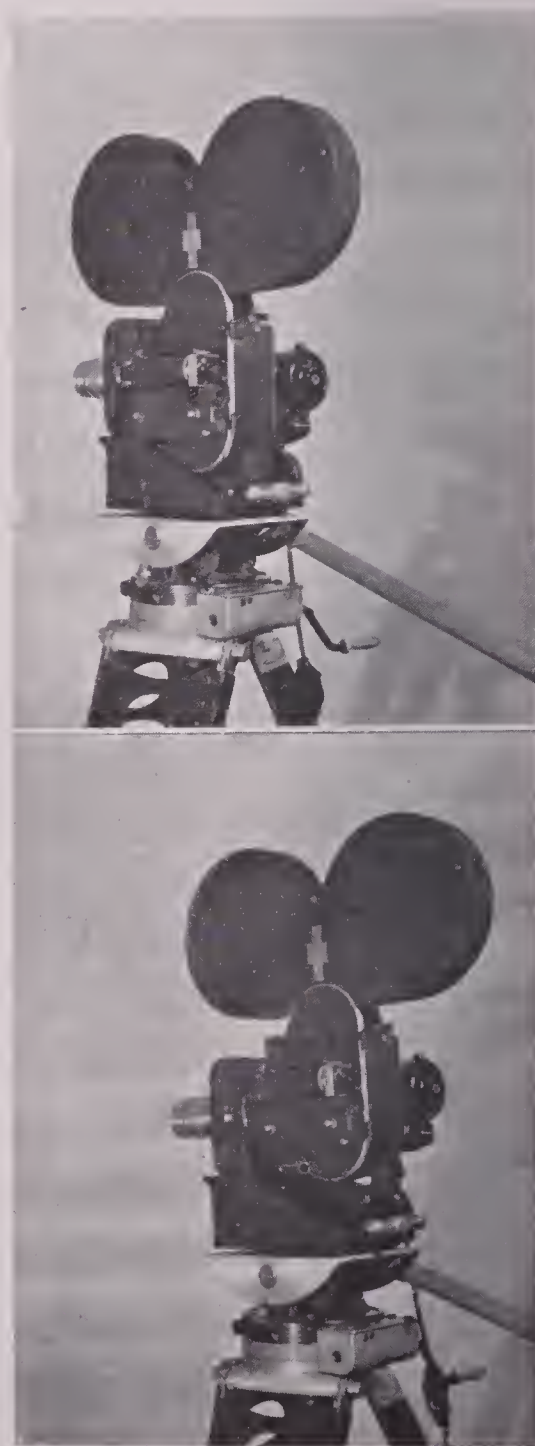
This in itself was an improvement, but it was by no means fully satisfactory, as the position of the camera's focusing eyepiece was inconvenient, and the magnification inadequate.

The next step was to make the design fully professional, providing a means for moving the camera out of the way and swinging a focusing system into place without moving the lens from shooting position.

The construction of the Bolex did much to simplify this. The Bolex happens to be one of the very few turret-equipped cameras in which the turret is not inset in the front-board of the camera. Instead, the turret is virtually a separate unit, mounted in front of the camera housing.

This made it possible to remove the

(Continued on Page 108)



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The Useful Hyperfocal

By JOSEPH WALKER, A.S.C.

CORRECT focus is an absolute essential to good photography. In some types of amateur and documentary filming, minor errors in exposure, composition and lighting may at times be considered forgivable. But unless a scene is in good focus, it's of no use to either the professional or the amateur.

The professional cinematographer, of course, has a double check on his focus. First, he is able to study the actual image, right-side-up and highly magnified on a ground glass focusing screen. In addition, it is standard practice to measure the distance from camera to subject with a tape-measure before every shot, and set the lens accordingly.

But the substandard cinematographer doesn't enjoy these advantages. Only a few 16mm. or 8mm. cameras permit any sort of ground glass focusing, and only a very few of these give the ground glass image magnification great enough and critical enough to permit absolutely precise focusing. Only a very few of the more careful-minded amateurs take the trouble to work, professional-wise, running a tape before each scene. And while an interconnected rangefinder would be invaluable in substandard camerawork, thus far only one amateur camera so equipped has appeared on the market. So focus remains headache No. 1 of home moviemaking.

To some extent, the extreme focal depth of the short-focus lenses generally used on 16mm. and 8mm. cameras can cover up minor errors in focusing. But not always—as most users of focusing-mount substandard cameras can testify from sad experience! And even in 8mm., a scene where you've guessed wrong in adjusting the lens of a focusing-mount camera is usually a good deal worse than what you'd have gotten under the same circumstances with a simpler, fixed-focus lens.

The answer is that the manufacturer of the cheaper, non-focusing lens has taken advantage of a very useful little optical fact and mounted the lens so that it is permanently focused at what is called its hyperfocal setting. You can make this same optical fact work even better if you have lenses in focusing mounts. Especially when you're working under pressure, making scenes of the "grab-it-quick" type, where you want to minimize fiddling with and thinking about basic camera mechanics, you can often set a lens at its hyperfocal setting and then forget focus, confident that (at

least on most normal shots) everything important in your picture will be in adequately sharp focus. But to do this you've got to know what the hyperfocal distance is, and how to put it to work.

As a matter of fact, the hyperfocal distance is a double-action affair. First of all, it is the distance at and beyond which all objects are in focus when sharp focus is secured at infinity. But also—and perhaps more important—if you focus the lens at the hyperfocal distance, everything from one half that distance from the camera to infinity will be sharply defined. If, for instance, the hyperfocal distance were 25 feet, everything from that point on to infinity would be adequately sharp with the lens at infinity focus, while if the lens were placed at the hyperfocal setting of 25 feet, everything from 12½ feet to infinity would be adequately sharp.

The hyperfocal point is dependent upon three factors: the focal length of the lens, the aperture used (expressed as an *f*-stop) and the circle of confusion.

The term "circle of confusion" refers to the diameter of the lens' image of any given point in the subject. Theoretically, if lenses could be made perfect, the image of a point would also be a point. But in practice, not even the finest of lenses can bring the images of all wavelengths or colors of light to a focus so precisely in the same plane that the image of a point will be a true point. Instead, some wave-lengths will come to a focus on the plane of the film, while others will be focused microscopically behind or in front of it, in either case giving an image on the film slightly larger than the actual point. The practical result is that the image of the point is reproduced as a circle, rather than as a point. Maybe it is microscopically small, but it is still mathematically measurable as a circle instead of a point.

The size of this circle of confusion therefore becomes one of the chief governing factors in the matter of image definition. Speaking generally, the finer a lens is, the smaller the diameter of its

circle of confusion. In the same way, if a lens is to be used for work that is not too exacting, you can base your hyperfocal and depth of field calculations on a circle of confusion considerably larger than is necessary in a lens to be used for exacting work like cinematography. For still-camera work, for example, and even in some calculations for 35mm. cine work, a circle of confusion .002 inch in diameter may be quite acceptable: but for really professional 35mm. cinematography, and for all 16mm. and 8mm. cinematography (in which the relative enlargement in projection is much greater than in 35mm. practice) the permissible circle of confusion must be taken as .001 inch.

The accompanying table will give you the hyperfocal distances for the most commonly used substandard lenses over the general range of stops. But it is easy enough to figure out the hyperfocal point for any lens and stop for yourself. The formula is:

$$H = \frac{F^2}{f \times C}$$

In other words, the hyperfocal distance (H) equals the focal length of the lens (F) multiplied by itself and divided by the product of multiplying the *f*-stop (f) by the circle of confusion (C). You can see that for any one lens, two of these factors—focal length (F) and circle of confusion (C)—remain constant. The other two may vary, and therefore influence each other.

Now let's see how this works out in practice. Suppose we have a 2-inch lens and use it at *f*:2.5. Assuming the circle of confusion to be .001 inch, and substituting these numerical values into our formula, we have "H" equal to 2x2 divided by 2.5 x .001. This works down to 4 divided by .0025, and gives us 1600 inches or 133 feet. If the lens is focused at the 133-foot point, everything from a point about 65 feet from the lens to infinity will be sharp.

Now, let's stop the same lens down to

(Continued on Page 108)

HYPERFOCAL DISTANCES						
Stop.	FOCAL LENGTH OF LENS.					
	12½mm.	15mm.	25mm.	1½-inch.	2-inch.	3-inch.
	HYPERFOCAL DISTANCE IN FEET.					
<i>f</i> : 1.8	11¼	16	46¼	104	185	417
2.5	8	11¼	33½	75	133	300
3.5	5¾	8	23¾	53½	95¼	214
4	5	7	20¾	46¾	83	187
4.5	4½	6¼	18½	41¾	74	167
5.6	3½	5	14¾	33½	60	134
6.3	3¼	4½	13½	29¾	53	119
8	2½	3½	10¾	23½	42	94
11	1¾	2½	7½	17	30	68
16	15½"	1¾	5¼	11¾	21	47

AN OPEN LETTER TO ARTHUR EDESON, A.S.C. AND MICHAEL CURTIZ

KARL FREUND, A.S.C.

15024 DEVONSHIRE STREET
SAN FERNANDO, CALIFORNIA

Dear Arthur and Mike:

A few hours ago I came out of the theatre where I saw your picture "Casablanca." And I am writing this because I want you two to know how I feel about the very fine job you have done together. Since I saw the magnificent work Jimmie Howe did in "Transatlantic" twelve years ago, I have not seen a picture that so impressed me with its realization of what fine camerawork can mean to a production as did your joint achievement in "Casablanca."

Judged by the yardstick used to measure the enduringly great pictures of all time, "Casablanca" may or may not be what the critics would call a "great" picture. But it is fine entertainment. And it is a truly great example of fine film craftsmanship and of teamwork between the director and the director of photography. As one film craftsman to another, I want to offer my sincere congratulations to you both on this achievement.

Genuine cooperation and craftsmanship are things we see all too little of these days . . . particularly the sort of understanding cooperation between director and cinematographer which made "Casablanca" so effective visually. Too often the director seems to ignore the camera entirely, except as a machine for recording his scenes in the most literal way. Or else he may go to the other extreme and become so exaggeratedly conscious of the camera that he overloads his picture with "arty" tricks of focus and angles—copied, perhaps, from something he saw in somebody else's picture—which play no real part in advancing the story or in building up dramatic moods. All cameramen know that these jugglers' tricks are not good cinematography . . . but if his directorial partner shows so little understanding of the real meaning of his medium as to insist on filling his picture with out-of-place tricks, what can the poor cinematographer do but deliver them—and grow discouraged in the process?

To you, Mike, I want to express my admiration of an artist who knows the value of legitimately fine cinematography and who, as evidenced by what I saw on the screen not only in this picture but in all of your productions, is always willing to give his cinematographer a free hand to contribute it outstandingly to the benefit of the production.

To you Arthur, I want to express my admiration for having risen so magnificently to the opportunities Mike and "Casablanca" gave you,

and turning in the crowning achievement of a long and distinguished career. For too many years you have been assigned to productions which did not give you any opportunity to demonstrate the skill your fellow-cinematographers know is yours. But when the opportunity came, your mastery of all the resources and subtleties of cinematography enhanced both the dramatic and the physical values of the production. I am sure that what I saw on the screen was put there much more by your skill in lighting and composition than by anything that existed actually on the set. Your picture unfortunately is not up for the Academy Award this year—but you can have mine any time you want it. An achievement like yours deserves the highest recognition your fellow cameramen can bestow.

I know you two were backed up by a fine and far-seeing studio organization, from producer Hal Wallis right on down the line. But if there had not been outstanding ability, understanding and cooperation on the set, I would not now be writing this letter. You may wonder why I am doing it, anyway, since I am at another studio, under a contract which still has four years to run.

The answer is simple: I feel that now, perhaps more than ever before, our industry, and the world at large, need fine pictures. Above all, we need the sort of understanding, sympathetic team-work between director and cinematographer of which your picture was such an outstanding example. In the old days, this sympathetic understanding between the two key men of production used to be general; but of late something—perhaps the perpetual rush to meet production schedules—has crowded it into the background of our daily work.

I am sure I speak the sentiments of all the industry's cameramen when I say that we of the camera profession look forward to the day when that type of cooperation and craftsmanship will again be the rule rather than the exception. But until that day comes, it is only fair that those who show us, as you and Mike have, what can be achieved when cameraman and director work together as an understanding and brilliantly cooperative team, should be given recognition of our heartfelt admiration and appreciation. And in addition, I want to extend my personal thanks to both of you for having given one cameraman a thoroughly delightful evening.

Sincerely,

KARL FREUND, A.S.C.

(Advertisement)

Practical Pointers On 16mm. Sound Projection

By JOHN W. BOYLE, A.S.C.

THE Editor tells me that quite a number of amateurs have written to THE AMERICAN CINEMATOGRAPHER lately, asking for advice on how to operate the 16mm. sound projectors they are called on to use in showing civil defense films or in helping put on U.S.O. shows for troops in their communities. They're thoroughly accustomed to operating 16mm. silent projectors, but sound, they feel, adds a new element which brings up unfamiliar complications.

Really, though, there are fewer of these complications than you might at first expect. Modern 16mm. sound projectors have been designed with an eye to simplified operation, and the sound reproducing part of the projector is almost as easily operated and as durable as your phonograph or radio. The details and arrangement of the various makes and models may differ slightly; but once you understand the basic principles of sound-film reproduction you'll find it easy to understand and operate any type of projector.

While the sound and the picture are printed on the same strip of film, they are not placed literally together. The picture must go through its projection aperture with an intermittent movement. The sound must go through its reproducing aperture with a continuous movement. So the sound which synchronizes with any given picture frame is printed on the edge of the film 25 frames ahead of the picture. That is, when the picture frame is in the aperture, its accompanying portion of sound-track is about $7\frac{1}{2}$ inches below the picture aperture. The sound pick-up is located at a position such that when properly threaded through the various sprockets and idlers which give the film the properly smooth motion past the sound-head, there will almost automatically be just 25 frames of film between the picture and sound apertures.

The picture projecting mechanism, as a rule, will turn out to be an old friend. This component of the projector is usually identical with the same manufacturer's silent projectors, and can be threaded and operated in exactly the same way. If, as in one or two recent designs like the Eastman sound projectors, the entire projector is a new design not based on previous silent models, you will still find enough family resemblance so that the picture component is easily understood.

Only when you pass the lower driving sprocket do you find sound rearing its

ugly head. From this sprocket the film makes a fairly taut loop around the drum at which the sound pick-up is located. From there, in most designs, it passes over another sprocket and through various guiding rollers and idlers to the take-up.

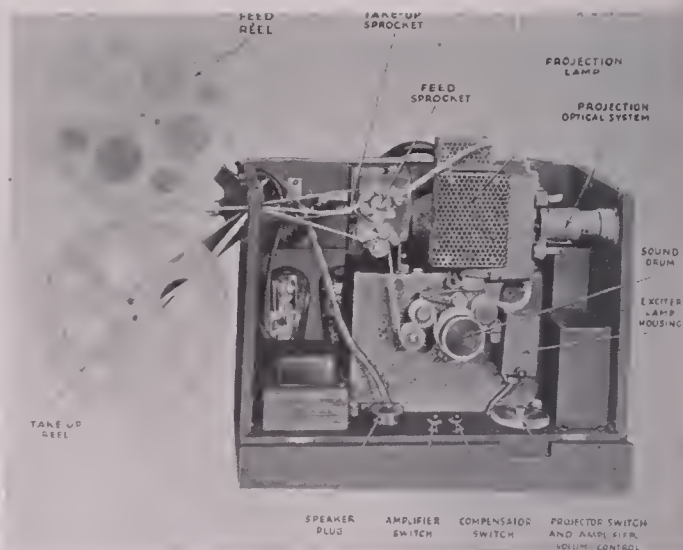
Probably the most important single factor in good sound reproduction is to have the film move past the sound-scanning aperture at a really smooth rate. For this reason, the sound pick-up is almost always located at a drum. This drum is not driven by the projector mechanism: it is revolved entirely by the friction of the film passing over it. In turn, the drum is attached to a fairly heavy flywheel or some other form of movement-smoothing "damper," so that once started, it tends to keep revolving at a smooth and uniform rate, and to keep the film's motion uniform, as well.

Therefore the tension of the film around the sound drum must be just exactly right. If it's too tight, it is likely not only to tear the sprockets, but to transfer to the film at the pick-up point a flutter or irregularity as the teeth of the driving sprockets catch in engaging and disengaging the film sprocket-holes. If it's too loose, you lose the value of the flywheel action, and the film may bulge forward off the flywheel, and out of the focus of the sound-scanning beam. The result in either case is bad sound quality.

The different manufacturers have devised different methods of getting this tension right. Some projectors use various systems of spring-tensioned idling rollers. Bell & Howell, in their Filmosound projectors, use an ingeniously simple mechanism they call the oscillatory stabilizer. It consists of two spring-tensioned rollers, one bearing on the film feeding onto the drum, the other on the film feeding off the drum, and both mounted at opposite ends of a single arm which pivots at its center. When the film tightens too much against one roller, this pivoted mount automatically slacks off the tension on the other roller, keeping the movement of the film surprisingly uniform.

In general, when you thread the film over the sound drum remember not to try to pull it too tight; just be sure it's in good contact with the drum, but not binding.

Anyway, most 16mm. sound projectors have pretty full instructions, including



Layout of a typical 16mm. sound projector. The detail arrangement of the components varies in different designs, but the essential parts indicated in the illustration can be found in all makes.

a complete threading diagram, either marked on the projector itself or prominently printed inside the projector's carrying-case or blimp. If you find you've got to operate an unfamiliar projector on short notice, a few minutes spent studying this chart should take all the mystery out of its operation.

Hooking up the wires for the sound part of the projector has also been simplified and made as nearly foolproof as possible. With some projectors, a single lead may serve to feed power to both the picture-projection mechanism and the amplifier; but in most designs there are separate power inputs for projector and amplifier. In some of them—like the Filmosound—a single power cable divides at the end into two female connections, which are plugged into adjacent inputs. As a rule, it doesn't matter which plug goes into which power input, so long as both receive current of the proper voltage and frequency.

In some sound projectors the amplifier is built as a separate unit; in others, it is built right into the base of the projector, or into its blimp. If the amplifier is separate, you will usually need a short cable to connect the amplifier to the sound pick-up. Otherwise, you won't, as the connection will be built-in.

Finally, there must be a cable connecting the amplifier with the loud-speaker which is of course placed "down front" near the screen.

These various outlets and inputs are always clearly labeled. And just in case someone might get careless about making these connections, most of the manufacturers have arranged their wiring so that the right plug can *only* be put into the right hole. For example, the line from projector to amplifier may have a four- or six-contact plug like the base of a radio tube, with one of the round contact prongs slightly larger than the rest, so that it will only fit into its correct hole, automatically aligning the other contacts correctly. The line from the amplifier to the speaker may have terminals with a different number of contacts, or perhaps a rectangular plug

(Continued on Page 106)

EIGHT OUT OF TEN

OF the Ten Best Pictures, selected in the *Film Daily's* critics poll for 1942, eight were made on Eastman Negative Films. This gratifying result provides striking evidence of the strong preference for these high-quality films. Eastman Kodak Company, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

Fort Lee

Chicago

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PLUS-X

for general studio use

SUPER-XX

when little light is available

BACKGROUND-X

for backgrounds and general exterior work

EASTMAN NEGATIVE FILMS

AMONG THE MOVIE CLUBS

"New Horizon" for Metro

A "bang up" program of outstanding film fare, a discussion on continuity, and four examples of "editing with the camera" made the February meeting of the Metropolitan Motion Picture Club of New York an outstanding one. Film fare started off with "New Horizon," Randolph Clardy's famous 8mm. monochrome which won the Grand Prize in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contest in 1936. This was followed by member Sidney Moritz' Kodachromed "Sternwheeler Odyssey," as a prelude to Moritz' discussion on continuity. Then followed four camera-edited 8mm. films from the New York 8mm. Club's uncut-film contest: 50 feet each from 8mm-ers Victor Ancona, K. Koehler, A. McGregor and E. Roeskin. The final feature of the excellent programme arranged by Joseph Hollywood was the new, Kodachromed version of "In The Beginning," by Fred C. Ells, one of 1942's best amateur films. Old-timers will remember that the original, black-and-white version of this picturization of creation, produced some year ago when Ells was living in Japan, won him international recognition as one of the world's foremost amateur filmmakers. The new version is interesting evidence of how much expertly-handled Kodachrome can add to a picture.

FRANK E. GUNNELL.

Los Angeles Clubs Double Up

Due to gasoline rationing and transportation difficulties in a sprawling city like Los Angeles, that city's two leading movie clubs—the Los Angeles Cinema Club and the Los Angeles 8mm. Club—have both decided to hold six meetings a year instead of twelve, meeting in alternate months and each inviting the other's membership to attend. The February meeting of the Los Angeles Cinema was therefore well attended by 8mm. members. The screen fare included "War Against Waste," an outstanding 16mm. sound-film documentary on industrial conservation produced by the Caterpillar Tractor Co., and shown by Editor Wm. Stull of THE AMERICAN CINEMATOGRAPHER. This was followed by "The Round-up," filmed by Guy Nelli; "An Office-girl's Reverie," by Jacques Shandler; "Yosemite," by Richard Orlow; "This Wonderland of Ours," by C. F. Lenhart; "Oregon-Columbia Road," by past-president William Hight; "Sequoia and Arrowhead," by E Pyle, and "Beyond Yosemite," by Paul Kassen.

Alice Claire Hoffman,
Secretary.

Prize Winners for 8-16

Highlights of the February meeting of the 8-16 Movie Club of Philadelphia were two prize-winning scenario films from the library of THE AMERICAN

CINEMATOGRAPHER. These were "White North," and "Prize Winner," both of which had captured premiere honors in the Scenario-film division of that magazine's International Contests. The elaborate set-building and costuming of the first film, and the homespun naturalness of the second evoked much favorable comment.

GEORGE BURNWOOD.

Washington in Minneapolis

Washington was brought to Minneapolis for the February meeting of the Minneapolis Cine Club. The vehicle was the camera of member Russ Duncan, just returned from a long stay in the Capitol. He showed two films—"This Is America," and "Fire In Washington"—the result, so he says, of his long evenings and Sundays in Washington where, he claims, the days go twice as fast as anywhere else, and the nights and week-ends are twice as long as they are in Minneapolis.

ROME A. RIEBETH.

Varied Programs in Long Beach

The February 3rd meeting of the Long Beach (Calif.) Cinema Club had as its guest Jack Helstowski of the Whittier Cinema Club, who exhibited two films, "Trials of Life," and a chiller-diller, "Back From the Dead," both with sound made by a Presto synchronizer. Other films shown included "White Water," by C. A. Willis, of Merced, and three prize-winning films from THE AMERICAN CINEMATOGRAPHER'S library. These were "Prize Winner," by J. Kinney Moore; "To the Ships of Sidney," by James A. Sherlock, of Australia, and Randolph Clardy's "Cattle Country."

The Club's work-meeting on February 17th was devoted to the first stages of putting together members' un-edited films. Story outlines were discussed for Robert Shoemaker's films of the harbor, and Claude Evans' pictures of Boulder Dam. Clarence Aldrich gave a demonstration of title-making, and Myrtle Adams and Mrs. Everley served refreshments.

LA NELLE FOSHOLT,
Publicity.

Title-Talk for Tri-City

A practical demonstration on titles and title-making by past-president Dr. Albert N. Mueller was the technical highlight of the February meeting of the Tri-City Cinema Club of Davenport, Ia., Rock Island and Moline, Ill. On the screen we saw "Adventure At Six," 200 ft. 8mm. Kodachrome, by Paul Severs; "Alaskan Highway," 400 ft. 16mm. Kodachrome, shown through the courtesy of Elmer Jansen, and "New York—the Wonder City," 1200 feet 16mm. Kodachrome, by Dr. Paul A. White. With the

above, approximately 14 films by members have been shown before the Club this season. All of them are automatically entered in the Annual Contest, and represent the largest number the Club has had entered in any Contest to date.

WILLIS F. LATHROP,
Secy.-Treas.

Philadelphia's Contest

The Annual Contest of the Philadelphia Cinema Club was held at its February meeting. Many members of both the Norristown and the 8-16 Cinema Clubs were guests of the evening. Throughout the Club year each film shown by a member is given a rating by vote of the members present, and at the end of the season the six-highest-scoring films are shown in competition. Judged were former contest winners and members of the executive committee. The prize-winners this year were: First Prize, "Grand Manan," 16mm., by Robert Crowther; Second Prize, "New York Zoo," 8mm., by Dr. R. E. Haentze; Third Prize, "Roaring Through the Rockies," 16mm., by President George Pittman; Fourth Prize, "Colonial Williamsburg," 8mm., by James Maucher. Also shown was the runner-up, "On the Vineyard," by Charles James.

FRANCIS M. HIRST,
Publications.

V-Mail for San Francisco

Highlight of the February meeting of the Cinema Club of San Francisco was a demonstration-lecture on the "V-Mail" system by Director D. L. Redfield, illustrated by a short film prepared by the Eastman Kodak Co. He also showed Eastman's new "Cavalcade of Color." Leon Gagne showed his 1200-ft. Kodachrome picture "Lake County," showing this popular resort region at various seasons of the year. Matt Draghievich showed a selection of photographic slides, and Past President John Smurr gave a talk on trick photography, which he has used to excellent advantage in several of his fine films, some of which he showed.

R. W. ARFSTEN,
President.

"Indian Summer" Southern Winner

"Indian Summer," a two-reel Kodachrome by Carl Anderson, with musical accompaniment, was the winner of the Annual Contest of the Southern Cinema Club, of South Gate, California.

The Club's officers for the coming year are Bill Fisher, President; Harold Robertson and Walter Cummins, Vice-Presidents; Enid Lindgren, Secretary, and C. C. Matheny, Treasurer.

RUTH FISHER,
Ex-Secretary.



B-M

16 m/m

SOUND RECORDING SYSTEMS

J. A. MAURER
117 E. 24 ST. NEW YORK

16 mm Business Films

THE WAR AGAINST WASTE

Institutional - documentary; 800 feet
16mm. black-and-white.

Produced and presented by The Caterpillar Tractor Co.

Photography by Frank H. Kirchner.

Reduction-print and RCA 35mm. recording by Chicago Film Laboratory.

This picture is another of the Caterpillar organization's characteristically excellent institutional films, and one which should be seen by the staffs of all of America's war industries. There is virtually no institutional publicity plugging in this picture, which tells of the material conservation methods practiced in one of our country's great industrial establishments.

Cinematographer Kirchner's use of lighting, camera-angles, some moving-camera shots and cleverly-planned transitions makes "War Against Waste" an excellent example of modern industrial cinematography. He maintains the characteristic rapid-fire tempo which have distinguished all of his earlier pictures, yet at the same time brings home very graphically—and usually by visual means—the care taken in the Caterpillar plant to assure that waste of metals, packing-cartons, and even waste paper be cut to the absolute minimum. After seeing the film, one is inclined to look down on the Chicago meat-packers who traditionally admit that in packing pork, they waste the pig's squeal. You feel sure that the Caterpillar plant engineers would even salvage that!

The picture could, however, very well be divided into two shorter productions, as the first half of the present 800-ft. film deals with conservation of materials within the plant, and the second half forms a virtually complete picture dealing with conservation of Caterpillar products already in service, through salvaging worn or damaged parts by welding and similar repairs which only a short time ago would have called for complete replacements. Both parts are interesting, but it seems to us that as separate pictures, each could more actively serve its specialized audience.

The film was photographed in 35mm., including an unusual number of excellent camera dissolves and other optical effects. The reduction print of both sound and picture by the Chicago Film Laboratory is a top credit to this organization.

Sound Projection

(Continued from Page 102)

using four or six rectangular bars—one of which is at right angles to the others—instead of the round prongs. In other words, as long as you don't try to force a plug into an input that won't receive it, you've very little chance of going wrong.

Only remember that both the projector and the amplifier must receive current, and that a line must be established from the projector's sound pick-up to the amplifier, and from there to the loudspeaker, before the outfit will project sound!

Some sound projectors, too, have amplifiers made so they can handle two sound projectors, so that changeovers can be made professionally, without a break. In that event, you'll see the two inputs prominently labeled "Proj. 1," and "Proj. 2," and a switch similarly marked to control the changeover. Many of these amplifiers also have a couple of additional inputs—well labeled—for connecting a microphone or a disc turntable.

On some of the better 16mm. sound projectors there is likely to be an additional control located near the sound pick-up; it may be a little lever, or a sliding knob or button. It is sometimes labeled "Fidelity." Its purpose is to alter the focus of the sound-scanning optical system, so that regardless of whether you have a reduction print from 35mm., which has the emulsion facing the lens, or a dupe from a direct-16mm. original, in which the emulsion is usually away from the lens, the sound pick-up will always be sharply focused, and the sound quality clear.

The sound controls of most 16mm. sound-film outfits are no more complicated than those of your radio. You'll find an "off-and-on" main switch, a volume control, and a tone control. Sometimes there may be two volume controls—one for sound-film volume, and the other for microphone or phonograph volume. These are clearly labeled, too. And sometimes you may find two tone controls, as in a fine radio, one to control the low frequencies, and the other the highs.

These controls are used just as you would use the corresponding controls on your radio or phonograph at home. In some projectors, you'll find the tone control marked "low" and "high"; in others, the high end will be marked "voice," as that is the setting that gives the best intelligibility, while the low end will be marked "music," as that setting gives the stronger bass quality most folks like in recorded music.

It is important to realize that each individual projector, and each film, will have its own best settings for tone and volume. You can play the same reel on two different projectors—even of the same make—and find you'll require different tone and volume settings. Different reels, naturally, will have different recording characteristics, and will require different projector settings to get the best out of them. There is no fixed rule for making these settings: go by what sounds best to you—and don't be afraid to change tone or volume during a reel if you think you can make the sound quality better.

If you can, it is always a good idea to have some sort of a rehearsal before putting on a show, so that you can familiarize yourself with the character-

istics of the projector, the sound-quality of the film, and the acoustical quality of the auditorium. In this connection, remember that if you rehearse in an empty auditorium, you will need to step up the volume a bit for the actual performance, for the bodies of your audience will absorb a surprising lot of the sound. Speaking generally, try to keep your volume level such that if you stand in the middle of the auditorium and listen, it will be right. If you try to gauge the volume by what you hear back by the projector—even if it is blimped—you will usually get it too loud to suit the average audience.

Similarly, it is handiest, of course, to put the loudspeaker (or loudspeakers, if you have one of the more powerful outfits) on the floor below the screen. But you'll get much better sound quality, and usually better volume, if you put the speakers higher up. The ideal position is behind and slightly above the screen, pointing slightly down toward the audience.

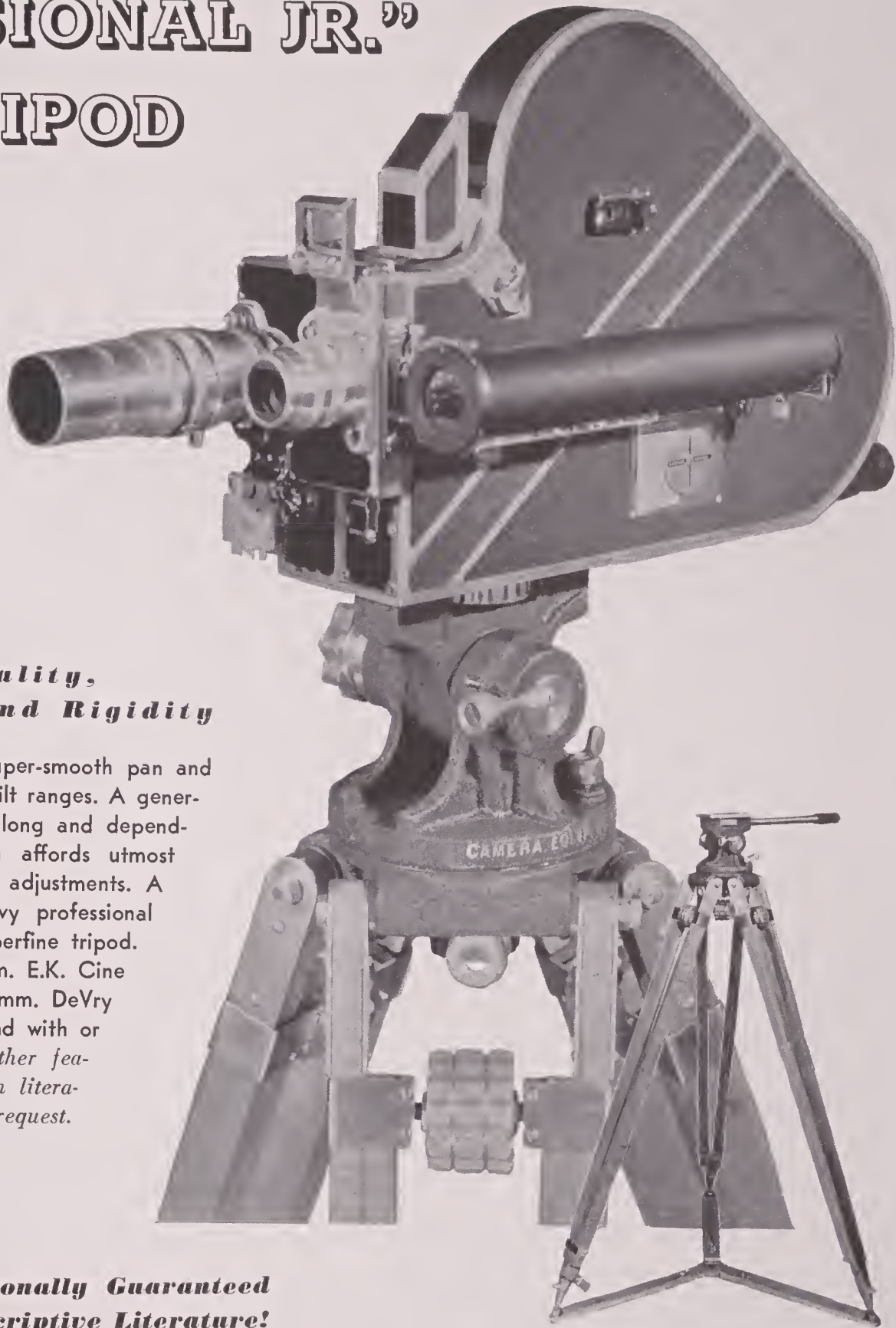
The actual operating controls of the projector, as a projector, are usually separate from the sound controls, though they may be grouped on the same panel in some designs. There are separate switches for turning projector and sound on and off, a separate switch for the projection-lamp, and in some machines, a separate control for running the projector at silent or sound speeds.

When you start a show, remember that while the projector and the projection-lamp start instantaneously, the amplifier—like a radio—usually requires a minute or so for the tubes to warm up. So make it a habit to turn on the amplifier several minutes before the show is due to start. Some 16mm. projectors have a little telltale pilot-light to indicate when the amplifier is on and ready to operate; others don't. But you can nearly always tell when the amplifier is ready for action by one or both of two signs. In many projectors, the exciter-light at the sound pick-up doesn't go on until all the tubes are warmed up and operating. And always, when the amplifier is on and everything is functioning, you'll hear a little hiss coming from the loudspeakers, and caused by the glow from the exciter-lamp affecting the photocell of the sound pick-up and sending a little "background noise" through the reproducing system.

Anyone who has ever given silent movie shows before an audience knows that it is a "must" to have a spare projection lamp available at all times, in case the one in the machine burns out—as it always does at the most embarrassing moment. (Have you noticed they never seem to burn out when you're running your own film just for yourself—?) Well, in sound projection, you should add to this a spare exciter-lamp bulb. This is probably the shortest-lived part of the average sound projector—and without it, you just can't project sound. The photoelectric cells that translate the sound into electrical impulses for the amplifier and loudspeaker are

"PROFESSIONAL JR."

TRIPOD

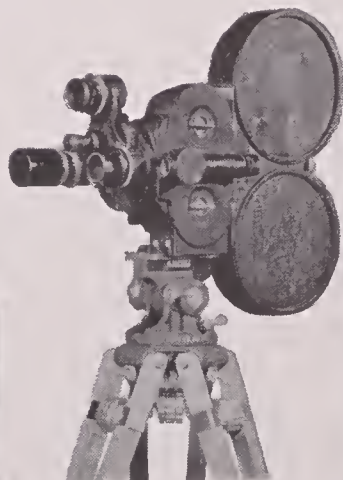


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"Professional Jr." tripods are used by leading Newsreel companies, 16mm and 35mm motion picture producers, the U. S. Government,—Signal Corps, Navy Department, and Office of Strategic Services—for important sound and silent work.



Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface.

Left—35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
 1600 BROADWAY NEW YORK CITY

usually long-lived, but if you can carry a spare photocell, you'd better do it. In the same way, the amplifier tubes will take a good deal more use and abuse than those in a radio, but when they go, it helps to have a spare. END.

Hyperfocal

(Continued from Page 100)

$f:11$. This will give us 2×2 divided by $11 \times .001$, which evolves to 4 divided by .011 and in turn works out to a hyperfocal distance of 363 inches or 30 feet. At this setting, everything from 15 feet to infinity will be adequately focused.

For contrast, let's consider a very short-focus lens, like the $12\frac{1}{2}$ mm. lenses used on 8mm. cameras. Working it wide open at $f:1.9$, the formula would figure out as $.5 \times .5$ divided by $1.9 \times .001$, which comes down to .25 divided by .0019, and gives us 131 inches or 10.9 feet as the hyperfocal distance for this lens at this wide-open aperture. Using the same figuring for the same lens stopped down to $f:11$, we find the hyperfocal distance in this case has moved up to $1\frac{3}{4}$ feet from the camera. No wonder we get such remarkable results with fixed-focus eight!

But there are times when we may want to obtain adequate focus on some secondary object or person nearer the camera than either the principal subject or the hyperfocal point. Or we may want to let our far limit of good focus fall short of infinity, to eliminate a disturbing background. In this case it will be useful to know something about depth of field, and how to make it work for us. Technically, depth of field means the distance between the nearest and farthest objects in acceptably sharp focus.

If you're mathematically minded, you can determine these two points by the following formulas:

$$\text{Near} = \frac{D \times H}{H + D}$$

$$\text{Far} = \frac{D \times H}{H - D}$$

In each case, D represents the distance from camera to object, and H represents the hyperfocal distance under the particular conditions of stop, focal length and circle of confusion applying to that particular shot.

To illustrate this, suppose we use the 2-inch lens we've been talking about, at its maximum aperture of $f:2.5$. We've already found the hyperfocal distance for it—133 feet. Assuming our object is 40 feet from the camera, we get this equation:

$$\text{Near} = \frac{40 \times 133}{133 + 40}$$

This equals 5320 divided by 173, and gives us approximately 30 feet as our near limit. In this same way we find the far limit of good focus by applying the second formula, which works out as 4×133 divided by $133 - 40$, or 5320 divided by

93, and gives us 57 feet as the far limit of good focus.

Since the hyperfocal distance is a basic factor in these calculations, and it, in turn, varies according to the focal length of the lens and the stop being used, a little work with pencil and paper will show you just how and why the depth of field increases as the focal length decreases or smaller stops are used, and why with longer-focus lenses, or larger apertures, the depth decreases.

An understanding of these two simple optical factors—the hyperfocal distance and depth of field—can go a long way toward simplifying your focusing problems. As I said at the start, once you know how to put the hyperfocal distances to work for you, you will know how, and to just what extent you can make any cine lens serve in an emergency as a fixed-focus, though not always universal-focus lens.

And when you have familiarized yourself with the depth of field characteristics of your lens, you'll find you can make this factor work for you in two ways, as the professional does. When you want "pan-focus" or extreme-depth effects, you can get them by using a short-focus lens, well stopped down.

And when—as in making close-ups and the like—you want to focus selectively, so that your picture will concentrate attention on the subject, without intrusion from either the background or the foreground, you can do that by using longer-focus lenses and larger openings.

Neither a hyperfocal setting nor reliance on depth of field can ever altogether take the place of precise focusing on the subject. But they can come in mighty handy in emergencies!

Naturally, the figures that can be derived from these formulas can be reduced to the form of handy charts or tables. In fact they have been, and frequently, in such reference works as Jackson Rose's "American Cinematographer's Handbook." But sometimes you may find yourself caught in the field, wanting in the worst way to know the answer to some problem in this line, only to find that your chart is in the camera-case five miles back! And at a time like that, you'll be well ahead of the game if you know how to figure out the answer for yourself instead of relying on a hazy memory of figures in a table you probably glanced at only casually. END.

Professionalizing the Bolex

(Continued from Page 98)

turret, and to remount it in a false front-board as shown in the illustrations, without affecting the original separation between lens and film-plane. With this construction, the camera-head could be moved behind the lens on the shift-over very much in the manner of a 35mm. Mitchell.

The actual focusing system was provided by one of the excellent visual focusing systems made by Bell & Howell for use in their magazine-type "Filmos." This was simply mounted on the left-

hand side of the camera, in such a position that when the camera-head was shifted to the right and up by the shift-over mechanism, the ground glass of the focusing system was brought into place behind the lens, and precisely in the focal plane. This provides a completely accurate focusing system which gives a highly magnified image, right-side-up and laterally correct.

When the camera is shifted back into photographing position, the regular Bolex finder, mounted just above the focusing magnifier, is aligned with a rectangular opening in the false front-board. Another opening gives access to the front starting-button of the camera's spring motor.

The new base and front-board into which camera and shift-over are placed, and in which the turret is mounted, presented a perplexing construction problem under today's wartime conditions. Palmer's original plans called for a casting; but both foundries and metal have more important purposes to serve these days.

As a substitute, he finally utilized Masonite "presdwood" composition-board. This is non-strategic (and hence free from priorities), easily worked, and surprisingly strong. When painted with black crackle-enamel and baked for four hours at a temperature of around 200 degrees, it takes a crackle finish which makes it indistinguishable from metal. Using the camera under the somewhat strenuous conditions of professional 16mm. production has indicated that this Masonite construction is very nearly as strong as metal, and considerably lighter.

Palmer has also used the same material for the construction of the external, 400-ft. magazines shown in the illustrations. As will be seen, these magazines are mounted on top of the camera, and a curved segment is cut away at the bottom to permit the magazine to fit snugly over the curving top of the Bolex camera-box. Each of the two film-chambers has an individual cover, held in place by two small spring clips, and completely removable. This construction, incidentally, should be a convenience in the darkroom, or when loading magazines in a changing-bag in the field, when it is not always easy to fit a screw-type cover-plate into its thread.

The unexposed film is fed from the regular laboratory-packing core, which fits onto a spindle. The exposed film can be taken onto a similar core, or onto a regular 400-ft. projection reel. Palmer favors the latter, as it runs more true, and winds easier. Velvet light-traps are of course provided.

The only metal used in these ingenious magazines is that necessary for the spindles and take-up belt pulleys, the clips that hold the magazine covers in place, and the ingenious hinge-and-catch device that attaches the magazine to the camera. In this latter, a small bar or rod is attached to the front edge of the camera-housing, and a simple hook on

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On location with ARTHUR MILLER, A.S.C., Director of Photography and DON CARSTENSEN, Gaffer, for the new 20th Century-Fox feature, "The Moon is Down"



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the magazine is engaged with it. The magazine is then dropped down onto the camera, and locked in place with a small lever catch.

It is also noteworthy that this entire conversion was effected at negligible cost, from non-strategic materials, and is one which could be easily emulated by almost any 16mm. professional or amateur, or even 8mm. amateurs who own cameras of similar design. END.

Bob De Grasse

(Continued from Page 92)

a sequence, and the sequences into a complete picture.

"Meantime, I kept my nose to the grindstone on the set, too, and did my best to learn everything I could about the how and wherefore of photography. I must have learned something, too, for it wasn't very long after that that I found myself promoted to the rank of Second Cameraman.

"By this I don't mean that I did the work of the Second or Operative Cameraman of today. In those days, the Second Cameraman was the fellow who operated the additional camera that stood beside the First Cameraman's camera to record a second negative from which the prints for foreign distribution were made. In addition, he shot inserts and any minor scenes such as we'd turn over to a second unit today. Sometimes the Second was called "Associate Cinematographer;" I think that's really a more accurate term for what he did.

"At any rate, I served my apprenticeship in this post, and finally—it was about five years after I'd started in as an assistant—I found myself shooting my first picture alone, as a full First Cameraman. It was a western for FBO (the forerunner of today's RKO), starring Harry Carey and entitled 'Miracle Baby.'

"Considering that title, and the fact that at 23 I was probably the youngest First Cameraman in the industry, I suppose it would give this story a nice literary touch if I could say that I clicked from the start, and was hailed all around as the 'miracle baby' of camerawork.

"Only it wouldn't be true. Quite the reverse! 'Miracle Baby' was a decidedly unimportant little picture—just the sort of thing a green young cameraman could safely cut his teeth on, for as long as he managed to get a recognizable image on the film, the picture would make money with the small-town and juvenile audiences that demanded a 'western' every Saturday night. But good or bad, it would never come to the attention of the really important people of Hollywood production.

"However, I stayed on as a First Cameraman. I remained with Harry Carey as long as he continued to star for FBO, which was, I think, about two or three more pictures. Then I was simply switched to photographing other 'horse operas' with other cowboy stars.

"By the time sound began to come in some five or six years later, and FBO had changed to RKO, I reached the conclusion that I was making no progress fast. I was a full-fledged First Cinematographer all right, and had even gained membership in the A.S.C.: but the pictures I was getting were steadily less and less important. And by the time they put me to photographing a dog star, I decided I'd better do something drastic while I was still young enough so that with a fresh start I could work my way somehow into pictures that would in the long run give me more of an opportunity for advancement.

"So I deliberately quit as a First Cameraman, and went back to the position of Operative or Second Cameraman.

"And right there, my luck began to change. Operative Cameramen weren't quite as scarce as they are now, but I guess they weren't very plentiful, either. Anyhow, I found myself getting assigned to operate for some of the best cinematographers in the industry, and on some of RKO's biggest pictures. I worked with Eddie Cronjager, A.S.C., on 'Cimarron,' with Roy Hunt, A.S.C., on 'Dixiana,' and with other top-flight cinematographers like Leo Tover, A.S.C., Karl Struss, A.S.C., Nick Musuraca, A.S.C., and the rest, all on real 'A' productions. I was getting the finest sort of post-graduate course in really fine cinematography.

"After a few years of this—it was in 1931 to be exact—I had an opportunity to go to England as a First Cinematographer for Basil Dean's Associated Talking Pictures. I spent nine very interesting months over there, and then returned to Hollywood.

"Back home at RKO, I took things up where I had left off, and went on as an Operative Cameraman. It was my good fortune to be teamed pretty consistently with the late Henry Gerrard, A.S.C., who was one of the studio's top-ranking cinematographers, and one of the finest artists ever to use a camera.

"During those years, Henry Gerrard was particularly associated with RKO's biggest star, Katherine Hepburn. Indeed, she had insisted on having a clause in her contract which specified that she was not to be photographed by any other cinematographer.

"After his tragic death in 1935, both Miss Hepburn and the studio felt that as I'd been his fellow-worker on so many pictures with her, I was the man best fitted to carry on with them and give her the type of photographic treatment she had found so satisfactory.

"So once more I found myself a full-fledged Director of Photography—this time on top-flight 'A' productions. And thanks to the photographic polish I had gotten during those years as an Operator for so many of the industry's finest artists, I've remained as an 'A' picture cinematographer ever since. I did many pictures with Miss Hepburn up to the time she left RKO. One of them was

'Stage Door,' in which Ginger Rogers got her first chance at a straight dramatic part. She liked my work, too, and I switched over to photographing her. We did quite a long series of pictures together, not only the musicals in which she co-starred with Fred Astaire, but others in which she starred alone, up to and including 'Kitty Foyle,' for which she won the Academy Award two years ago.

"Since then, I've had my share of RKO's best pictures, and during the past year I've also had the privilege of making several pictures for other studios. That's an experience I think every cinematographer ought to have. Of course it's pleasant if your association with one studio can continue unbroken for year after year, as it has for so many of us; but there's also the danger that you may slide too easily into the narrow little routine of one studio. Getting cut and making a picture on some other lot can be a stimulating tonic. After seeing how other folks in other studios think and work, you're bound to come back to your home lot with a fresh mental viewpoint which can't help showing up in your work.

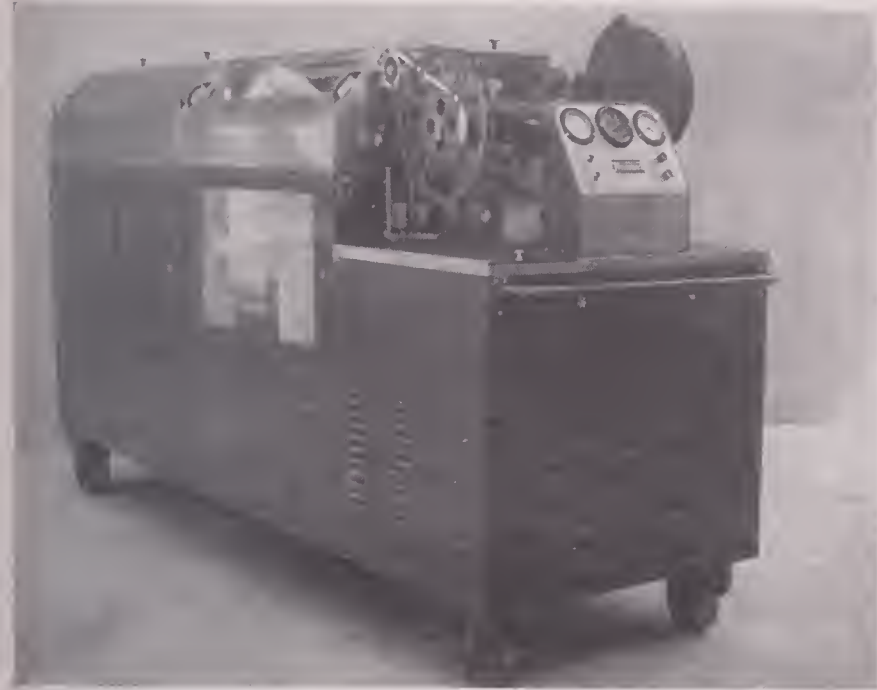
"My last assignment, photographing Barbara Stanwyck in 'Lady of Burlesque,' for Hunt Stromberg, was like that. And last summer, when Universal borrowed me to photograph Marlene Dietrich in 'Pittsburgh,' I'll admit there was an extra thrill in recalling that the last time I'd worked at that studio, nearly 23 years ago, it was as an obscure Assistant Cameraman!

"Looking back on it all, I believe one of the most important things I can pass on from my own experience to younger cinematographers is the importance of taking your time and choosing the *kind* of picture upon which to make your debut as a Director of Photography. If you grab hastily at the first chance for advancement you get, it's likely to be on 'B' pictures or westerns—and once you get started on those, you can look forward to a fight every bit as long and heartbreaking as the one you've just finished working your way up, for cinematographers can get 'typed' just as much as actors. It's much easier to get onto these program films than to get away from them to 'A' productions.

"For 'B' pictures and 'horse operas' seldom give a cinematographer much chance to distinguish himself. They're usually made on the shortest of schedules, with cheap or remodeled sets, and with comparatively unimportant players. And once you get 'typed' as a 'B' picture man, it's almost impossible to make the front-office executives believe you can handle a big production or be trusted to make their valuable glamor-girls look lovely.

"But if you wait until you can make your start on at least a moderately good picture, you'll have a chance to show what you can do right at the start. Then if you have it in you, you won't have nearly so much trouble getting assigned to bigger pictures that

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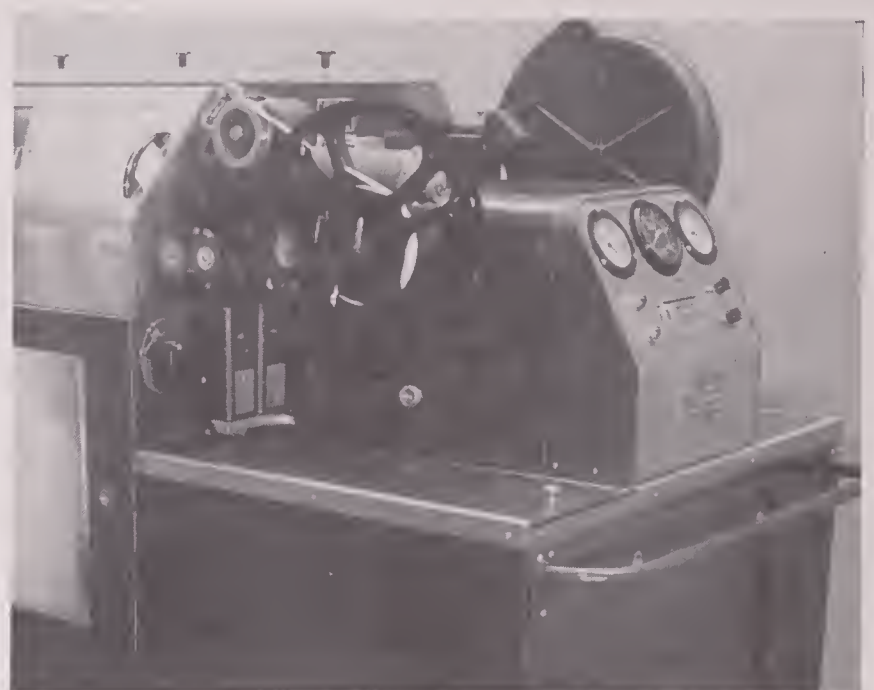
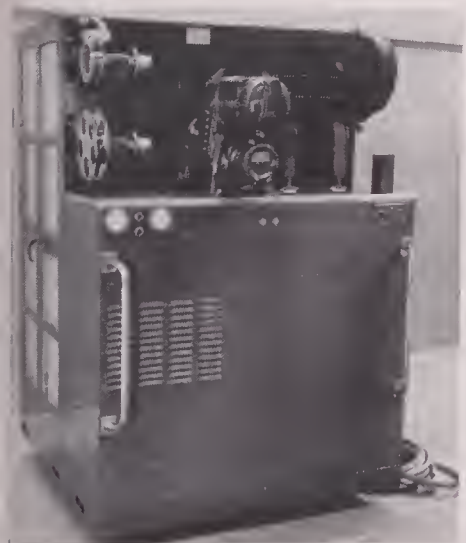
Special purpose means that this machine was designed for use in a limited space. Its dimensions are 78" high, 48" long by 42" wide.

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"Of course it's hard not to say yes the first time you have a chance to step up to a First Camera assignment. And it seems terribly long, sometimes, waiting for opportunity to give a better knock at your door. But it's a much longer and harder wait, I can assure you, trying to make your way up from the dead-end street of the program films. In my case, it took close to twelve years, and I had to swallow my pride and step down to operating and wait until the right opportunity came along. I'd have been years ahead if I had waited for the right opportunity in the first place."

Probably the most outstanding single characteristic of De Grasse's work is the fact that regardless of whether or not story, settings and action afford him opportunities for strikingly pictorial camerawork, he manages always to keep the players appearing uniformly at their best, and to carry through even a routine assignment with an effortless smoothness which, while it keeps the camera unobtrusively subordinated to story values, none the less reveals to the trained eye the touch of a real master of the camera.

"When I'm assigned to a picture," Bob will tell you when you bring up this subject, "I haven't any prearranged plan. Each picture is different: some give you a combination of story values, setting, and cast which give you a clear chance to go to town photographically;

on others you've got to hold yourself in or your camerawork will dominate the picture to its detriment as entertainment. But whatever the conditions are, there are always the players to be considered. They're what the studio is really paying you to photograph; they're what the public is really paying to see. So as I figure it, your first duty is to see that the people are always as favorably photographed as possible.

"How you do it is an individual matter. Some stars are virtually camera-proof, and make this part of your lighting and camera job easy. Others demand specialized—even stylized—lighting and angles. When a player like this is the big star of the picture, you've got to see to it first of all that he (or she) gets that particular style of treatment first of all, even if you have to sacrifice a bit here and there with the rest of the cast or the action to do it. Then you have the problem of working in the rest of your lighting around this essential and often tricky set-up.

"For that matter, every picture is a challenge to the cinematographer. Especially under today's conditions, with restrictions on this and shortages on that—not to mention rationed and many times made-over sets—it seems to me that almost every scene and set-up stands there and gives you a nasty grin, as if to say, 'You can't do it.' Then you've got to figure out some way to do it—even if it seems impossible!

"Sometimes you can go back into your

own past experience and find some similar problem you met and licked years ago, and use a similar solution on the present headache. Sometimes you may have to go 'way back and remember what some veteran First Cinematographer for whom you operated did it. And sometimes you've simply got to come up with something really new in order to get that shot on the screen as you and the director want it in spite of everything. Whichever way it is, you can find a lot of enjoyment trying to lick those obstacles. You may get tired and worn out in this business—but with new challenges to your ingenuity coming up every time you make a set-up, you'll certainly not get bored!" END.

16mm. Vs. 35mm.

(Continued from Page 91)

work. In other words, color has the incontestable ability to portray form and texture in a more accurate way than can monochrome, partially making up for the two-dimensional limitations of the motion picture medium.

'Of course, good monochrome photography can convey third-dimensional impressions, but they are not necessarily accurate ones. As a matter of fact, this very ability of monochrome photography to present things not quite as they are, makes it the powerful entertainment medium that it is. It can glamourize or detract at will, depending only on the skill of the photographer.

But when the primary requirement is to portray things as they really are, to show the person being instructed by a training film what the device or situation really looks like, color is of such value that I would rate it tops. I would prefer a silent color film as a visual aid to a black-and-white sound film, even though I am thoroughly sold on the tremendous contribution of a *good* soundtrack.

Well, if the point is conceded that color is itself enough reason for considering 16mm. production, are there any other factors which make production in the small size impractical?

If you talk to someone accustomed to the usual 35mm. production, and who has undertaken direct-16mm. production in color, you are likely to get a whole roster of complaints about the problems that color introduces. He will first point out that the equipment available is inadequate, that the truly professional 16mm. cameras are as scarce as new tires. He will mention the problems arising from the short latitude of Kodachrome film, which makes necessary extremely precise exposure determination. He will complain of threadbare nerves obtained while waiting for the film to be processed, since Kodachrome is not handled on the super-fast schedule of overnight 35mm. service.

Further, he will complain of the difficulties in matching color in sequences when changing hours or days make skies and backgrounds look quite differ-

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ent. He will then go into the dearth of editing equipment of theatrical production caliber, the difficulty of making film effects except in the camera, the non-existence of 16mm. sound-recording facilities for re-recording from upwards of six sound-tracks, or the problems of first-quality sound reduction prints. He may end up his case against 16mm. color production by pointing out that, if you have lived through these problems, your final 16mm. color prints will cost about five times as much as good black-and-white reductions from 35mm. negatives.

This dolorous series of problems which have come to some producers trying their first 16mm. color production are not so much an indictment of the 16mm. production as they are a result of attempting to apply very specialized and advanced techniques to a new medium in which the tools are admittedly somewhat elementary. The producers have tried too hard in attempting to use all their usual slick techniques before really being prepared to do so.

It is true that 16mm. camera equipment does not conform to 35mm. studio standards, notably as regards accurate parallax correction on finders. But it is largely through the elimination of many studio camera features, large magazines, electric drives, etc., that the 16mm. cameras get their ease of operation under tough conditions. The one essential feature for precise cinematography, a parallax-free focusing device, is available on several makes of cameras, and can be fitted to others without too much difficulty.

As for difficulty with latitude on Kodachrome, this should not be a great problem if the limits of the emulsion are not exceeded. It demands an entirely different type of lighting, both on exteriors and interiors—lighting which is much flatter, with only the subtlest suggestion of the usual modelling and backlight. Any attempt to use the conventional monochrome lighting will inevitably result in exposure troubles because the difference in brilliance between the highlights and shadows of good black and white lighting is just too great for the Kodachrome emulsion to span. This does not mean that the "professional" appearance of the picture is lost with a flat lighting scheme, for the modeling in light and shade is replaced by color contrast, giving equal opportunity for cinematic skill. This same factor, by the way, applies almost as much to 35mm. Technicolor as it does to 16mm. Kodachrome.

The slight differences in lighting conditions, which are inevitable with outdoor shooting, and give rise to uneven color quality, are unquestionably tough; but they can be licked. A good training film will consist very largely of close-ups where minor variations in color-quality should not be noticed, especially if compensating filters are used. Furthermore, even if there are some color variations, they still do not destroy the ability of color to give a more accurate impression of the real thing.

The time involved in processing Kodachrome and then making a cutting print to review as "rushes," is bad when working on a tight schedule when retakes are very costly. There can be a good deal of time saved by checking the original Kodachrome on a viewer like the Craig which, if properly handled, cannot harm the film. This does not entirely substitute for a projection of a duplicate, but should show any need for retakes. At the same time of checking the original, certain takes which are obviously unusable can be removed, making the editing job easier when it comes to matching back to the original, and reducing the footage to be work-printed for cutting purposes.

Again as in lighting technique, editing 16mm. Kodachrome for the time being must be handled differently from usual 35mm. practice. Although it is possible now to obtain 16mm. Kodachrome with key numbers, there are few duping facilities able to print the key numbers onto the cutting print. It is therefore desirable to keep a very careful slate record of every take, and to retain the slate code-numbers on each scene whenever it is shortened. The usual 35mm. Moviola equipment has been converted to 16mm. in a few instances, but these are very few, so it is necessary to make use of intermittent viewers operated between rewinds on the cutting bench.

Film effect work is another phase which has caused many to discard 16mm. production as not suitable to real professional techniques. Dissolves, montages, and super-imposures often play a major role in making a training film tell its story. These effects are all being done successfully by several concerns specializing in 16mm. production, and should be available for all essential training film uses. The fact that special-effects are not quite so easy to obtain might have the beneficial effect of holding them down to a minimum of really worthwhile contributions instead of allowing effects to be sprinkled in just to make the picture seem more polished. The less frills in a training film, the better it is, and special-effects should not be used as "window dressing."

Along the same lines of unessential fanciness are spectacular sound-effects and musical theatrics which are most out of place in a training film, regardless of their value in an advertising or entertainment picture. This, then, eliminates most of the problems of sound-recording, for direct-16mm. sound leaves little to be desired for straight recording quality.

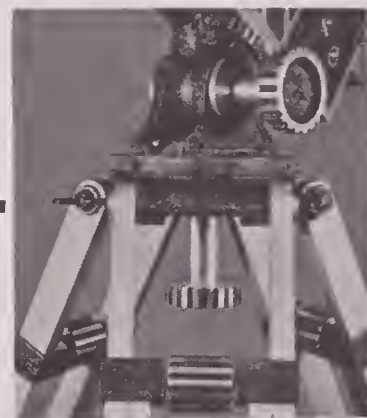
To sum up the case for 16mm. production, let some of the superior abilities of the medium be emphasized. The camera equipment is certainly more convenient to carry and use under the difficult shooting conditions which are the rule with training films. When necessary, a set-up can be made in a fraction of the time of typical 35mm. practice, improvised parallels sufficient for the 16mm. equipment offering little construction problems.

The depth of focus of the 16mm.

camera lens equipment, even at wide apertures, is of tremendous advantage in many cases, "pan focus" being almost automatic under good light conditions.

There is a great saving in raw materials due to the shorter length of 16mm. for a given screen time, the instantaneous starting and stopping of the cameras, and the ability to discard bad takes even before the cutting print is made.

Eclipsing all other advantages of 16mm. production, though, is that it brings practical, first-rate color which enables the training film to do a better job. And finally, lest anyone bring up the contention that direct 16mm. production might lose an important film valuable 35mm. outlets, let us remember that thanks to the inherently grainless



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structure of 16mm. Kodachrome, 16mm. is already being "blown up" to 35mm., in both monochrome and Technicolor, for theatrical short-subjects and for combat report-films publicly released by the Army and Navy. Thus properly-handled direct 16mm., in addition to fulfilling every other requirement of training film production, is the *only* medium capable of giving full-color release prints in *both* 16mm. and 35mm. without imposing the handicap of prohibitive cost. END.

Tempo

(Continued from Page 90)

Camera dissolves are used effectively in all sequences of "War Against Waste." For example, in one of the sequences the thought "Where does all the waste paper come from" is portrayed uniquely. We started with a caretaker and his pointed rod which speared pieces of paper out of the flower bed in front of one of the offices. With the camera on the ground one can see only the care-

taker's feet and action of the pointer. This dissolves into a waste basket near the legs of a lovely office stenographer. Pieces of waste paper were dropped into the basket, this lapping to armsful of waste paper in the blueprint trimming department, a deluge of waste paper and boxes going into a large truck on its way to the paper baler, and, finally the neatly stacked piles of baled paper. Each scene is on the screen only long enough to let the audience know that paper gathered throughout the plant soon becomes a mountainous pile. With the dissolves the scene moves at a swift and even tempo and the full coverage measured but 50 feet of film.

Dissolves are also used effectively in showing how 48-inch grinding wheels are used and recut several times until the 24-inch hub remains. Without dissolves this action would be choppy and tempo would drag.

Another short, effective scene shows how a large piece of scrap steel plate was salvaged and two pieces of usable steel obtained from the odd-shaped original that was once sent to the foundry cupola. With the camera at a high angle, looking down on the original piece, the sections rapidly dissolve. The scenes are on the screen but one second, but the operation is readily understood and again the tempo is maintained.

The procedure for salvaging wood from boxes, crates, etc., of incoming shipments is similarly handled through dissolves. Quickly, smoothly, the dissolves cover the many places where this scrap lumber is used and re-used throughout the plant as spacers for piling and storing material. Each use is important, but more than six feet of any one scene would become monotonous.

It's true a cameraman can get into difficulties if a scene "flops" and that he must then start the dissolving sequences all over again. But as each scene is comparatively short, the operator was rehearsed and KNEW that the "cream of the operation must be on at the count of eight." It is also true that dupe negatives and optical printing dissolves or wipes would solve the cameraman's difficulties, but the delay in getting the finished dupe, the expense of added retakes and optical dis-

solves and loss of quality by printing from a dupe negative, we believe, offset the bugbear of a string of camera dissolving scenes.

Just because a reel holds a thousand feet of film is no reason why it must have a thousand feet. If the tempo of a film can be better held with less footage, act accordingly. Never forget that industrial films are meant for an audience of potential prospects and buyers of ones' products. To allow "padding" through inclusion of uninteresting and draggy footage in the film will affect the tempo of the audience as well as the film. END.

Special-Effects

(Continued from Page 89)

evitably be compressed, so that no words are necessary to tell the audience that this is a torpedoplane, or that is a carrier being dive-bombed.

In the documentary scene, you may see a downward-curving trail of black smoke. The narrator tells you it is a Jap plane which has been shot down. You seldom, if ever, see the actual hit or the plane's ultimate crash on the screen. The one may have occurred two or three miles above or to one side of the camera; the other, perhaps just as far off in another direction. Both of them far beyond actual camera-range. In a motion picture that is to be accepted for entertainment purposes, the camera must show the *entire* sequence of action: the approach of the attacker—close-ups that identify the plane's crew as enemies—men of our own forces serving their ack-acks—the actual hit on the enemy plane—the fall—and finally the crash into the sea. For forty years audiences have been conditioned to expect at least reasonable completeness of visual continuity in entertainment pictures: and while today they may accept less in films of a documentary nature, they would certainly feel something missing if that continuity were missing from an entertainment film.

The other day, I saw in a newsreel



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I'm giving double!"



a sequence which—as a newsreel—thrilled me. It was a suicide dive by a Japanese bomber into one of our aircraft-carriers. It showed a trail of black smoke—far distant and small—heading waveringly toward the camera. Just as one could begin to distinguish a speck which might be a plane, the scene abruptly ended, as the camera-crew very prudently dashed for armored cover. The next shot was of the blazing wreck of the plane, which had crashed against the carrier's "island" superstructure, close by the position of the cameramen when making the first shot, so the narrator said. As a news scene of genuine action, it thrilled me, for I knew it was the real thing. Cut into an entertainment film, it would have left me—or any audience—cold, because it left out the really dramatic parts of the action.

Only by shooting such scenes in miniature can we make them conform to the necessary pattern of entertainment-film continuity. We can compress a 200-ship convoy into the limits of our frame, showing the vessels trailing off into the distance as in reality, but making them big enough, and showing enough of them in the scene, so that we see and feel the dramatic impression of a real convoy. With miniature planes and ships, coupled with the use of miniature and full-scale projected-background scenes, we can portray the drama of an aerial attack, or the bomber's suicide dive, in a way that brings the audience the whole story in correct—and complete—sequence.

I am quite sure, for instance, that the Marines who actually defended Wake Island never saw as much of the Jap fleet which shelled them as Gordon Jennings' miniatures brought to the screen in the recent picture of that name; but the miniature sequence in the entertainment film put over the dramatic import of the action in terms the movie-going audience could understand.

Two of our own recent productions—"Air Force" and "Action in the North Atlantic"—have involved just such problems as I have been discussing. In "Air Force" we had, among other things, to portray the sinking of a Japanese battleship by a Flying Fortress, and phases of the Battle of the Coral Sea involving attacks on Japanese carriers and warships by torpedo planes, dive-bombers and Flying Fortresses. In "Action in the

North Atlantic" much of the action takes place in an Atlantic convoy, and climaxes in an attack on the convoy by a Nazi U-boat "wolf-pack," in which both surface ships and submarines are sunk.

It is not too much to say that both pictures depended upon special-effects camerawork to the extent that they absolutely could not have been produced without it. In both instances, every trick of the trade had to be called into action to get the scenes on the screen—miniatures, process-projection backgrounds, matte-shots, optical superimpositions, and multiple combinations of all four.

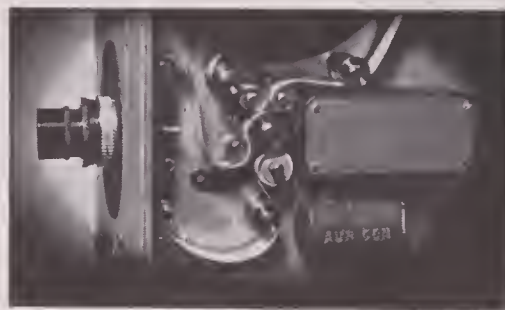
In these pictures, as is the case in every studio with productions of a comparable nature, a very considerable proportion of the films' ultimate release footage was handled by the special-effects personnel. In our case, this was immeasurably aided by the organizational set-up of the Warner Bros.' Special-effects Department, which, as laid out originally by Fred Jackman, A.S.C., and since continued and expanded, is virtually a studio within a studio. Almost every department of the studio has its counterpart in the special-effects organization. We have our own designers, art-directors and set-building facilities; our own camera and electrical equipment, personnel, and stage crews generally. The department has its own film-laboratory and cutting facilities, its own business office, and even writers.

Most important, I believe, under today's conditions, is the unit plan of organization under which the department now operates. Instead of rigidly centralizing the entire department's output under a single head, the department, under my general supervision, has been organized into units, each of which, under a capable special-effects director like Jack Cosgrove, who handled "Action in the North Atlantic," Roy Davidson, who had charge of "Air Force," and Lawrence Butler is capable of handling all the varied special-effects work on a group of several productions. With these units are teamed the best specialists in different types of special-process camerawork—men like Hans Koenekamp, A.S.C., Ed DuPar, A.S.C., Rex Wimpy, A.S.C., Willard Van Enger, A.S.C., and Warren Lynch, A.S.C.

In my own position as Head of the department, this organizational plan

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leaves me free to serve as a liaison between the department and the studio's executives and writers. In this way, perhaps for the first time in the industry, the special-effects work can be planned long before it is actually needed—written into the scripts before they have jelled into final form. This permits additional time for planning and staging difficult special-effects work, and often makes it possible to simplify production problems, or strengthen dramatic values by integrating special-effects contributions with the script at birth, so to speak, rather than as an afterthought.

It makes also for better scheduling and budgeting. This is increasingly important these days, for as the shortage of skilled technical and craft talent in this specialized field has increased, the costs of special-effects work have skyrocketed to a point which would have been unbelievable a few years ago. It is by no means uncommon for the special-effects sequences of an important major feature to include from half to two-thirds of a picture's release footage, and to carry a budget—for special-effects alone—a good deal higher than the entire cost of many a complete "A" production.

While these unavoidably rising costs are unfortunate, they are none the less doing special-effects work in general a good turn. Originally—and especially since the introduction of the projected-background process—special-effects work in general had been regarded largely as a means of either putting the impossible on the screen, or of getting a scene which would be prohibitively expensive if filmed conventionally, on the screen at a cost of only a few hundred dollars. Today the industry is being educated to realize that special-effects camerawork can be an increasingly valuable asset as it is given more time and money, and increased scope.

For example, in our recent productions we have been able to build miniatures on larger and yet larger scales, which have been considered impossibly expensive a couple of years ago. We have had to: the scope of the action has in many instances outgrown the confines of studio tanks. For many of the "Air Force" and "Action in the North Atlantic" miniatures we used the Pacific Ocean off Santa Barbara as a miniature location. Our miniature battleships were

so big that two of them completely filled a 50-foot railroad flat-car en route to the location. And necessary mechanisms for manoeuvring the ships, firing the guns, creating explosions, etc., could not have been operated in smaller-scale vessels.

Under today's wartime restrictions, we are finding new uses for special-effects techniques, too. For example, until today's priorities on transportation virtually eliminated all travel which is not absolutely essential, and the coastal dim-out regulations eliminated the making of night exteriors, whenever we needed a background scene we didn't already have in our library, we considered it a matter of course to send out a skeleton crew to photograph those backgrounds wherever they might happen to be. Today, we make the backgrounds in the studio, on matte paintings, backings, miniatures, or a combination of all three. And we are finding that backgrounds made this way are even more suitable for our purposes than most actual exteriors.

A very spectacular example of this occurred in the filming of "Mission to Moscow." One sequence showed Walter Houston, as Ambassador Davies, leaving Germany for Russia. In Germany, the Nazi officials had striven wordily to impress upon him what an impoverished and peaceful country Germany was. But as his train pulled out of Hamburg, he looked from his car window and saw troops swarming on the station platform, mechanized troops on the roads, and the whole countryside an arsenal of warlike preparations.

Obviously, it was impossible to send a camera crew to Hamburg to get these shots—even if the R.A.F. has left enough of the Hamburg Bahnhof to photograph! So we created them on the stage, in miniature, using foreground miniatures with miniature backgrounds and forced-perspective backings, each of which was arranged to move past the camera at a different speed, so that the completed background shot gave the same differential perspective of movement in the different planes that one would get in a full-scale shot of the real thing. In some instances miniature figures provided the people in these backgrounds; in others, full-scale shots of actual people were added by multiple printing.

This technique has proven so successful that we make almost all of our background plates this way. Indeed, once the war and its restrictions are over, I am inclined to doubt if we will go back to the old method, for this gives so much more complete control over every phase of the background-plate—action, composition, lighting, dramatic camera-treatment, etc.—that it is really preferable from every viewpoint.

Another wartime problem we have to face in special-effects work no less than in regular production work, is that of the restrictions imposed on new construction in sets, props, and the like. Careful planning of special-effects scenes

can go a long way to minimize this problem, but there is another step I feel should be taken for the benefit of the industry as a whole.

For a number of years there has been a certain amount of informal interchange of equipment and, to some extent, set-pieces and large props between the special-effects staffs of the different studios. On "The Forest Rangers," for instance, Farciot Edouart, A.S.C., at Paramount, rented the excellent triple-head background projector built by Vernon Walker, A.S.C., at RKO, for sequences for which two of these "triples" were needed. In the same way, we have borrowed set pieces and equipment from other studios, or loaned ours to them.

But it seems to me that this procedure could be carried a good deal farther than it has been at yet. Several years ago the major studios organized a special-process patents pool, in which all existing patents on special-effects processes were pooled, and through which any studio could, by contributing its share toward the development costs, make use of any new inventions in this field developed by other studios.

I think a similar arrangement can be and should be made with regard to a pooling of special-effects equipment, set pieces, props, and the like. A comprehensive index of these items could be organized, and a pooling arrangement worked out, with adequate provision for ensuring suitable care and maintenance of such items when used by another studio. A year or so ago if you taxed your budget to build some specialized prop like a submarine interior or a device for manipulating full-scale or miniature planes in projection or miniature shots, and then found—too late—that some other studio had already constructed a similar item which you might just as well have used, it was only an irritation. Today, it is a waste of materials, money and labor

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which, in wartime, borders on the criminal. Let us hope that through some organization like the A.S.C. this problem can be constructively remedied before long.

As to the future of special-effects technique and its production utility, I believe we are only at the beginning of a chapter of tremendous potentiality. When the war is won, and the present abnormally high material and labor costs of this specialized work drop back to more normal levels, I am confident that we will see an even greater use made of special-effects processes than is the case even under today's conditions. We have gotten over this idea that special-process photography is only a means of doing things cheaper; we are learning every day that it is a means of putting scenes on the screen better, with stronger pictorial and dramatic values, and with a more certain control over every element of the scene. And as this new concept takes hold and grows, I am certain that we will see the various special-effects techniques playing an increasingly great part in our constant aim to put better pictures on the world's screens. END.

African Desert

(Continue from Page 87)

old kite seemed heavy, and heavy she was, for our tanks were full and we usually carried eight 250-pound bombs. It was always a relief to me to feel her lift herself clear and see the dust serpent die in its tracks.

We generally circled the field a couple of times gaining height and getting into formation before running out to sea or into the desert, as the case might be, before crossing into enemy territory. As we climbed up into the freezing level, my position was not a comfortable one for the rear half of my turret was open and it was my job to watch for possible enemy fighters coming from the rear or from above. As we had no heating appliance, my main concern was: "Would the cameras freeze up?"—a thought that made me feel even colder than the icy oxygen tube I held between my teeth.

I was always glad to hear No. 2 telling No. 1 over the inter-com that we had reached the position from which we would turn and run for our target. It was always a thrill to hear No. 2 announce that he had spotted the target and to hear his quiet voice directing us into position.

I would then start operating my camera, shooting the opening of the bomb doors and the bombs tumbling out. As the mount for following the bombs to the target was not complete—and besides we were too high to make it a good shot—I used to lean out over the side and try to follow them down.

After the flight, I always wondered at the great anxiety I felt from watching those deadly missiles sailing down on their mission of destruction, and at the great satisfaction I would have if the target seemed to be well plastered. With our bombs gone, the flak generally

started; these black puffs appearing in the sky beyond our tail made a good shot.

Our mission accomplished, we would turn and streak for the wire. Sometimes, we would see the dust plumes of enemy

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fighters taking off from their fields. These did not worry us, for our old kite had a fair turn of speed and we had the advantage of plenty of altitude; our concern was for the fighters which might already be in the air.

When we crossed the wire, No. 3 would be told to open up his sending set and notify our base that the target had been bombed and that all planes were returning. This signal sent, No. 1 would ask for music, and we would fly home with music in our ears, usually coming from Radio Rome. For us, it is well that Musso did not equip his army with violins instead of guns, for with the former they would have been sure of victory!

All flights were not as easy and as pleasant as this, as a few notes from my diary will show:

"7-10-41: Took off 7:30 A.M.; flew 60 miles to sea; damn cold. 8:40: Reported to No. 1 twelve planes flying on parallel course between us and shore. They were about 8,000 feet below us. I checked my 'chute and cursed myself for having forgotten my Mae West.

"As we turned and ran for target, they also cut in toward shore. I lost sight of them. Didn't like their movements. Bombed target at 9:30 exactly, from 17,500 ft. None of our protecting fighters in sight. (It was arranged that our fighters should meet us over the target and escort us back over the wire).

"About 9:30, I spotted what I thought to be four of our escort fighters overhead. Reported same and decided to get some footage of them. Got camera into position, but saw the 'planes were carrying black crosses.

"Told No. 1 fighters were Jerries; passed camera to No. 3, grabbed guns and fired at diving Jerry who was firing with cannon and machine guns. He levelled off below our tail. Other Jerries dived on squadron. They got a good reception from our guns. Squadron closed to very tight formation, nearly wing to wing.

"One German badly hit; he dove away. No. 3 plane of No. 3 flight attacked by two Jerries; port motor threw out oil and black smoke. Saw tracer bullets splashing on Jerry.; he pulled up and turned over just above me; could clearly see pilot clawing at cowling before he fell off into spin. Two remaining Germans break off fight.

"Our No. 3 'plane unable to hold formation; he dropped away. No. 2 'plane followed him. No. 3 'plane landed at emergency field, badly shot up. Two rear crew members seriously wounded, gunner died on way to dressing station. All other 'planes of squadron landed safely.

"Army reported finding one German Me-109F just on our side of wire. Very sore because cameramount not ready for flight; missed marvelous chance for sensational footage."

Yes, I missed a chance which never presented itself to me again, for a few days later I received a signal from Cairo telling me to report back to Headquarters. So I said "so long" to my South African friends, a grand bunch of men,

promising to return as soon as possible.

As I was leaving, a mount which carried my camera between the guns was completed; it gave a fine angle showing the muzzles of the guns and the course of the tracer bullets. A remote-control to operate the camera fastened onto the gun handle near the trigger. The main difficulty was to get away from vibration when the guns opened up. Another mount was to allow the camera to follow the bombs down to the target; it was to be operated by No. 2, the bomb-aimer.

At H.Q. I was told they wanted me to go back to Tobruk for awhile, but promised to try to get me back in time for my low-flying strafing shots. Fearing they might fail, I was not altogether happy with this assignment although Tobruk was always a thrilling place to be in during the siege—this I had learnt during a few weeks' stay in the early summer.

We left port before dawn on a very modern beautiful new type of ship. It was a beautiful trip until 3 P. M. when a high-flying Eyetie plane came over and let go six bombs. I was lucky to get three of these bombs hitting the water between us and a destroyer, really a good shot, and as they caused no damage, I was very pleased.

Things were again quiet until just after sunset when I think we were attacked by everything the Axis possessed: torpedoes, bombs from both high-level and dive-bombing planes, flare after flare. All this together with our ack-ack guns, which were many and varied, really made a spectacular display and provided me with enough light to get something really worthwhile.

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I believe it was three rolls I exposed; however, it does not matter: the results are the same: no record, for a heavy bomb hit us and set our cargo of ammunition ablaze. . . . I regained consciousness a few hours later in a destroyer. What grieved me more than my wounds was to learn that my cameras and negatives had gone down with the ship.

All the foregone sounds like a mission that failed, mostly due to bad luck. Well, war photography is largely a matter of luck; but it also calls for the right equipment for the job, advance information, and the full co-operation of the senior officers.

The photographer with the Army should be as mobile as possible; his equipment *must* be light; therefore, I have long been an advocate for the man in this service to be supplied with 16mm. equipment.

The man with the Air Force must have his various camera-mounts to fit the types of 'planes from which he is likely to operate, *and should also be a fully trained air-gunner*. Here again, the size and weight of the 16mm. camera has great advantages over the "Standard" 35mm. equipment.

The man with the Navy is lucky, for his equipment can usually be Standard 35mm., and when he gets action, it is generally spectacular.

The war cinematographer must be keen on his job; he must have a cool head, an appreciation of danger; an understanding of maps and the use of the compass may prove to be of great value, and good deportment has never been a hindrance. END.

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BUT HERE IT IS AGAIN. With Kodak Infrared Film in the aerial cameras, pictures like this are brought back from an observation flight. On Infrared pictures, the false, "dead" camouflage materials look almost black. The natural landscape is unnaturally light. A trained camera man, with one look, knows where the bombs should strike.

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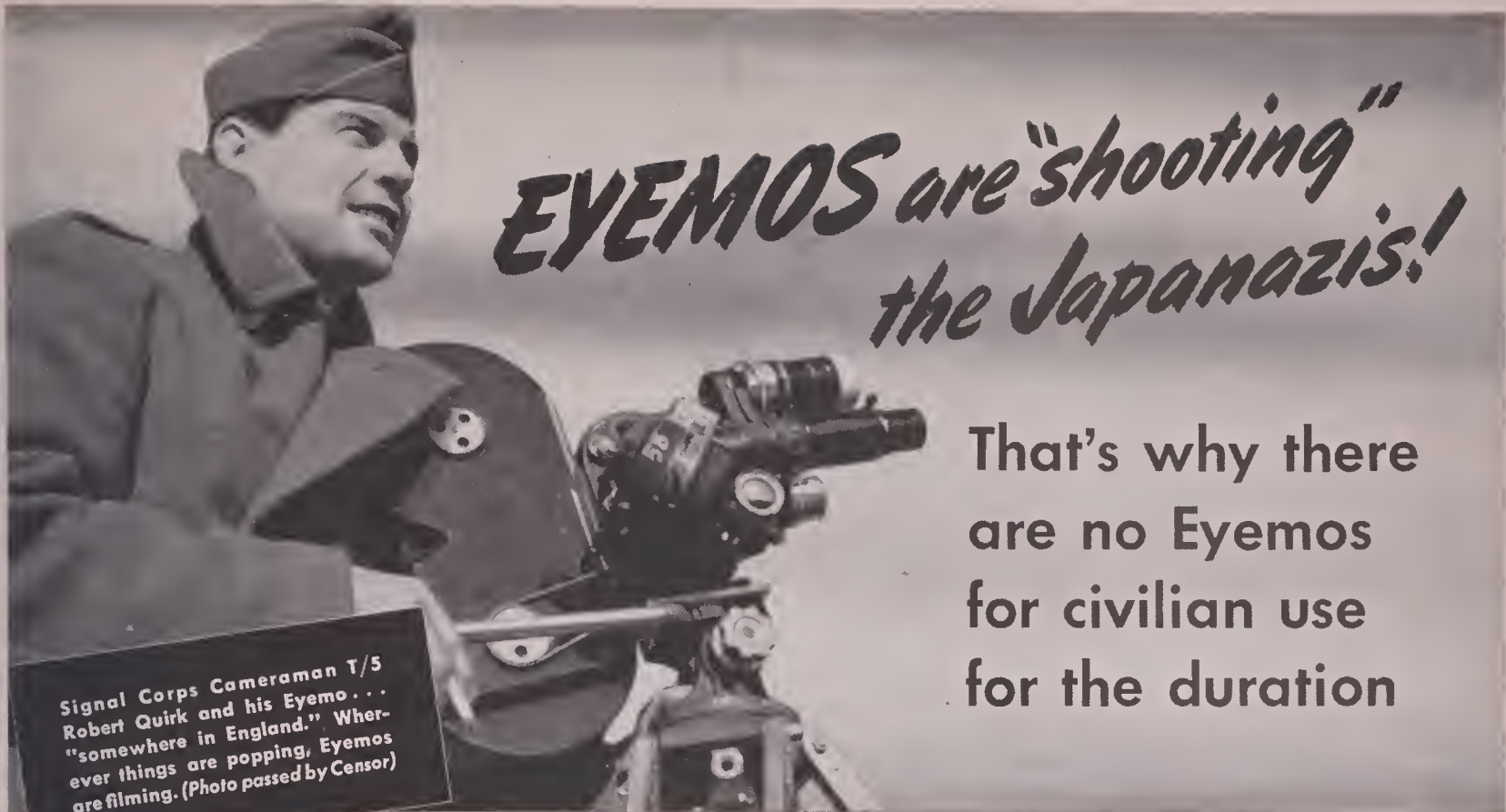
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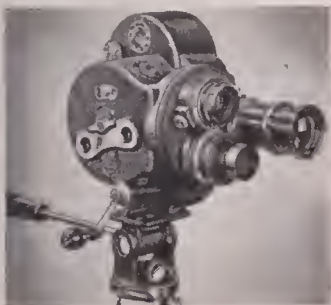
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

APRIL, 1943

NO. 4

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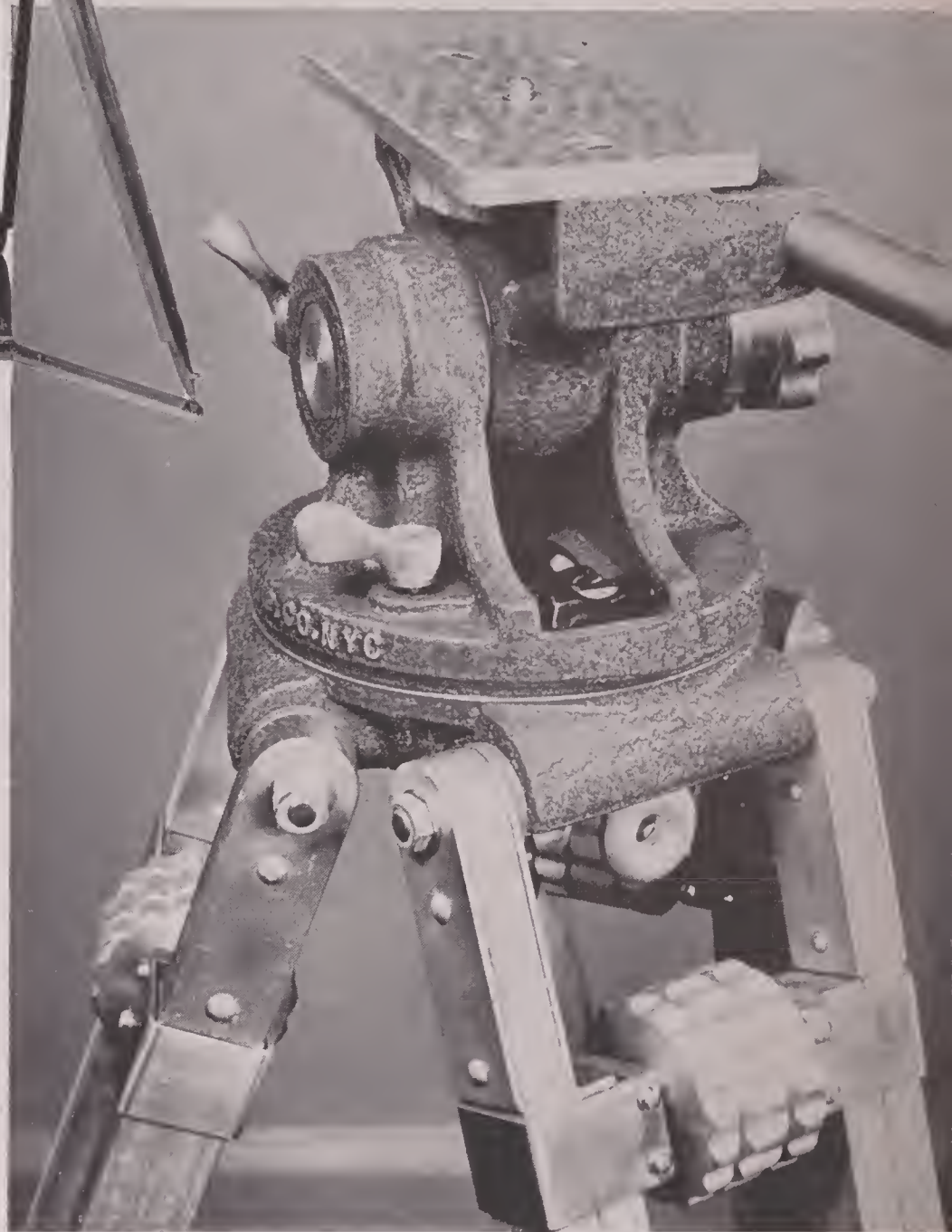


The Front Cover

This month's cover shows Harry Perry, A.S.C. (center, with dark hat) and director Dick Rosson (right) aboard a Canadian corvette "somewhere in the Atlantic" filming a scene for Universal's "Corvettes In Action." The cylindrical objects upon which Perry and Rosson are standing so nonchalantly are depth bombs. Note how camera is chained down, and inclination of horizon as the corvette rocks. The still is by an uncredited official cameraman of the Royal Canadian Navy.

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Illumination Contrast Control

By CAPT. DON NORWOOD, U.S.A., (Ret'd)

SUPPOSE that you were assigned to a picture which called for dramatic, high-contrast lighting throughout. Can you be absolutely sure that your first scenes made will match up with those made six weeks later?

Suppose that you are shooting a star, and discover an arrangement of lights and shadows on her face that gives a superb effect. Would you like to be able to duplicate the effect, with assurance, six weeks later; any number of times?

Suppose that you are going to shoot a natural-color picture. Would you like to be able to proceed with assurance that contrast will always be within safe limits; no blocked-up shadows; no

washed-out highlights? That contrasts throughout the picture will match perfectly?

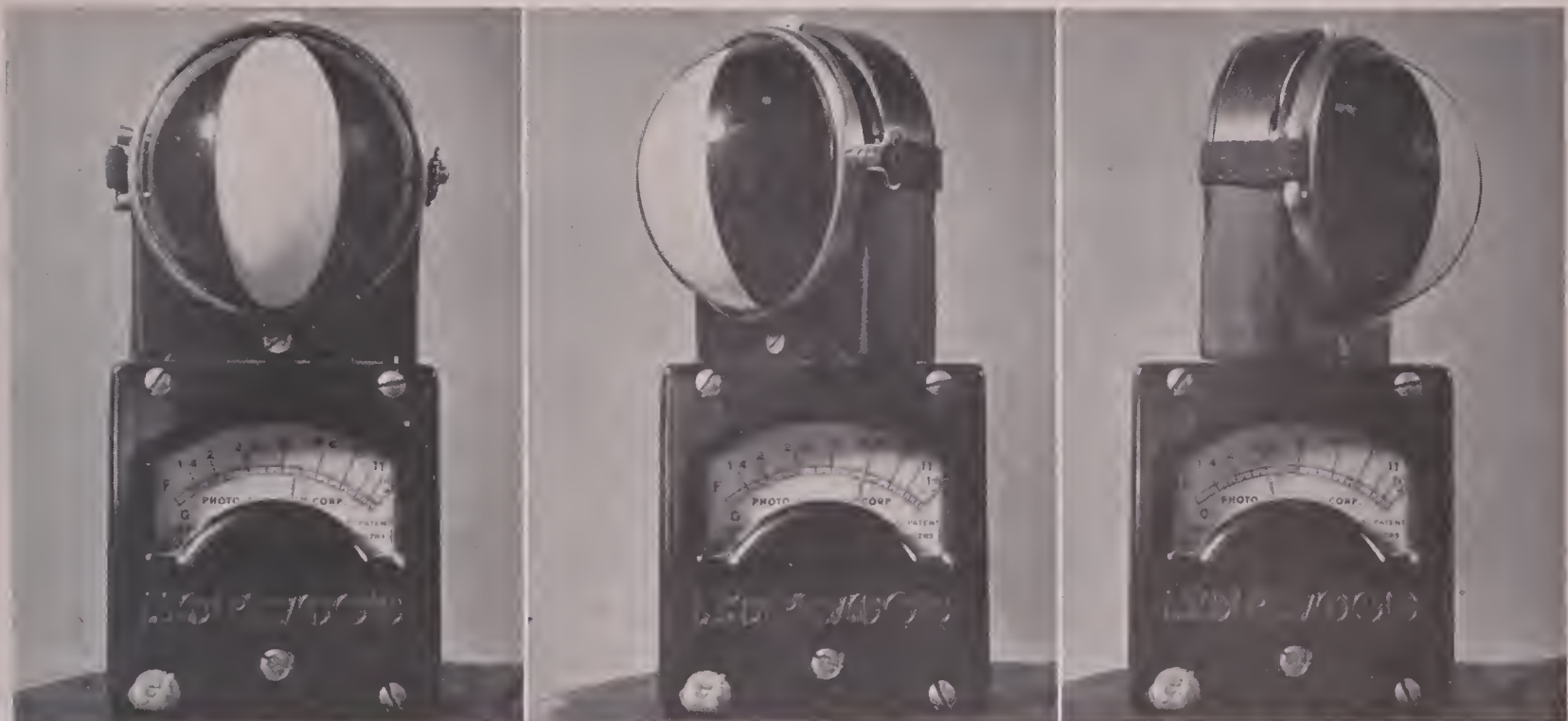
All of the above are, to a large extent, functions of *illumination contrast*.

Illumination contrast is easy to define. Let us imagine a subject outdoors facing south. The sun is in the west. The west side of the subject's face is illuminated by sunlight. The east side is illuminated by sky-light. The ratio of the intensity of the sunlight, on one side, to the intensity of the sky-light, on the other side, constitutes the illumination contrast.

Heretofore illumination contrast has been somewhat loosely considered as low

contrast, high contrast, or in between. Such a method leaves much to be desired in the way of positive information. What one photographer considers low contrast might fit another photographer's idea of medium contrast, and so on. Even one individual's ideas on the subject might be subject to variations from time to time.

It is therefore obvious that it would be quite desirable to be able to label these various illumination contrasts with numbers which would definitely place them. Such procedure would provide a common language on the subject which would have a definite meaning to all photographers.



For example, see Fig. 1-a (first picture). Here the sunlight intensity on one side is 16 times the intensity of the skylight on the other side. This gives us an illumination contrast ratio of 16 to 1. Fig. 1-b (second picture), shows an illumination contrast of 12 to 1; and so on through the series.

It would not be a difficult matter for a cinematographer to select from such a series an illumination contrast ratio that would be exactly suitable for the next picture he is going to shoot.

With illumination contrast ratios reduced to easily-handled numerical values, the next step is to provide a means of measuring the actual illumination contrasts prevailing, or being established, on any subject.

This has been accomplished by means of an auxiliary attachment for the Norwood exposure-meter.

It will be recalled that the Norwood exposure-meter has a three-dimensional light-collector, which in effect represents the camera side of the subject, and evaluates the sum total of all photographically effective illumination falling on the subject. The auxiliary attachment is in

Left, Fig. 2, contrast-reading hood on Norwood meter. Center and right, Figs. 3 and 4, showing method of taking selective readings of highlight and contrast illumination.

the form of a hood with a lune-shaped aperture. (See Fig. 2.) This hood, in effect, permits selective measurement of any sector of the representative surface of the light collector. The reading so obtained indicates the relative intensity of illumination falling on that particular sector.

Now if a reading is taken on the sunlit side as shown in Fig. 3, the meter needle might, for example, show $f:5.6$. Then a reading would be taken on the skylit side as shown in Fig. 4. This reading turns out to be $f:2.8$. The ratio between the two illumination-intensity readings constitutes the illumination contrast.

As an aid in reducing the meter readings to a simple numerical ratio, the Norwood computer has been designed. (See Fig. 5.) To carry through the example started above, the higher reading, $f:5.6$, has been located on the upper outside scale. The lower reading, $f:2.8$, has been located on the upper inside scale, and set adjacent to the higher reading. The index, at the right, below, then points to the answer on its lower scale, which in this case happens to be 4 to 1.

Suppose that a cinematographer assigned to a new picture looks over the story and decides that a contrast ratio, for example, of 4 to 1 will best promote the effect of the story.

On any given scene then he may use the device as an aid to lighting, as follows. The Norwood computer is first set to 4-1. The Norwood meter with contrast hood is used to measure the brightest illumination. Suppose that shows up as $f:4$. The meter head is then turned so that a reading will be made on the shallow side. The computer shows that the shadow must be filled in until the meter needle shows $f:2$. When this point is

reached the illumination contrast on the subject is 4-1.

Thus throughout an entire picture the illumination contrast may be always kept under positive control. The cinematographer has assurance that scenes made the last day of shooting will perfectly match those made on the first day.

When making contrast readings the hood aperture is moved a 180° angle on the camera side of the subject. This is because the photographer is interested only in illumination falling on the camera side of the subject.

However, when it is desired to make a record of some particularly attractive lighting set-up, for purpose of duplication at a later date, the Norwood meter with contrast hood may be used in a different manner. For this purpose it is de-

(Continued on Page 158)



Fig. 5: Contrast computer. Contrast ratio is indicated at arrow (right), and juxtaposed figures on dial indicate correct readings on highlight (outer) and shadow (inner) illumination to maintain that ratio at any desired illumination level.

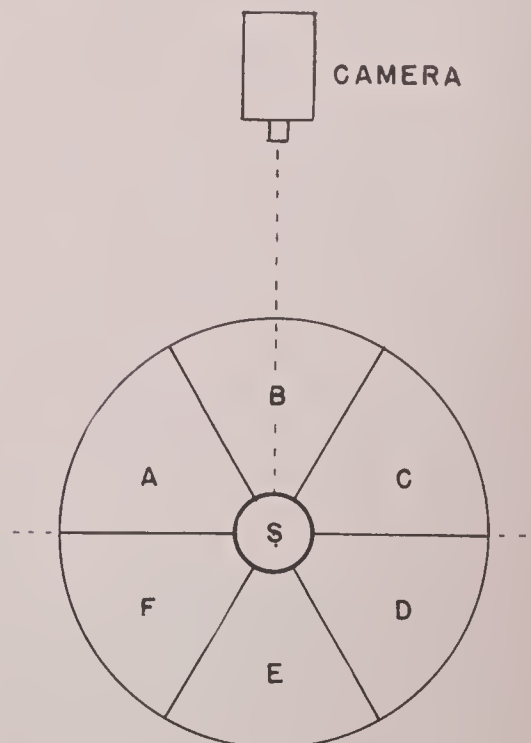


Figure 6.

Consistency In Cinematography

By DANIEL B. CLARK, A.S.C.

Executive Supervisor of Photography,
20th Century-Fox Studio



The author receives Academy Award plaque for developing the photoelectric lens-calibrating system described here.

CONSISTENCY is, and must always be, one of the fundamental goals of professional cinematography. By this I do not in any way mean a standardization of artistic treatment which would rigidly standardize the lightings and compositions of every cinematographer on every picture to a monotonous sameness. What I refer to is that phototechnical consistency which so completely standardizes the factors of illumination, exposure and film processing that the director of photography can concentrate all of his attention on the artistic aspects of his work, confident that the mechanical details represented by negative densities and printing values will take care of themselves to the extent that the first scene and the last one (and all those in between) will "match up," regardless of whether ten days or ten months of shooting intervene between their making.

In attaining this photomechanical consistency, three very closely inter-related factors are chiefly involved. First, the key illumination on the subject being photographed should be consistent. Second, the exposure-values reaching the film from this combination of illumination and subject must also be consistent. Finally, the laboratory processing of both the negative film and the print therefrom should be equally consistent.

And consistency in any one of these factors is virtually useless—not to say impractical—unless the other two are also consistent.

Perhaps the first, and in many ways the most important of these three factors is consistency in film-processing. Clearly, it does not matter very much that exposure and illumination be held constant if the development given the negative is not consistent.

In the pioneer days of the industry, this consistency was not only unknown, but virtually impossible. Too little was known about the depletion of solutions, and the deterioration of chemicals. In addition, since negative development was

timed largely by visual means, the human element was introduced to produce another extremely unpredictable variable.

Today, modern advances in practical as well as theoretical photochemistry have enabled us to mix our solutions with infinitely greater consistency, and modern replenishment techniques make it possible to maintain them at consistent performance throughout their useful lives. Modern sensitometric control furnishes a constant, accurate check on performance that was unknown only a few years ago.

The human element still remains, however, and in laboratories where the so-called "test system" prevails, can still defeat every effort, whether by cameraman or laboratory technician, toward consistency. Under this system at every important change of scene, set-up or lighting, a test is made. On reaching the laboratory, these tests are detached from the rest of the film and developed first, under "normal" conditions, and used as a guide to the development of the actual scenes. If in the opinion of the negative-timer, the test of a scene seems thin and underexposed, the negative of the scene itself is given additional development; if the test seems overly dense, the actual scene is short-developed.

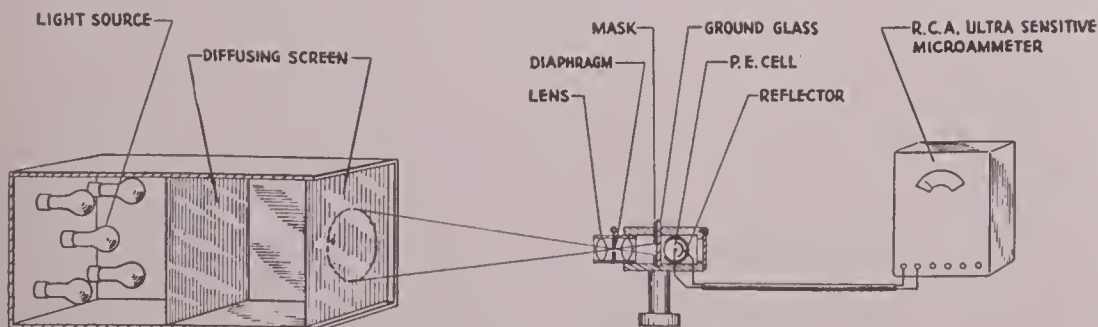
It does not matter whether or not the cinematographer may have been working deliberately for low- or high-key effects: the negative is given the development the timer believes ought to be "right" for what he reads from the test. As he is not a mind-reader, he can scarcely be blamed if he fails to appreciate that the director of photography may have had a definite reason for over- or under-lighting the scene to gain a given effect . . . but the system can be blamed, and should be.

If the director of photography were so inexpert, or had so little control of his medium that he could not avoid scene-to-scene fluctuations in his lighting,

exposure and negative densities, it must be admitted that the additional check represented by this test system might be an invaluable life-saver. But today any cinematographer worthy of the name is certainly sufficiently master of his medium, and has at his hand such efficient controls of lighting and exposure, that there is no excuse for the intrusion of this infinitely variable human element.

Moreover, the effects of this error are cumulative. Leaving aside the experiences every cinematographer has had in which scenes lit and exposed for night-effects or effect-lightings were misinterpreted by someone in the laboratory and force-developed into indifferent day-effects, most of us can recall times when we were shooting for a definite effect and the laboratory's negative-timer misinterpreted it. If, on the one hand, the cinematographer attempted to handle his scene according to the laboratory's recommendation, it would mean wholly abandoning effects he felt were artistically and dramatically needful to his production. On the other hand, if he strove to obtain the effects he wanted in spite of the laboratory, it would mean he would be getting farther and farther off the beam every day. In either case, his attempts to obtain phototechnical consistency would degenerate into a mere attempt to outguess the laboratory, usually to the detriment of overall photographic quality and consistency.

The answer to this lies in giving the cinematographer a definite standard of negative processing at which to shoot, as represented by the time-and-temperature system of development. This leaves the question of contrast, negative density and effects completely in the control of the cameraman. If he misses, it is his own fault; if he succeeds, it is by his own merit. In any event, the man at the camera stands or falls on his own ability, and one of the basic factors leading to phototechnical consistency has been reduced to scientifically standard practice.



Schematic diagram of the 20th Century-Fox photo-electric lens-calibrating set-up

I think it is very greatly to the credit of Laboratory Superintendent Mike Leshing of the 20th Century-Fox Laboratory that he has standardized on this time-and-temperature system. Not only is he one of the very few laboratory chiefs who leaves control of photography strictly in the hands of the cameraman, but by eliminating tests and all that go with them, he has achieved savings in film, time, effort and manpower which are increasingly important these days.

This consistency in negative processing is not alone enough to guarantee photographic consistency, however. It would in itself be futile if it could not be accompanied by consistency in illumination on the set and consistency in exposure on the film. It would only stabilize one out of three potentially variable factors.

With today's photoelectric exposure-meters, obtaining consistency in illumination has become a relatively simple matter. It probably does not matter too much what type of meter is used, or by what method, so long as the meters themselves are consistently accurate, and the method of using them is such as to give consistent results. At 20th Century-Fox we pioneered in the use of meters and in establishing standards of accuracy for the meters, and standard methods of using them, and we naturally like to feel that our method is best. At any rate, it has proved to produce uniformly excellent results, and has won the approval of all of the many outstanding cinematographers on the studio's camera staff.

By means of exhaustive comparative tests, we selected what appeared to us to be the most consistently accurate of the various types of photoelectric exposure-meters then available.

We then standardized on this meter, and supplied studio-owned meters to all of our cameramen. These meters are regularly checked against a known standard of illumination on an optical bench, and maintained in uniformly accurate working order.

In use, the meters are used in a simple, standard method for incident-light readings on the key-light. This key-light illumination is adjusted to produce a predetermined standard reading for normal and effect-lightings. With the key-light pegged to a normal standard, the cinematographers can balance the rest of their lighting as they see fit, securely confident that their illumination is balanced to a standard which, with our standard time-and-temperature developing, should place their exposure and negative density in the desirable middle part of the film's characteristic curve and of the printing scale.

This, however, is still not enough to guarantee complete consistency under all conditions. All professional cinematographers—and most advanced amateurs—have learned from sad experience that exposure is governed not only by illumination and negative development, but by the individual light-trans-



The author testing lens-transmission during his initial experiments. The equipment now in use has been made more compact, and a simple light-box has replaced the "baby keg" as a light-source.

mitting abilities of the lenses used to make the picture. While in theory any given stop on one lens is supposed to transmit as much light as the same stop on any other lens, in practice, this is not so.

This is because the mathematical formula conventionally used in calibrating the diaphragm openings of photographic lenses does not take into consideration the type of glass used in constructing the lens, the number of elements, their respective transmission factors, or the number of glass-air surfaces in the lens as a whole. This formula is mathematically expressed as:

$$f = \frac{F}{D}$$

In this, "f" represents the numerical value of the *f*-stop in question, while "F" represents the focal length of the lens, and "D" the diameter of the aperture at the stop indicated by "f". In other words, the value of the *f*-stop is determined by dividing the focal length by the diameter of the aperture. If, for example, the focal length of the lens is known or found to be 50mm., and the diameter of the maximum opening is found to be 1 inch (25mm.), 50 divided by 25 gives 2, so the *f*-value of the lens at maximum aperture is *f*:2.

If we want to calibrate the lens, we use the same formula. Following through with the same formula, if we want to determine the diaphragm-opening for a stop-value of *f*:8 with the same 50mm. lens, we know that while "D" is unknown, "f" equals 8 and "F" equals 50, and that in this case 8 equals 50 divided by "D". Therefore "D" must equal 50 divided by 8, which works out to 6.25mm. or .2462 inches. If we close the diaphragm down until its aperture is of that diameter, we can mark that point as representing *f*:8 according to the traditional formula.

Unfortunately, however, this formula does not take into consideration the actual transmission characteristics of a lens. It is the same for the simplest single-element lens and for the most complex of objectives which may be made of two, three, four or more different elements, in turn composed of cemented or uncemented elements of several different types of glass. Each kind of glass has its own transmission characteristics, and there is moreover a definite loss of light every time a beam of light passes from air into glass, or from glass to air.

It is no wonder, therefore, that all of us have had the unpleasant experience of making a long-shot with, say, a 50mm. lens, and then moving in to make a close-up with, say, a 3- or 4-inch lens of different design, and found that although our key illumination and our negative development were held at absolutely the same values, the scene made with one lens, though at the same indicated stop as the scene made with the other, might be as much as a stop or even more over or under the other in actual exposure and density.

Accordingly, it seemed evident to us that the final step in securing consistent phototechnical quality must be to make use of some system of lens-calibration which would be based completely upon the practical light-transmitting characteristics of each individual lens. The use of some form of photoelectric measurement of actual transmitted light, through the lens itself and from a known standard light-source, seemed obvious.

Discussion of the idea with outstanding lens-manufacturing firms, however,

(Continued on Page 157)

Right: Close view of RKO's new camera-boom; note pneumatic winches, generator for camera-driving current, and rigidly-braced construction. Below: The boom in use; at bottom: dropping miniature bombs.



RKO Builds Biggest Boom for Shooting Aerial Miniatures

By WILLIAM STULL, A. S. C.

WITH an avalanche of war-themed production under way, Hollywood's film industry, now more than ever before, needs new equipment to enable the special-effects cinematographers to accomplish things they have never previously needed to do on such a scale. Yet due to wartime restrictions, the building of new equipment has become prohibitively difficult. In many instances the question of building the equipment needed to make a special-effects shot possible has come to demand as much ingenuity as making the shot itself.

An excellent illustration of this is a new boom developed by Vernon L. Walker, A.S.C., and his staff in the Special-Effects Department of the RKO Studio for filming miniature scenes representing aerial bombings and the like. With productions like "Bombardier," which centers around the training and combat action of Air Force bomb-aimers, in production or scheduled, such a device was obviously essential. At the same time, no new materials with which to make it were to be had.

So Walker and his designing engineer "Marty" Martin built a device which easily takes rank as Hollywood's largest camera-boom. And they did it without using a single scrap of new material!

Something of the design and construction of the big boom will be seen from the illustrations. The rectangular steel truss which forms the chassis was reclaimed from the underframe upon which marine sets were constructed, mounted on a massive ball-joint so that they could be rocked to simulate the natural rocking of a ship.

Beneath this truss, suitable brackets—also of reclaimed metal—were bolted to carry four flanged railway-type wheels on suitable axles. These wheels carry the boom along a length of railway track some 350 feet long. The rails used were reclaimed from tracks laid in another outdoor set, and were welded together to assure smooth operation. Due to the extreme height of the boom's superstructure, it was decided to widen the track to the full width of the steel chassis. Thus, with a gauge of 15 feet and a total length of 350 feet, Walker's RKO Railway may be said to rank as both the

broadest-gauge and the shortest railway in the world!

Across the center of the underframe is bolted a heavy steel girder upon which the boom proper is mounted. This superstructure consists of two boom arms, constructed of wooden poles each 90 feet in length, and two somewhat shorter poles forming the central supporting arm. All three of these upright members are strongly braced by steel cables which, incidentally, were also reclaimed from previous uses.

The left-hand boom arm (as seen in the pictures) carries a mount for camera and crew. The right-hand arm serves as a counterbalance, and is weighted with lead counterweights to offset the weight of camera and crew. When necessary, these two arms are raised or lowered together, so that each counterbalances the other.

Ordinarily, however, the camera and its accessories are hoisted into position without lowering the boom, while the crew scramble into their places along a ladder attached to the boom arm. The boom is generally counterweighted to

(Continued on Page 148)



RUTTENBERG AND SHAMROY WIN ACADEMY AWARDS

HISTORY was made with the presentation of the Academy Awards for the best photographic achievements of 1942. Joseph Ruttenberg, A.S.C., became the first cinematographer ever to capture two Awards for monochrome cinematography. Four years ago he was awarded an "Oscar" for putting "The Great Waltz" on the screen; this year he received a second golden statuette for making "Mrs. Miniver" the best black-and-white photographic achievement of 1942. In the color class, Leon Shamroy, A.S.C., with "The Black Swan," smashed tradition by becoming the first of the so-called "production" cinematographers to win an "Oscar" solo, without the collaboration of a Technicolor specialist. Tradition-breaking, too, was the fact that for the first time one studio had a total of six productions worthy of inclusion among the sixteen nominated for the two camera awards: in the black-and-white division, four of the ten nominees, and in the color division, two out of six, came from the cameras of the 20th Century-Fox Studio. In the field of special-effects cinematography, Farciot Edouart, A.S.C., and Gordon Jennings, A.S.C., deservedly repeated their last year's win with their surpassing work on "Reap the Wild Wind." In the field of technical developments, Daniel B. Clark, A.S.C., and the 20th Century-Fox Camera Dept. won a Class II (plaque) award for the development of a radically new system of lens-calibration based on actual transmission values.

When we reviewed Ruttenberg's work in "Mrs. Miniver," we said "From start to finish, Ruttenberg's compositions and lightings command interest. They're very nearly flawless, and have an unusual blend of pictorial quality and

strength. Such a treatment is singularly appropriate for a story like 'Mrs. Miniver,' for it visually epitomizes the qualities which have made such a heroic saga of real-life England under the blitz . . . Ruttenberg's camerawork . . . unquestionably plays a vital, if silent, role in making 'Mrs. Miniver' one of the great pictures of the year."

Ruttenberg himself says, "In a year that has seen so many superlatively fine photographic jobs brought to the screen, I can only feel humbly thankful for the surprising honor that has been given to me. First, I want to express appreciation to my fellow-members of the A.S.C. who voted my picture the year's best. With so many perennially deserving artists among this year's nominees, and with such fine pictures, I feel almost embarrassed and enormously gratified, that my fellow cinematographers should decide I was worthy to be the first man ever to receive two awards.

"Secondly, I want to express my appreciation to all those who helped me to do what I did on the picture. There is no doubt that having a picture which is dramatically great, so that many of one's fellow professionals want to see it for entertainment, as well as for its photographic values, is a very great help to getting an award. The producers, the writers, the directors and the players made 'Mrs. Miniver' that kind of a picture, and I wouldn't deserve the name of cameraman if I hadn't bent my every effort to make my work measure up to theirs. In the same way, I owe a world of thanks to

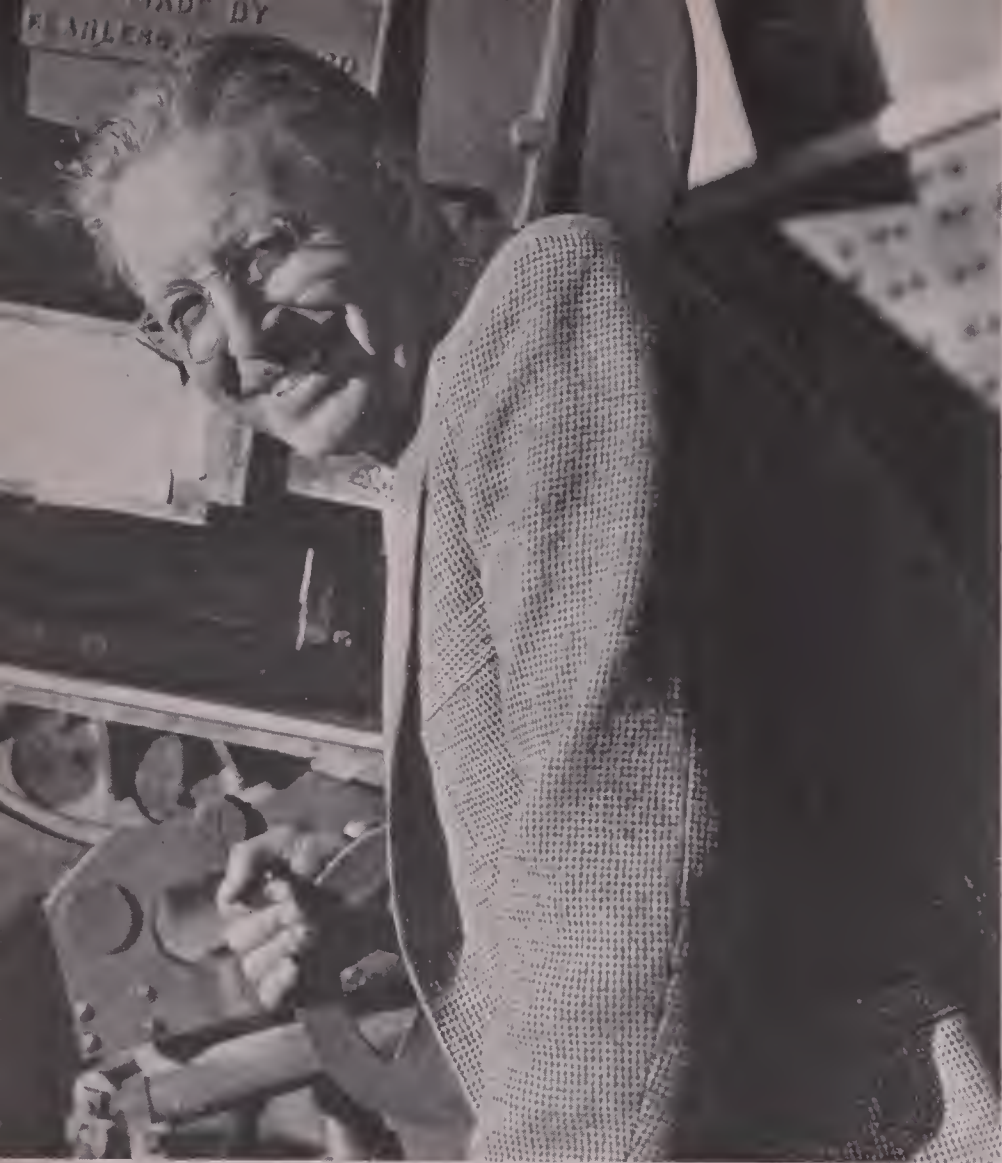
my crew, and to John Nickolaus' laboratory which processed the film. A director of photography is really no better than his crew and the lab behind him, and I want to give a very sincere 'thank you' to Operative Cinematographer Herb Fischer, and to Assistant Cameraman J. King Kauffman, Jr., and to all my friends and fellow-workers on the set and in the laboratory. I didn't win that award alone, *we* did it, working together as a team, and I sincerely wish there were some way of sharing the honor with every one of the many on the stage and in the lab who helped put me out in front."

The other nominees in the black-and-white division included "Kings Row" (Warner Bros.), photographed by James Wong Howe, A.S.C.; "The Magnificent Ambersons" (Mercury-RKO), photographed by Stanley Cortez, A.S.C.; "Moontide," (20th Century-Fox), photographed by Charles G. Clarke, A.S.C.; "The Pied Piper," (20th Century-Fox), photographed by Edward Cronjager, A.S.C.; "Ten Gentlemen From West Point," (20th Century-Fox), photographed by Leon Shamroy, A.S.C.; "This Above All," (20th Century-Fox), photographed by Arthur Miller, A.S.C.; "Pride of the Yankees," (Goldwyn-RKO), photographed by Rudy Maté, A.S.C.; "Talk of the Town," (Columbia), photographed by Major Ted Tetzlaff, A.S.C., and "Take a Letter, Darling," (Paramount), photographed by John Mescall, A.S.C.

Color-award winner Leon Shamroy, A.S.C., shares with Edward Cronjager, A.S.C., the honor of having productions nominated for awards in both the black-and-white and color divisions. When we reviewed his achievement in Technicoloring "The Black Swan," we said, "Leon Shamroy, A.S.C., very decidedly goes to town in this richly-Technicolored pirate story. Indeed, after seeing 'The Black Swan,' it's hard to think of a pirate story in monochrome. Shamroy paints his picture in broad, vivid strokes, as becomes a story in which colorful settings and colorful costumes and ac-

At top of page: Joseph Ruttenberg, A.S.C., (left) and Leon Shamroy, A.S.C., (right) receive Academy Award Statuettes for the year's best black-and-white and color cinematography, respectively, from James Wong Howe, A.S.C.

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Aces of the Camera

XXVII:

Ray June, A.S.C.

By WALTER BLANCHARD

WHEN a music-lover hears a recording by Fritz Kreisler, he doesn't need to be told who is playing: an indefinable style, and a clear-cut artistic vigor in the playing tell him that, without need of words. In the same way, those who know and love fine cinematography don't need a credit-title to tell them they're viewing a picture photographed by Ray June, A.S.C. For, like Kreisler, Ray June has an indefinable style of his own—a clear-cut, vigorous artistry which makes his work unique.

It is no wonder, then, that his fellow-professionals will describe him to you as that rare thing, a cameraman's cameraman. They admire the perfection of his work—even on routinely unimportant

pictures. And they admire him even more for himself, for he is the finest of fellow-workers and friends.

He's a real veteran of the industry, too. This spring he is starting his twenty-eighth year as a First Cameraman . . . which would probably seem incredible to the folks who, back in 1914, urged him not to go into any business so unstable as the movies.

As a matter of fact, when Ray informed his parents that he wanted to make cinematography his life work, he met with objections on other grounds. People back in 1914 didn't rate film folk very highly in any way—especially as regards morals. And it was particularly that way in a small town like Ithaca, New York, where Ray grew up.

There was a studio of sorts in Ithaca in those days, where Pearl White made her serials, and the ways of the film folk seemed strange, and more than a little wild to many of the residents. Ray's parents put their foot down flatly on any thought of their son's going into such a business.

But Ray diplomatically suggested that, as he would begin by working nights in the film-laboratory, it wasn't likely he'd come in contact with any influence more contaminating than the pyro used to develop the film. He must have put his case very persuasively, for in November, 1914, his parents grudgingly let him report for work as a helper in the studio's lab.

He didn't keep that job very long, though. If the Ithaca folk weren't particularly happy about having the film people in their midst, some of the film folk, accustomed to life in a big city like New York, were just as unhappy at being what they considered stuck out in the sticks. The laboratory chief was one of them. He was a temperamental Italian, and he longed for the bustle and excitement of life in New York.

"One day," Ray says, "he just didn't come to work . . . and there was the day's shooting to develop and print—and only me to do it! Luckily, I'd learned enough so I knew how to mix the chemicals right, and how to dunk the film-racks into the developing tank. So I became the studio's laboratory-man on very short notice. I didn't spoil anything, so after a few days of very natural doubt, the producers decided I might as well keep on running the lab.

"It wasn't very many weeks after that that the cameraman of the company also found his yearning for the big town too strong to be resisted. When one morning he didn't show up, my bosses asked me if I thought I could run the camera. I'd spent as much time as I could watching what the former cameraman did, and how he did it, so I replied I thought I could do it.

"This was just about three months after I'd first set foot in the studio. And there I was a full-fledged First Cameraman! You might better put that, 'There I was, a cameraman—period.' There were no such things as Assistants in those days—much less Operatives or Still-men.

"As a matter of fact, I was the whole photographic staff of that studio. During the daytimes I shot the pictures. In the evenings, I developed my negative. Early the following morning, I'd print it. In between, I'd load and unload the magazines, and keep the camera clean and in good condition. Outside of that, my time was more or less my own.

"Luckily for me, camerawork in those days was a good deal easier than it is now. Most of our scenes were shot outdoors. When we made interiors, we still used daylight: we worked on an open stage, glass-covered like a greenhouse, and with strips of muslin overhead to diffuse the light. Most of the time our

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THROUGH the EDITOR'S FINDER

SINCE the night of March 4th when, at the Fifteenth Annual Academy Awards Banquet, the Industry suffered its supreme humiliation, we have heard a great deal of talk to the effect that this would probably be the last Academy Banquet. In all sincerity, it seems to us that unless a vast and fundamental change is made in the handling of these affairs, this year's banquet certainly should be the last.

In making this observation, we do not for a moment overlook the difficulties which annually face the Academy planners. We realize fully that with increasingly world-wide publicity, this "family party" at which the people of the motion picture world gather to honor their own has grown increasingly out of hand. Certainly for the last ten years no one—least of all the industry's technicians and the representatives of the press assigned to "cover" the event—have attended with any slight expectation of comfort. We have grown used to being shunted off to crowded tables in the more remote suburbs, so distant from the platform that we scarcely expect to see or hear anything of what is going on. We are becoming inured to enduring meaningless speeches by political prominents who know nothing about the industry, and care less. We can even begin to understand why the actually important proceedings of the evening are often side-tracked so that these more or less distinguished orators may go on the air to help finance the proceedings—and incidentally to bore countless radio listeners who tuned in in the hope of hearing the actual presentation of Awards to their favorites.

But there are a couple of things we cannot understand. First, why can't the proceedings be confined strictly to their announced purpose—a "family party" of, by and for the industry, in which the industry itself gathers to honor outstanding achievement by its own people? Everyone else—the newspapers, the radio, and the national government itself—recognizes that motion picture names and personalities are the most newsworthy drawing-cards in the world today. They call upon our actors to put over war-bond drives and to tell women in defense plants how to wear their hair; they call on our technicians to teach Army cameramen how to photograph pictures and record sound; on our art-directors to develop new and better methods of camouflage. Why, then, do we need outsiders to tell the world what a great job our industry is doing for the war effort, or how significant are our honors for cinematic achievement—?

Second, the motion picture industry is one of the extremely few great arts based on creatively-applied science; the Academy itself includes "Sciences" as well as "arts" as a key part of its name. Why is it, then, that the repre-

sentatives of the creative sciences—of which the cinematographers are an important group, though by no means the only ones—given a poor relation's brush-off in the method of presenting the Awards? Why is it that the representatives of so many other groups—not only the actors, but also the writers, directors, producers, even musicians—were given a chance not only to read off the list of nominations, but often to expatiate on the contributions of their respective branches, and the recipients of the Awards to make speeches of acceptance (often much too patently prepared), while the Awards for cinematography, special-effects, sound-recording, and the like, which are the real foundation of the industry, were railroaded through with scarce a half-dozen words spoken in both presenting and receiving all of these Awards combined—?

We will admit that the industry's technical people are neither as glamorous nor as widely publicized as the players they bring to screen and loud-speaker, Joe Ruttenberg certainly doesn't have the glamor with which his photographic skill invested "Mrs. Miniver" Garson, and Nathan Levinson hardly cuts as swashbuckling a figure as does "Yankee Doodle" Cagney. But in each case the patient, behind-the-scenes efforts of the one helped bring the other his or her "Oscar."

The glamor-folk in front of the cameras admit, as Rosalind Russell did so charmingly two years ago, that they owe their popular success as much to the patient skill of the unpublicized men who make them look and sound as they really don't, as they do to their own unaided efforts. And somehow, we've always figured that any organization which claimed to be devoted to the arts and sciences of the motion picture should in all honesty bend every effort to publicize this fact, at least when it comes to giving public recognition of outstanding technical and artistic achievements. Certainly, the last year has proven that no words could be too flattering (at least when spoken "off the record") when some of these people found it necessary to wheedle the industry's technical people to do a job they'd promised to do but couldn't deliver on their own abilities!

It is an open secret that today there is a strongly supported move on foot for the industry's cinetech people to withdraw from next year's Awards and—regardless of studio or organizational affiliation—to create and present their own awards for the year's best achievements in monochrome and color cinematography and special-effects. That is as it should be. And we've an idea that it will find a warm response among the other arts and crafts of the industry's technical community, and among many members of the press, as well.

With thousands of laymen, in and out of the industry, growing daily more aware of the vital part the industry's cameramen, sound engineers, special-effects experts and other technicians are playing in making screen entertainment possible, it is time that the industry's technicians stopped being the poor relations at the industry's annual back-slapping feast, and stood as solidly on their own feet as they do every day on the set.

SOMETIMES we wonder if the industry isn't overlooking a very big bet in its special-effects specialists. We've known of productions which carried a budget of more than a half million dollars for special-effects work alone, and of which from half to three-quarters of the release footage—including important scenes with the principals—was planned, produced and directed by unsung special-process cinematographers. Of course these men are valuable where they are—but mightn't they prove even more valuable if placed in charge of complete productions, instead of merely parts of them?

A MONTH or so ago a cameraman remarked to us, "You know, they say there's a shortage of cameramen—but I'll be darned if I see any evidence of it! Everywhere I go they tell me they like my work, but there's nothing open now—'come back next week, or maybe in two or three weeks.' Meanwhile, I've a wife and a couple of kids to support. What am I going to do?"

A few weeks later, we saw him again—in the uniform of an Army lieutenant. He'd solved his problem. Uncle Sam may not pay his shavetails much, but that little, coming in fifty-two weeks a year, is a lot better than the much higher wage of a cameraman coming in perhaps half-a-dozen weeks or a month or so out of the year!

As the industry ordinarily thinks of such things, that chap's enlistment wasn't exactly a crippling loss to the industry. He wasn't a spectacular camera-ace—just a sincere, efficient young man who had given fifteen or twenty years of his life to the industry, and had mastered his trade so well that everyone knew he could fit into any studio camera or special-effects department and carry on without losing an inch of film or a moment's time on even the most difficult shots. We've got several score like him, all the way down the line from directors of photography to assistant cameramen and film-loaders. For years they've been a tacitly recognized convenience—fellows you could call in for a day's work, or a week, or a whole production, with no question as to their dependability . . . and no thought of offering them the security of a contract. The industry could afford to use

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A.S.C. on Parade



Capt. Joe Valentine, A.S.C. of the Army's Special Service Division is a man of his word. Last month, you'll remember, he promised to send us a picture of himself with his shiny captain's bars—and here it is. With this evidence, we're only too glad to apologize for inadvertently demoting him to a mere shavetail!

Lt. Harold, "Winnie" Wenstrom, A.S.C., U.S.N.R., is in town on leave after two years' service with the Navy "somewhere in the Pacific." We're going to have to lure him in front of a camera while he's here, for his two rows of campaign and service ribbons are impressive to see.

A big salute to our leatherneck cinematographer, Henry Freulich, A.S.C. A few months ago we chronicled his enlistment in the Marine Corps as a private slated for Officers' Training. More recently, we reported he had been commissioned as a Lieutenant. And now, Henry is very deservedly a Captain and, so we hear, finding the Marine Corps one swell outfit.

And Stanley Horsley, A.S.C. starts his military career the hard way, as a buck private in the Army. He makes the 42nd A.S.C. member in uniform to date.

Lt. Joe August, A.S.C., U.S.N.R., briefly in town en route from one military secret to another, looking younger and fitter than we've seen him in years.

And Capt. John Alton, A.S.C., of the Army, in town briefly. Thanks for your cheery phone-call, John—and here's hoping for a chance for a better talk next time.

And Charlie Lang, A.S.C., assigned to film a family-full of ghosts in "The Uninvited."

We're sorry to report that Ray June, A.S.C., is laid up for a serious operation which will keep him in the Good Samaritan hospital for the next several weeks, and away from the cameras for some time longer.

If we're to believe recent trade-paper reports, that old maestro "Tony" Gaudio, A.S.C., has asked for his release from his Warner Bros. contract which was due to expire next October. We certainly hope this doesn't mean "Tony" is thinking of retiring. If he did, he would be universally missed . . . and Hollywood without Tony Gaudio wouldn't seem quite the same to any of us.

Lester White, A.S.C., Super-Chiefing East, where he's to direct the photography of Red Skelton's next, "Whistling in Brooklyn."

Did you know that George Barnes, A.S.C., was an accomplished violinist? We didn't either, till columnist Hedda Hopper reported it . . . We'd like to thank La Hopper, by the way, for the way she gives the cinematographers such nice breaks in her column.

Sid Hickox, A.S.C., loaded with plenty of praise for his work on "Edge of Darkness," off to Sun Valley a-locationing for "To The Last Man." And he tells us the thermometer there is averaging 20 below. Brrr!

Charley Clarke, A.S.C., does his winter picture-making on T.C.F.'s ice-stage, filming Sonja Henie's "Wintertime." But he's got a nice new contract that ought to keep him warm—and plenty of heart-warming praise for his last few pictures, too.

Karl Struss, A.S.C., dropped by at last to collect those stills we shot in our argument, months ago, about reflected-vs. incident-light metering. 'Twas his 26th wedding anniversary, too, by the way.

Versatile fellow, Harry Hallenberger, A.S.C. Doing pick-up shots for Paramount the other day, he spent the morning shooting Technicolor, and the afternoon shooting black-and-white.

Dan B. Clark, A.S.C. and Stanley Cortez, A.S.C., busy as a pair of bird-dogs co-chairmaning a committee representing the cinematographers of Hollywood, laying plans for making a filmic record—perhaps in Technicolor—of the big pageant being staged for Mme. Chiang Kai-Shek. The print is to be presented to her as a gift from Hollywood's cameramen.



Just after we left the office the other evening Lt. Jack Greenhalgh, A.S.C., U.S.A.A.F., came by to leave this picture and tell us he was leaving for an unannounced military jaunt. We talked the other day with a Ft. Roach sergeant who seemed to indicate that the Air Force gang like Jack as an officer and fellow-worker.

Hal Rosson, A.S.C., off to Salt Lake City scouting locations for MGM's forthcoming "America." Does that mean Hal is at last going to get a chance at a Technicolor picture—?

Bet John Boyle, A.S.C., was the only person at the "Young Mr. Pitt" preview to identify the narrator's voice as that of Carol Reed. Johnnie photographed Reed's first picture, you know.

Theodor Sparkuhl, A.S.C., gets the sought-after assignment to photograph Jimmie Cagney's first United Artists' production, "McLeod's Folly." No folly to picking Ted for that assignment, anyway!

Between paragraphs note—nice to see the gentleman from Laguna, Gordon Pollock, A.S.C., up from his beach home for a visit.

Paul Ivano, A.S.C., has reason to smile: with "Flesh and Fantasy" completed, he's signed to a fine new Universal term contract, and assigned to make a big special starring Jean Gabin, and directed by Julian Duvivier.

Note to Mrs. George Meehan: Your hubby tells us you always look through the magazine for his name, and hide it if you can't find it. Hope you won't hide it this month.

John Arnold, A.S.C., looking relaxed now those Signal Corps camera classes are over, getting up steam to instruct several classes of Marine Corps cameramen.

PHOTOGRAPHY OF THE MONTH

FOREVER AND A DAY

RKO-Radio Release.

Directors of Photography: Lee Garmes, A.S.C., Robert De Grasse, A.S.C., Russell Metty, A.S.C., and Nicholas Musuraca, A.S.C.

This is the picture which, over the period of the last two years, a volunteer group including all but two or three of the British writers, directors and actors resident in Hollywood have cooperatively produced as a contribution to the charities of their two nations. Surprisingly, it emerges not as the patchwork one might expect, but as a surprisingly well coordinated piece of cinematic entertainment.

The same is true of the photography which was done by at least four officially credited directors of photography, with their work necessarily intermingled, and spread over a period of two years' shooting. So expertly have they done their work that it is almost impossible to tell where one's contribution leaves off and another's begins. As a matter of fact, if you try to pick each man's contribution, you're likely to guess wrong, as this reviewer did after the preview when he started to compliment one man on a sequence he thought he had surely identified—and found instead that it was done by two of the others!

"Forever And A Day" is decidedly one of the most expressively-photographed of recent films. There were no "commercial" restrictions to inhibit the cinematographers in their use of extreme low-key effect-lightings; no "star" names to be photographically protected at any cost. The result is a production in which photographic effect is at all times planned to serve solely as a vehicle for dramatic mood, without any of the restrictions which so often keep cinematographers in a rut of routined commercial safety.

AIR FORCE

Warner Bros. Production.

Director of Photography: James Wong Howe, A.S.C.

Aerial Photography by Major Elmer G. Dyer, A.S.C., and Charles A. Marshall, A.S.C.

Special-effects by Rex Wimpy, A.S.C., and Hans Koenekamp, A.S.C.

"Air Force" is one of those pictures you shouldn't miss. Dramatically, it's one of the most completely realistic air-war pictures ever screened; photographically, it is sure to prove one of the outstanding camera-achievements of 1943.

You really should see "Air Force" at least twice. The first time, the complete realism of story, direction and acting will probably overshadow your interest in the photography. Only on a second viewing will you realize how powerfully—and how self-effacingly—Jimmie Howe's camerawork contributes to mak-

ing "Air Force" the great picture it is. At first, you're conscious only of the realistic mood he maintains from start to finish; but later, you begin to realize how deftly his camerawork, compositions and lightings have been used to strengthen the dramatic moods of the action.

If there are such things as Academy Awards next year, "Air Force" will unquestionably be one of the strongest contenders for the one for the year's best special-effects camerawork. A truly remarkable proportion of the production's release footage was shot under the direct supervision of Byron Haskin, A.S.C., and his special-effects staff. Both Haskin, the two special-effects cinematographers credited, and special-effects Unit Director Roy Davidson deserve endless credit for this work. Most spectacular, of course, is the miniature work, which shows the bombing of a Japanese fleet (presumably the Coral Sea battle), and some aircraft landings and take-offs. The perfection of the background-projection and optical-printer work will all too generally pass unnoticed. Yet without them—and their excellent coordination with the "production" sequences—"Air Force" could not begin to tell its story.

HELLO, FRISCO, HELLO

20th Century-Fox Production (Technicolor).

Directors of Photography: Charles G. Clarke, A.S.C., and Allen Davey, A.S.C.

With "Hello, Frisco, Hello," Cinematographer Charles G. Clarke, A.S.C., makes an unusually auspicious debut in Technicolor. The picture itself is one of the familiar series of 20th Century-Fox Technicolored musicals, but Clarke and Davey have invested it with a more than ordinarily excellent photographic mounting. This, despite considerable handicaps; some scenes, like the opening one, offer extremely difficult problems in coordinating intricate moving-camera shots with changes of lighting, music and action, while at various times during production some, or all of the principals were in poor health.

Clarke and Davey have surmounted all these obstacles unusually well. They have kept the principals—especially Alice Faye and Lynn Bari—looking much more than ordinarily well. And where the opportunity has offered (as in the London stage sequence) they have achieved strikingly pictorial effect.

No comment on this picture would be complete, either, without mention of the unusually fine color art-direction by James Basevi and Boris Leven, which takes place as one of the very best achievements in this field so far.

SHADOW OF A DOUBT

Universal Production.

Director of Photography: Capt. Joseph Valentine, A.S.C.

This was the last production Joe Valentine photographed before entering the Army, and it is a very fitting swan song for him. When he told us of how he made the major part of this production on location in an actual Northern California town instead of under controlled studio conditions (See *AMERICAN CINEMATOGRAPHER*, October, 1942), some of us very understandably wondered if he could, under such unconviction conditions, do as well as he said his rushes proved. The completed picture provides a convincingly affirmative answer, for it is one of his very best achievements, and carries a note of realism which is refreshingly new.

Valentine's handling of both the locations and the people is excellent. In the latter part of the picture, it seemed to us that he did not present Teresa Wright as favorably as he did in the opening sequences; this, however, may well have been more largely the fault of Miss Wright herself and of Director Hitchcock, in their concept of how she should portray the "shadow of doubt," which necessitated expressions and angles which do not show this player at her best. Some of the scenes of Joseph Cotten, too, seemed too obviously to be striving for effect, and carried a touch of the Orson Welles influence we've never before seen in Valentine's work. We can't help wondering, too, if the obvious "planting" of Cotten as the murderer in the opening of the picture didn't weaken Hitchcock's usually suspenseful treatment of the rest of the story. We've an idea it did.

THE DESPERADOES

Columbia Production (Technicolor)

Directors of Photography: George Meehan, A.S.C., and Allen M. Davey, A.S.C.

This lavishly-Technicolored "western" is certainly worth seeing from the photographic viewpoint. The exterior sequences—filmed, we believe, in Utah—are spectacularly pictorial, and certainly show the experienced hand of George Meehan, who is one of our favorite filmmakers of outdoor scenes.

The opening sequence, played entirely in night effects, gets the picture off to an interesting start. Some of the effect-lighted interiors, however,—especially those in the stable—seemed to us to have been lit a bit too sketchily. They showed a commendable imagination in lighting, but the extreme contrast between the fully-lit highlights and the completely empty shadows seemed unnecessary, and would have benefited greatly by more conservative control of illumination contrast.

Meehan and Davey have dealt unusually well with their players, with the exception of Evelyn Keyes, who was placed at an unfair disadvantage by an

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Making 16mm. "Horse Operas" in New Jersey

By REGINALD McMAHON

DISSATISFIED with Hollywood's version of what constitutes a thriller, a group of Passaic, N. J., youths have organized their own movie company, Adventure Pictures. Production up to present has always been hard ridin' westerns or jungle mysteries.

The group was organized in 1936 by twenty-year old Louis McMahon. Since he was a youngster, Lou has been going to the movies to see westerns and serials. He has studied them thoroughly and with this background, he gathered his friends together to produce his own photoplays. But rather than imitate Hollywood's accepted formula, Adventure Pictures is striving to produce westerns in a manner far different from the usual grade "B" hoss opera. They feel that this popular type movie story offers opportunity for more characterization and intrigue than has been realized.

So far they have succeeded in the successful elimination of heroines (which they consider a great step forward.) Director McMahon, as well as the rest of the group, believe enough westerns have been ruined by inexperienced, overly made-up actresses. Another point they object to is the elaborate costumes worn by the hero. "You can't create the atmosphere of the West by white hats, silk shirts, and crooning cowboys," is the young director's comment.

Adventure Pictures travels to loca-

tions via the local bus line. For western locations, the group uses the Paterson Mountains in New Jersey where the boulders have a striking resemblance to the west; in fact, most of the professional industry's early westerns were made on this location, before the industry moved to Hollywood. Their bandits' stronghold is an abandoned rock quarry, complete with towering cliffs and crumbling old shacks.

Every movie that Adventure Picture puts out must have its quota of hair-raising thrills. For this, the group's own stunt man is called in. A future production, this time a modern chapter-play, will feature him in a role similar to Richard Talmadge of the silent days. They plan to have fifteen chapters, each one a hundred feet in length. Practically the entire group has joined the local Y.M.C.A. to practice the stunts they intend using.

Above: making a scene from "Pals of the Plains" in the back-yard that was revamped into a Western town. On opposite page, top, left to right: a dummy goes to its doom from a New Jersey cliff; middle: rearing horses are essential to "Westerns"; right: Adventure Pictures' stunt-man does his stuff. Middle, left: Scenic beauties in a favorite location; center: director-producer Louis McMahon gives last-minute instructions to the cast while cameraman John Maluda lines up his shot; right: Louis McMahon, who founded Adventure Pictures. Bottom: the troupe goes on location by bus—positively not chartered! Right: a miniature shot from "Mars," science-fiction epic now in production. Photos by Reginald McMahon.

After five years of movie making, three one-reel pictures, "The Texan," "Jungle Jim" and "Pals of the Plains" have been completed. These are simple films produced mostly for experience. Now the company is hard at work putting the finishing touches on "The Black Rider," a more pretentious production, requiring four summers to complete at a cost of over \$200. Of the three thousand feet of film shot on this three-reel picture, only twelve hundred will be used.

During the filming of "The Black Rider," ingenuity had to be exercised to the fullest extent to keep expenses at a minimum and yet follow the elaborately-written scenario. Although amateurs usually attempt something beyond their means, "The Black Rider" has so far worked out fairly close to the original conception.

The amazing acrobatics of Douglas Fairbanks, Sr., whose films are currently being revived at the Museum of Modern Art in New York City, inspired the boys to inject as many stunts into the film as they themselves could do physically or by camera trickery.

One of the thrilling stunts at the climax of "The Black Rider" called for the hero to cut off the escaping outlaw by climbing up a fifty-foot rope hand-over-hand. But the hero, instead of

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Some of the all-time great amateur films like Randolph Clardy's 8mm. "New Horizon" (frame enlargements below) and Richard Lyford's "Ritual of the Dead" (right) should be studied as examples of forceful visual story-telling.



Accent On Pantomime

By STANLEY O. BEAN

WHETHER or not we amateurs have film "for duration" is no reason why our interest in this creative hobby need be rationed. When we have film, we should strive to make every foot count, not merely from the phototechnical standpoint of correct exposure, correct focus, and pictorial composition, but from the standpoint of telling a story visually by means of a correct photodramatic balance of long-shots, medium-shots and close-ups which will center the attention of the audience on what our picture is trying to tell them, with a minimum of mental interruption from the mechanical means by which we are doing so.

When we haven't film, we ought at least to spend some of our leisure time studying and planning how to achieve that technical and story-telling smoothness. Those of us especially who enjoy creating photoplays, whether on silent or on talkie film, can make particularly good use of spare moments spent planning the best way to present future stories.

It isn't enough to have merely a story

and a cast of people who as regards age, size and gender meet the bare outward requirements of the parts they are to play. Those who are to portray the characters should be chosen for their ability to express emotions with their eyes, face, hands and physical movements. And they should be so directed as to give those abilities the fullest play.

In this, the best of both professional and amateur photoplays can serve as living textbooks. But note—I said the *best* of them! The heyday of the silent screen was too often filled with features relying upon the printed title and upon popular names, rather than upon a portrayal of believable people in plausible, human-life dramas. Too many talkies have been produced from poor stories and cast with players dependent upon voice and noisy backgrounds to impress the audience, rather than upon visual-minded acting for the camera.

The amateur photoplay can't afford to fall into these pitfalls. Being amateur, it has to be more than just merely good in order to hold the interest of its audience sufficiently to be pronounced "good" by the average, non-moviemaking spectator. Perhaps the most important single factor in making an amateur photoplay dramatically effective is careful attention to visual pantomime in both acting and direction.

Luckily, Hollywood's really fine cinema achievements—both silent and sound—offer us excellent examples of this to study and follow. We can benefit our own films enormously by analyzing the methods used by these top-notch directors, writers and cinematographers

for putting over dramatic points visually. The players, too, who hold our attention by their convincing pantomimic performances should awaken in us a desire to lift our own films above the commonplace by making them really live.

Among recent big films whose players excellently demonstrated pantomimic values I can mention Alfred Hitchcock's suspenseful, "Suspicion," calling upon its principal players, Cary Grant and especially Joan Fontaine, to demonstrate inner thoughts and fears so convincingly as to arouse the emotions of the fan to despise or sympathize. The motor trip along the winding road above the sea gave much footage of film to unspoken, appealing drama, played only by the eyes and facial expressions.

Again in "The Invaders," the scene in which the Elder of the sect which worked in communal harmony, speaking to his people and to the escaped Nazis was essentially visual. Here much of the story was unfolded to us as the camera sought out the many faces—each profound in its revelation of defiance, hate, love, fear, hope, and understanding.

A lesson in building up to an intense outburst of smoldering inward emotions began with excellent unspoken dialog on the part of the Aunt in "The Magnificent Ambersons."

Sensitive, deep and tender emotions, so difficult to play with conviction, were ably demonstrated by Bette Davis and Paul Henreid in the unforgettable, "Now, Voyager."

Important critics of the legitimate

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There's A Job Overseas For Your 16mm. Sound Projector

By CAROLE LANDIS

THE American boys who are fighting for you in Africa, in Alaska, on Guadalcanal and New Guinea—and in thousands of God-forgotten little Hell-holes all over the world that are only pin-pricks on the map to most of us—need *your* 16mm. sound-film projector. They've got a job for it to do that's as important as any gun or tank. More important, for it's a job for *them*—something that will make it easier for them to endure all the hardships and privations they face on those far-away fronts.

I can tell you that from first-hand experience, for I've just gotten back from nearly five months spent entertaining the boys in England and North Africa. Speaking in the physical sense, the boys over there—even at the firing front—don't go physically hungry. Maybe the cooking isn't like mother's, and the service interrupted by Jap or Nazi bullets, but there's food to eat, and enough of it.

But our boys in those foreign posts are starving for entertainment . . . entertainment to take their minds away from killing, and from the interminable waiting for something to do which is even worse. Entertainment to put them, for a blessed moment, at least, in touch with home and the little, routine things of life at home.

You and I, as we sit comfortably here at home, surrounded by scenes and people all too familiar to us, don't realize that. If we give it a thought, we probably figure those boys in the African force are lucky to be doing their soldiering amid all those strange and exotic scenes and peoples. We conjure up mental pictures of all the "Arabian Nights" movie-sets we've ever seen, and picture our boys meeting veiled harem beauties as exotic as Hedy LaMarr, or Sheikhs like Rudolph Valentino . . . new places, new faces, new experiences at every turn. Maybe we grow a little envious.

But when you really get out there, as I did, you find it's something disillusioningly different. Dirt—heat—dust—smells—your "Arabian Nights" romance crumbles into a squalid—and mighty uncomfortable—reality. And above all, there's the maddening monotony that can drive men mad. There's fighting—yes, for some of them, but that only a part of the time. For thousands of them there's

only the day-in-day-out job of driving a truck, or repairing tanks or planes. In between, when you're not on duty, there's nothing—literally *nothing*—to do. No books, no magazines, no radio, and nobody but the sweaty soldiers you've seen too damned much of anyway to talk to. Even if you should have one of the "soft" billets (Heaven save the mark!) in one of the base camps or cities, there's still nothing to do in your off-duty hours. The natives don't speak your lingo—and even if they did, there are orders (for your protection) against mixing with them or going into their cafes or show-houses . . . too much danger of breaking Moslem taboos you never knew about, and insulting people who we want to be our friends, and who want to be, too, but who have their own peculiar customs, that can be outraged as easily as ours would be if some foreigner roller-skated into church smoking a pipe.

The answer to this is movies—American movies, the same pictures Joe Soldier might see if he was back home in Keokuk. The touch of home that Ty Power or Alice Faye or Mickey Rooney or the Aldrich Family bring. That . . . and something that takes your mind off real-life surroundings and hardships that are nearly driving you wild.

Hollywood's studios—bless 'em for it—are making available to the Army and Navy prints of all their latest pictures—often weeks before they're released to the cash audiences here at home. Since shipping-space is such a problem, the prints for overseas use are in 16mm.

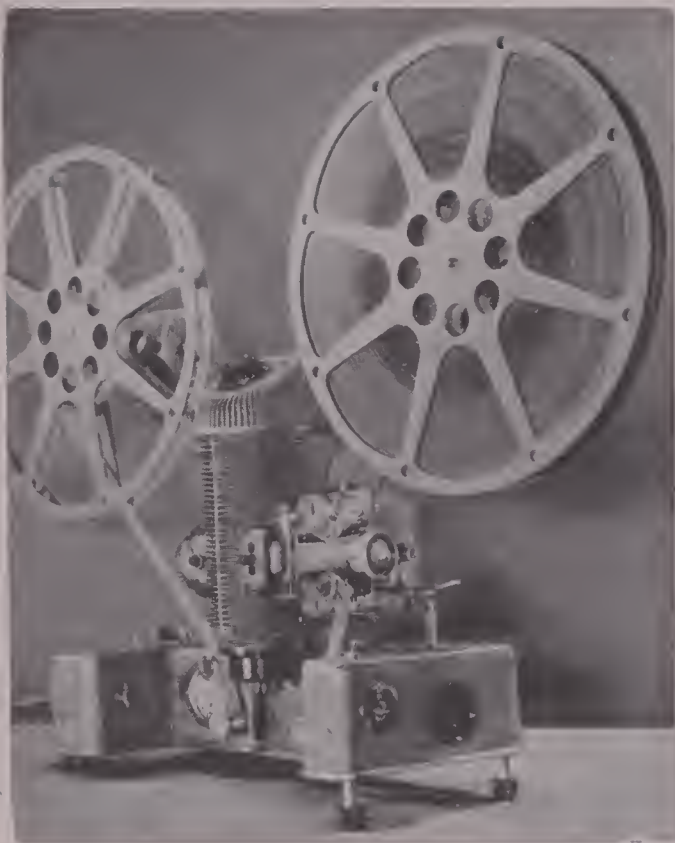


Carole Landis packs her own 16mm. sound projector for service at the front. (NOTE: This is not a publicity gag—Miss Landis' projector is really being shipped to entertain the men overseas. Ed.)

You can slip a couple of 1600-foot 16mm. reels into a cargo-bomber's load where there wouldn't be room for the eight bigger, heavier 1000-foot reels and their heavy, steel shipping-case needed for the same picture in 35mm. And once you get there, today's 16mm. sound projectors will do just as good a job of showing the film, with much less complication and trouble. I think it was General Vandegrift of the Marines who reported that as soon as a beachhead had been secured on one of the Jap-infested islands in the Pacific, one of the first things to come ashore would be a 16mm. sound-projector and films—if any were available.

And how those boys revel in film entertainment! It doesn't matter if they've seen the picture four hundred times before—it's still something to take their minds off hardships and trouble. It's still a sight of normal American girls, doing normal American things. In Africa, we four girls never got over our amazement at the way the boys responded whenever we appeared—even if it was only riding in a jeep from one camp to another. Every soldier within eyeshot would drop whatever he was doing and stare at us, open-mouthed (and entirely reverent) with amazement. Sometimes you'd hear some of them

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Take Care Of Your Camera And Projector — They're Priceless!

By JAMES R. OSWALD

WITH wartime restrictions making film and other photographic supplies more and more difficult to obtain, it might be well to stop and think about how we are going to conserve our present equipment so that it will give maximum service and enjoyment.

To begin with, a good camera and projector are truly precision instruments, like a fine watch. We should treat them as such and be proud of them, just as a good carpenter or machinist takes pride in his finest tools. Every camera and projector is accompanied by an instruction manual, frequently overlooked, but nevertheless there for a very definite purpose. The service life and enjoyment of the instrument is directly dependent upon how closely these instructions are followed. Although every make and model is slightly different, the basic rules for their care and maintenance are the same and hence can be briefly outlined here.

Taking the camera first, probably the most important items to remember are utmost cleanliness and careful handling. The camera very likely has been subjected to much more abuse than the projector in that it has been "knocked around" here and there in your travels, been showered with sand at the beach

party, or perhaps locked in the glove compartment of the car when the temperature was 110 in the shade. Any dust or dirt on the lens, and particularly the aperture gate, can easily spoil an entire film by causing an unsightly fuzz fringe around the picture, about which nothing can be done later. It should be mentioned here that a very soft or lintless cloth must always be used to clean the lens and gate. As for oiling, most home-movie cameras are permanently oiled at the factory and thus require no attention in this respect whatsoever. However, if yours is the exception, remember to keep the oil away from parts that the film touches and always wipe the excess off so that dust will not accumulate. Consult your manual if in doubt.

What applies to the camera also applies to the projector, so far as cleanliness is concerned. Both are constructed basically the same, each having many of the identical or very similar parts of the other. Though the projector may not be handled nearly as much as the camera, much more actual running service is demanded of it. A film is run through a camera once, whereas the same film is run through the projector over and over again, to say nothing of the many professionally-made reels we may rent or purchase to add a little variety

to our own program. It is very obvious, therefore, that we must really show a little consideration toward projector maintenance if we expect to continue to be entertained by our films.

As with all mechanical apparatus where there are revolving shafts and swiftly-moving parts, periodical lubrication is essential to smooth, quiet operation, and minimum wear and tear. The frequency with which this oiling should take place depends, of course, on the amount of use to which the projector is put. Once a month should be sufficient, provided the machine is not used excessively. A small oil-can should be used and the oil applied sparingly, being careful to wipe all the excess off the projector when finished. Lubricate the upper and lower reel-spindles, the sprocket-shafts and any other place where oil cups are provided or where there are moving parts. Use a high quality light oil, for good oil is a cheap investment in this case.

Lamp adjustment varies widely in different makes and models, hence nothing very specific can be said on this point. Proper adjustment is very important, however, for maximum brilliance, and should not be overlooked. For best results, the reflected images of the lamp filament should be thrown between the direct images. By holding a piece of white paper in front of the lens-mount with the lens removed, the lamp filaments are projected on the paper. If the projector has a "still" clutch, this should first be thrown to stop the shutter from interfering. The paper is then moved back and forth until the filaments are clearly focused. Since the reflected images have to travel back to the reflector and then forward

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AMONG THE MOVIE CLUBS



Philadelphia Elects

March means election of officers at the Philadelphia Cinema Club. The newly elected officers for the ensuing year are—President, George A. Pittman; Vice-President, Arthur J. Hurth; Secretary, James R. Maucher; Treasurer, Herbert L. Tindall, Jr.

To further enlighten the members in the art of movie-making we are showing a series of educational films from the library of the Harmon Foundation. This series will run into the fall meetings and it is proposed that each film be augmented by a lecture to be given by one of our own members. Mr. A. L. O. Rasch initiated the series with an enlightening talk on editing.

A new feature, namely the door-prize, was introduced by George Pittman, the two winning members each receiving \$1.50 in War Stamps. Members were asked to donate 10c each which will provide for War Stamps to be drawn at the next meeting.

On the screen we were entertained with three professional sound films—Eastman Kodak Company's "Cavalcade of Color"; a film of North Carolina, showing the Shenandoah National Park, the East Coast and the Great Smokies; and a film of Virginia, featuring the Luray Caverns and other beauty spots of this state.

FRANCIS M. HIRST,
Publications Chairman.

Prize 8's For Westwood

At the March meeting of the Westwood Movie Club of San Francisco, three prize-winning 8mm. films from the library of THE AMERICAN CINEMATOGRAPHER were screened. These were "Cattle Country" and "New Horizon," by Randolph Clardy, and "Red Cloud Lives Again," by Dr. F. R. Loscher. In presenting these films the program chairman read excerpts from a letter from

INDIANAPOLIS LISTENS TO S. O. F.—Members of the Indianapolis Amateur Movie Club at the group's March meeting, devoted almost entirely to amateur-made 16mm. sound-on-film. Left to right: Lyons B. Ford, Dr. Arthur Richter, Dr. William E. Gabe, L. Dradfield, President (and Projectionist), G. A. delValle, Oscar Peters, Roger Sneden, Corresponding Secretary Elmer Culbertson, Vice-President Al Thomas, Willard Reynolds, Jim Makin, Wilbur Worl, Treasurer Al Kaufmann and (in foreground) Secretary Clarence Wetzel.

the Editor of THE AMERICAN CINEMATOGRAPHER, analyzing each of these films. This commentary was appreciated by everyone present, as it made the pictures much more interesting and instructive than if they had been presented "cold." As an experiment, the showing of these films proved quite a success, attracting many visitors as result of publicity in the San Francisco press. There were many comments to the effect that this was one of the best evenings of entertainment and education the Club had had in many months. We all congratulate THE AMERICAN CINEMATOGRAPHER on this fine service rendered to movie clubs. The showing of outside amateur films is a definite stimulant to the making of better movies by our own members. The things we noted most in these pictures were the unusually fine camera-angles, the composition, and the lighting, in all three films. In addition the acting in "New Horizon" was exceptional for amateur work.

GEORGE LOEHRSEN,
Program Chairman.

Sound In Indianapolis

The March meeting of the Indianapolis Amateur Movie Club was originally planned as an all-sound meeting, to show what other amateurs were doing with 16mm. sound-on-films. However, the plans were changed slightly when our Lyrical Medico, Lt.-Comm. Dr. Joe Sovine, now on duty at a West Coast Navy Hospital, sent in a reel of 350 feet of beautiful 8mm. Kodachrome, appropriately entitled "Pacific Suite," which was greatly enjoyed by all the members.

The sound-film portion of the program included the Long Beach Cinema Club's celebrated "Fire From The Skies," screened through the cooperation of THE

AMERICAN CINEMATOGRAPHER and Vice President Mildred J. Caldwell of the LBCC. This film was unanimously acclaimed the best picture of its type ever screened by the Club, and one of the best amateur films ever seen. After seeing it, we decided to take a few more pains with our own forthcoming 1943 Club Production! Also screened was a film loaned by Kenneth Hezzelwood and Joe Lucius of the St. Paul Amateur Movie Makers' Club. The subject was St. Paul's annual Winter Carnival, and the sound was post-recorded on the original film with Hezzelwood's "Auricon," after the picture was shot, but before the film was processed. There was no small amount of praise from the audience for both of these filmers for having done so difficult a job so well.

ELMER M. CULBERTSON,
Corresponding Secretary.

Sound and Prize-winners for 8-16

Furthering its educational program, the 8-16 Movie Club of Philadelphia highlighted its March meeting with a lecture by George Beggs, sound research engineer, who spoke on the principles of recording and amplification. The ensuing discussion which Mr. Beggs conducted proved particularly valuable in solving the problems of the members who had advanced beyond the early stages of home record cutting and amplification.

Upon completion of the educational phase of its meeting, the organization followed with its regular entertainment schedule with a showing of "Nite Life" and "Mt. Zao," secured from the film library of THE AMERICAN CINEMATOGRAPHER. The latter, especially, was pronounced a beautiful film.

WALTER J. MASTERS.

HERE'S HOW / DID IT

By OUR READERS

READERS of THE AMERICAN CINEMATOGRAPHER constantly write us for answers to their movie-making problems; the most interesting of their questions are published from time to time in our "Here's How" department. But sometimes they turn the tables on us, and send in hints on how they overcame various movie-making difficulties for themselves. Here's a group of these helpful hints we feel will be of aid to other filming readers.

Speeding Up Kodachrome

Ice revues like the "Ice Follies," "Ice-capades," etc., are favorite movie subjects, and so colorful that Kodachrome is "a natural"—except for one thing: the comparatively slow speed of the Kodachrome emulsion, which usually forces ordinary folk with $f:2.5$ and $f:2.7$ lenses to shoot at 8-frame camera speed, which naturally makes the action move at twice normal speed.

I've found the answer to this problem by hypersensitizing my film—*after exposure*, but before processing—with mercury vapor. Depending on the time allowed for the hypersensitizing process, you can increase the speed of your film from 75 to 150% by this method. That means from a half-a-stop to a stop, or even a stop-and-a-half. At the maximum it turns your $f:2.5$ lens into almost the equivalent of an $f:1.6$ objective, and does this without harming the color-rendition, definition or graininess of the picture.

It's easy to do. I shoot 8mm., and I found myself a glass jar (originally a peanut-butter can) the mouth of which was just the right size to hold an 8mm. camera spool edgewise, without letting it drop through, and a vacuum-seal coffee-can big enough to hold the glass jar with a 25-foot spool of film in its mouth.

In the bottom of the glass jar I put a small amount of mercury. Above it, standing on edge in the mouth of the jar, I put my film, on its 25-foot camera spool, and with the little paper band around it to keep the film from unrolling. Then I put the whole thing into the tin coffee-can, replace the coffee-can's metal cover, and seal it up with tape so it is air-tight.

Then I let my hypersensitizer stand for at least 48 hours *at room temperature*, then open it up, and send the film to be processed. I've since learned that for spooled film, you get the maximum effect by leaving the film in the mercury fumes for a week or ten days. If you're in a hurry, you can speed things up by unspooling the film so the fumes can penetrate it more quickly; in that case you cut the time down to about 36 to 40 hours.

Either way, you can get a stop or more increased speed out of your film, so you can shoot at normal speed where otherwise you'd have to shoot at half-speed, or use an $f:1.9$ (or faster) lens.

FRED EVANS.

Big-Screen 8mm.

For the information of those interested in showing 8mm. movies on auditorium-size screens, I herewith present my experiences with the subject.

I have a new Keystone A-8 8mm. projector and have found that it is well suited to long throws. With the standard projection lens furnished with the machine I am able to project a screen image 9 feet 7 inches wide at a distance of 56 feet. The projector has a 750-Watt lamp and the screen image is as bright as I want it to be.

One point should be carefully noted, however. When blowing 8mm. movies up to 9 feet or more, or anything larger than about 6 feet wide, it is necessary to keep the audience at least 20 feet from the screen. Closer than that, the image blurs out. Viewed from a distance greater than 20 feet from the screen the image is just as sharp as on a small screen.

JOHN F. MEEKER.

"Breezing" in the Gate

Though the performance of the Bolex camera I use for professional 16mm. camerawork is excellent, I noticed that in some instances there was evidence that the film was "breezing" slightly in the camera aperture—that is, bowing slightly, so that the picture would get a bit out of critical focus every now and then.

I cured this very easily, by a method which ought to work just as well with other kinds of cameras, and probably in 8mm. as well as in 16mm. I cut out a tiny piece of Scotch tape, just the size of the 16mm. frame, and put it on the aperture-plate just behind the picture-taking aperture. This is just enough to hold the film flat in the focal plane, and to prevent it from "breezing." I've shot literally hundreds of thousands of feet of film with my camera fixed that way, and with no damage to the film.

WILLIAM A. PALMER.

Emergency Splices

It's embarrassing when the film breaks in your projector in the middle of a show, and a quickly-made emergency splice can help you keep the show running with a minimum of interruption. You can easily supply yourself with ready-made emergency splices if you will stick a few short strips of Scotch tape,

just the width of your film (less perforations) inside your projector-case. When the film breaks, just slap a couple of these ready-cut strips on the film—front and back—and you're ready to roll again. If the Scotch tape doesn't cover the perforations, these emergency splices will even go through the projector without breaking.

C. WILLIAM WADE.

Cleaning Lenses

Even the best of the so-called "lens cleaning" tissue is rough enough so it's likely to scratch fine lenses. In the studios we never use it. Instead, when we have to clean a lens we wrap a little tuft of cotton around the tip of one of the little wooden applicator sticks doctors use, dip the cotton in the regular lens-cleaning liquid you can get at any optician's shop, and clean the lens with this, using a slow, gentle circular motion. Afterward we dry the lens with a dry cotton-covered applicator.

Several things are important in this. First, see that there's enough cotton on the applicator to pad the end of the stick so the wood itself doesn't touch the lens. (If you have trouble making the cotton adhere to the stick, moisten the stick with water, or even saliva, before twisting the cotton on.) Second, don't use too much of the cleaning liquid; after dipping the cotton into the liquid, squeeze the excess liquid off against the mouth of the bottle. Finally, never scrub the lens: do everything gently, and use a very soft camel's-hair brush or a small, rubber bulb syringe to remove dust. And always keep the lens capped except when you're shooting!

S. L. LENZ.

Replacing Photofloods

Now that Photofloods are frozen, everyone is looking for something to take their place. For black-and-white, several of the large-sized Mazda lamps, and particularly the different sizes of projector, stereoptican and spotlight bulbs will do excellently. But they are too red for use with Kodachrome unless you use a filter.

However, there are two ways of getting the brighter and whiter light we need for Kodachrome (when we can get the Kodachrome!) One is to use regular house lamps with a step-up transformer which will increase the voltage by one-third to one half or more. This gives much the same effect as a Photoflood: a very intense, white light, with about a 2-hour burning period.

The other way is to do what, so they say, originated Photoflood bulbs. There are special bulbs—usually rated at from 60 to 64 volts—made for lighting railroad cars. It was found that amateurs could get fine photographic light by burning these bulbs on regular 110-volt house current. If you live near a railroad center, you may be able to get hold of some of these bulbs, and they'll do today what they did years ago, when they started the Photoflood idea accidentally on its way!

A. SMITH

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RE-BOUND BOOKS WITH BRAND-NEW LOOKS

Documentary, 400 ft. 16mm. Kodachrome.

Filmed by Pat Rafferty.

When the average amateur attempts to make a movie about his business, he generally forgets two things. The first of these is that some thread of story is usually necessary to make it palatable to audiences. The second is that he should leave nothing untold—especially in close-ups—because details with which he may be expected to be familiar may be entirely unfamiliar to audiences who haven't his day-to-day contact with that particular type of work.

This picture is one of the comparatively few which fulfill both of these conditions almost perfectly. For its thread of story, it tells of a book, borrowed from a library by a youngster, and accidentally torn apart in an altercation with a friend. From this point, it follows the book from the library to the firm by which it is re-bound, through all the mysterious operations of re-binding, until it finally emerges looking for all the world like a newly-purchased volume.

The major part of the picture consists of excellent interior scenes. In these, the lighting and exposure are excellent, and there are plenty of graphically revealing close-ups, and plenty of excellent explanatory titles. In fact, with the exception of the fact that we thought there should be a full-screen close-up or two of the stitching operation, we couldn't find anything to criticize in this film.

WHEN OCTOBER COMES

Scenic; 175 ft. 16mm. Kodachrome.

Filmed by Ray Fowler.

This is one of the most vividly colorful presentations of autumnal coloring we've had the pleasure of screening. Photographically—as regards exposure and composition—it is very nearly flawless.

Unfortunately, the other aspects of production fall down badly. Filmer Fowler has made a praiseworthy start by showing three children gathering autumn foliage, and keeping a fairly logical and obviously well-planned sequence of movement between one scene or sequence and the next. He fails, however, to tell a story. The story could be simple enough—perhaps a few introductory shots of the children's mother wishing she had some autumn foliage to decorate the home for Thanksgiving, or perhaps the children studying about autumn in school. This could be followed by scenes showing the children (with or without their parents) deciding to go out and get some. The actual "going"

needn't be shown: in fact, it could be concealed by a gag, such as a close-up of an "A" sticker on the windshield of the family car, followed by a title—"so we won't tell you how we got there!" Following the shots of the actual gathering of the gorgeous gold and orange leaves, the picture could be quickly ended by a few shots of the colorful leaves being put into decorative use at home or at school.

More careful cutting would be very beneficial: repeatedly we see action started, and never finished, or aggravating overlaps of action between successive scenes. The picture looks as though the filmer tried to edit it in the camera, and almost did so, but forgot to snip out these false starts and overlaps. More subtitles—colorful, and perhaps worded a bit poetically—would also be helpful.

CERAMICS

Documentary, 299 ft. 8mm. Kodachrome.

Filmed by Lorin Smith.

This is an interesting little picture about a man and his wife whose real-life hobby is making pottery. Strung on the framework of a visit to this couple by the filmer's wife, the picture lets the couple explain how they make their pottery. It is told with excellent completeness, using the flash-back technique to show how the amateur potters drive to the clay deposits to gather their raw material, and how they subsequently work it into pottery bowls, dishes, vases and ornaments.

Both the photographic and the presentational techniques are excellent. There are almost enough close-ups of the various operations, and abundant titles—excellently made—tell the story clearly. We would suggest, though, that most audiences would rather like to know how the rocky-looking clay we see the potters gathering becomes the moist plastic that is molded on the wheel. And it would seem better technique, too, if no shots of the husband at his wheel were seen until the two ladies enter the workshop and bring the story to that stage of the pottery-making.

THE MINOR MINER

Scenario-type home movie; 50 ft. 8mm.

Kodachrome.

Filmed by Wendell Taylor.

Here's a very clever approach to the problem of making a movie of Junior and giving him something dramatically interesting to do. Photographically, the picture has distinct shortcomings; but the cleverness of the staging lifts it well above these faults. The handling of the mine cave-in is one of the best bits of amateur direction and staging we've seen in a long time.

It is unfortunate that the introductory and closing sequences could not have been filmed under more favorable lighting conditions. Kodachrome is never at its best when shot under such heavy shade, and in this case, the contrast between these scenes and the rest of the picture, which was shot under normally bright sunlight, puts the film at a decided disadvantage. These initial and concluding scenes should have been shot at a more sunny time of day, or in a different, and sunnier, location.

The editing and continuity of the picture could be improved by closer cutting and the removal of overlapping action, as for example in the long-shot where the youngster is shown approaching the mine from the outside, followed by a reverse-angle shot of the same action made from inside the mine. Here the cut should have been made when the boy was at approximately the same spot in both scenes, rather than showing him walking right up to the entrance in one shot and then apparently bounding back ten or fifteen feet in the following scene, and going through the same action all over again.

The picture could stand more footage and more titles. Perhaps an entire new sequence could be added at the beginning, showing the boy being reprimanded for some minor offense as his father leaves for work in the morning—perhaps told he can't go to the movie, or some similar punishment which would give him reason for additional footage and for saying, via title, that he doesn't see any reason for being alive if he can't do so-and-so. This would furnish a needed dramatic contrast to his spoken title at the end of the film in which he says he is glad to be alive. This and other spoken titles, by the way, should be intercut with close-ups of the person who is speaking.

A TRIP TO DREAMLAND

Scenario-travelogue, 150 ft. 8mm. Kodachrome.

Filmed by Earl Everley.

Here's another little picture which points the way to how you can with very little new shooting revise your last-season's vacation shots into an interesting picture. The story thread in this case is provided by an amateur who, coming home from work exhausted, sinks into his chair after dinner and, starting to read of films that would have won national honors, drifts off to sleep and dreams that his own vacation epic has done likewise.

The picture is at its best in these intimate tie-in shots. The photography and lighting are good, and the planning and direction excellent, with many little "human-interest" touches which make

(Continued on Page 148)

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Photography of the Month

(Continued from Page 135)

unusually poor (and greasy) make-up, which allowed the cinematographers no chance. The closing action of the wild-horse stampede was spectacularly handled, both directorially and photographically. Some of these scenes brought forth spontaneous applause from the preview audience, and all who saw the picture will certainly look forward to seeing more of Meehan's work in Technicolor.

EDGE OF DARKNESS

Warner Bros.' Production.

Director of Photography: Sid Hickox, A.S.C.

Special-effects by Willard Van Enger, A.S.C.

This picturization of the Norwegian "underground's" strife against the Nazis offers both director of photography Sid Hickox, A.S.C., and director Lewis Milestone the best opportunities either has had in a long time. As if realizing this, they have worked together to make "Edge of Darkness" one of those rare productions in which direction and photography seem working genuinely together for dramatic effect.

Hickox has kept a note of realism in his camerawork which very artfully conceals the fact that when the dramatically significant moments arrive, his camerawork is excellently attuned to the necessary mood. At times, by deliberately underplaying his camera and lighting effects, he makes his treatment serve as an enhancing counterpoint to the dramatic values of the action. It is by long odds the most effective work we've seen from his camera in a long time.

The special-effects work credited to cinematographer Willard Van Enger, A.S.C., and director Lawrence Butler is generally excellent, though there are two or three miniature scenes which are distinctly "miniaturish," and do not help the picture.

Ray June

(Continued from Page 132)

sets were L-shaped painted flats, with maybe a door or a window in them if necessary, but oftener just a couple of walls—sometimes with half the furniture painted on them.

"But there was one point which made up for all the other crudities. This was the trick work. Putting thrills in those old-time serials called for a lot of it—and there were no special-process departments in those days. The man at the camera did it all, right in the camera.

"There was one advantage in using those old Pathés, though. When you had to do a double- or triple-exposure shot, you could develop a few frames of a test-strip and put the developed negative in the aperture of the camera, and line up the next part of your shot with it by focusing on it through the little peep-

hole and magnifier at the back of the box.

"But matching up action was another thing. There were no frame-counters on those early boxes, and the footage-counters weren't as accurate as the ones they put on 8mm. cameras today; if you were lucky, they might tell you within five or ten feet of where you actually were. Later on, some of the boys added Veeder type frame and footage counters; but at the time I'm talking about, the best way to be sure of your footage was to count the crank-turns, for you knew that each turn of the crank exposed 8 frames—one-half foot—and if something happened, say, ten feet from the start of a scene, you could hit it pretty accurately by beginning from a marked starting-point and counting off twenty turns of your crank. Another nice little complication of those days was that often you'd make the two or three different parts of a multiple-exposed trick scene several days or weeks apart, and meantime you'd have each trick-shot taped up in its own little can, with cryptic markings scrawled all over the can. Often you'd have parts of a dozen or more of these shots lying all over the place.

"I'll never forget the thrill I had when the studio finally splurged and bought me a Bell & Howell. It was so much more advanced, and so much more accurate for my trick shots, that I was in a regular cameraman's heaven!"

When World War I came along in 1917, June naturally enlisted, and just as naturally was assigned to the motion picture division of the Signal Corps. There, his professional experience stood him in too good stead. He was assigned to the famous Signal Corps camera school at Columbia University, and spent his time training others—often men who had never seen a camera before—and seeing them shipped promptly overseas, while he remained at home, breaking in more photographic rookies, and occasionally "covering" some news-event for the Army. He must have been a good teacher, though, for many of the men he taught have since become well-known figures in the industry; some of them as cameramen, others as directors and even producers.

After the armistice, he went back to his old job of shooting serials, for the same producers. When they moved to California, so did he. But his first really important assignment on the coast was with a different producer—Marshall Neilan, who was in those days one of the industry's best-known producer-directors. On his first picture for Neilan—a silent-film version of Booth Tarkington's "Penrod"—he had an experience which amazed him. He and Neilan's regular cinematographer, Dave Kesson, were to handle the "production" camerawork, he found, while a specialist in trick-photography was to have charge of the trick-work of making "Penrod," day-dreaming in school, imagine he had learned fly, and float lazily up out of his seat and through the ceiling, only to re-

turn—suddenly—when his teacher rudely addresser herself to his physical body in the classroom.

"Why," asked June, "do you have to call in a trick specialist? On those serials we used to take people through brick walls, and do all sorts of much harder tricks, right in the camera."

To make a long story short, the work of the much-touted "specialist" didn't come up to expectations, and June was given a chance to try doing the shot his way. His shot stayed in the picture—and he himself stayed with Mickey Neilan for several years.

Finally, in 1929, his first big opportunity came. An independent producer named Roland West was making one of the first talkies for United Artists' release, and he hired Ray June to direct its photography. That picture, "Alibi," introduced Chester Morris on one side of the cameras, and Ray June on the other. It was one of the best and most spectacularly successful of the early sound-films, not only as a box-office hit, but photographically, as well. And for the following seven years, the United Artists executives saw to it that Ray June stayed at their studio, and entrusted their best pictures to his cameras. Among them was Samuel Goldwyn's "Arrowsmith" which, to this writer's mind, stands out as one of the two or three most perfect photographic jobs of the last dozen years, and along with Jimmie Howe's memorable "Transatlantic"—the first really well-photographed talkie—stands eternally to the discredit of the industry which failed to give them merited Academy Award recognition in their respective years.

Nearly seven years ago, June moved out to Metro-Goldwyn-Mayer, where he has remained ever since, one of the foremost artists in a studio with more than its ordinary share of outstanding cinematographers. At the Culver City studio Ray has proven his versatility by successfully handling virtually every type of production from frothy musicals and parlour comedies to heavy dramas and mystery films. His versatility has also brought him another, less enviable assignment: whenever any of the studio's other cinematographers falls sick or (whisper it softly!) encounters baffling photographic difficulties, Ray is sent in as the studio's unfailing pinch-hitter—and always delivers. One of these tasks was directing the photography of what is probably the all-time most spectacular musical sequence ever screened—the celebrated "A Pretty Girl Is Like A Melody" number from "The Great Ziegfeld." So incredibly complex was the timing of the camera-movement, the changes of lighting, the withdrawing of the successive curtains, and the inter-timing of these with music and action, that the studio had begun to consider it impossible—until Ray June did it.

His approach to his work is characteristic of this. "Like anybody else," he says, "I study the script beforehand, and try to plan out in my own mind the most suitable treatment for the story

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and players. Then I try to come as close to that ideal as I can; usually, when I see the completed picture I am only too aware of how far short I've fallen. But if you take your work seriously to heart, I suppose you can't help feeling that way.

"One thing I try always to keep in mind: that a good cameraman must never let himself become willing to do things always the same way. It's one thing to develop an original style: it's something very different to let yourself fall into a routine and do things in routine fashion, just because it's easier or quicker.

"I think a big help in avoiding this is to study the work of other cinematographers, so that you can keep fully in step with the times not only in the strictly technical things, but in thought—in your approach to your work. Progress in cinematography isn't merely a matter of advances in our equipment and materials: it is much more a matter of changes in our conception of what constitutes good photography.

"There are certain enduring fundamentals, of course: but we may put them together in new ways, to gain effects that are more in keeping with the times. This applies equally to both technical and artistic treatment. Incandescent lighting, for example, is considered relatively modern: yet the first artificially-lit scenes I ever filmed were made under incandescent lamps about twenty-eight years ago.

"Only we used them differently. We

would have a bank of half-a-dozen or so lamps—big blue ones—on the floor on one side of the camera, and a similar bank on the other side. Then we'd have a flat, overall lighting from a third bank of 'inkies' placed overhead, with back-lighting coming from a few arc spot-lights behind and above the actors. Contrast that with a modern set, lit almost entirely with our modern Mazda spot-lights, with scarcely a floodlight (and never a 'bank') in sight. It's the same with our ideas about definition, diffusion and almost everything else. Maybe we're re-using ideas we used once before: but today we do it with a new twist that attunes it to contemporary thought. Today's popular increased-depth technique may be similar in principle to the f:64 sharpness demanded of cameramen thirty years ago—but there's a world of difference, not only in the way it is used, but in why it is used. Then, we did it to conceal the limitations of our medium; today, we do something similar in order to take fuller advantage of the potentialities of our medium.

"It's easy to talk about 'the good old days,' and remember how in those days before the business grew so big and bustling, we had so much fun. But the fun is still there, though it has changed to the very different enjoyment of trying constantly to keep ahead of the parade, both technically and mentally. That's a challenge that's perpetually worthwhile for all of us, especially as the scope of our work is so constantly growing in its effectiveness, and in our

ability to influence and help other people!" END.

Home Movie Previews

(Continued from Page 144)

the action ring true to most audiences.

The actual vacation scenes, while excellently photographed, don't measure up to this introductory sequence. They lack the story-continuity which could so easily have been added, especially since the same cast went on the vacation. The picture also needs a stronger ending, to point up the fact that it was all a dream. This could easily have been done by adding a few scenes in which the filmer found himself apparently receiving the desired honors, and was rudely awakened by his wife who wanted help with the dish-washing or some similar domestic task. Most complete titling would also help this picture.

THE LITTLE BUCCANEERS

Scenario type home movie; 140 ft. 16mm. Kodachrome.

Filed by Ted and Fay Geurts.

This is an excellent example of cleverly capable "home movie" production. Instead of just making a disconnected series of haphazard shots of the family's new sailboat and the neighborhood youngsters, these filmmakers have built up a clever, yet simple, little story of juvenile piracy inspired by seeing Dad putting the finishing touches on the craft. This gives a valid excuse for putting the youngsters in colorful costumes, and for getting plenty of close shots of all the children. The thread of story, climaxed by a clever surprise ending, makes this home movie a film interesting to audiences beyond the mere family or neighborhood group who know the young actors.

Technically the picture is very well handled. The exposure and compositions are very good, though in the early scenes the cameramen apparently forgot that cross-lightings and back-lightings—especially in color—usually require from a half-stop to a stop more exposure than a straight reflected-light meter reading. This, incidentally, can be avoided by using the meter for incident-light rather than reflected-light readings.

Continuity is excellent, and the editing and titling are very nearly perfect. The simple camera-trick by which a rope is animated to spell out the wording of the main and end titles—done by placing the camera upside-down in relation to the title-card, and then pulling the rope which has previously been arranged to form the necessary letters—gives a cleverly professional touch to the film. It is unfortunate, however, that the same color-scheme—white lettering on a dark-blue background—was not used throughout the subtitles, as well as the main title.

R-K-O Boom

(Continued from Page 130)

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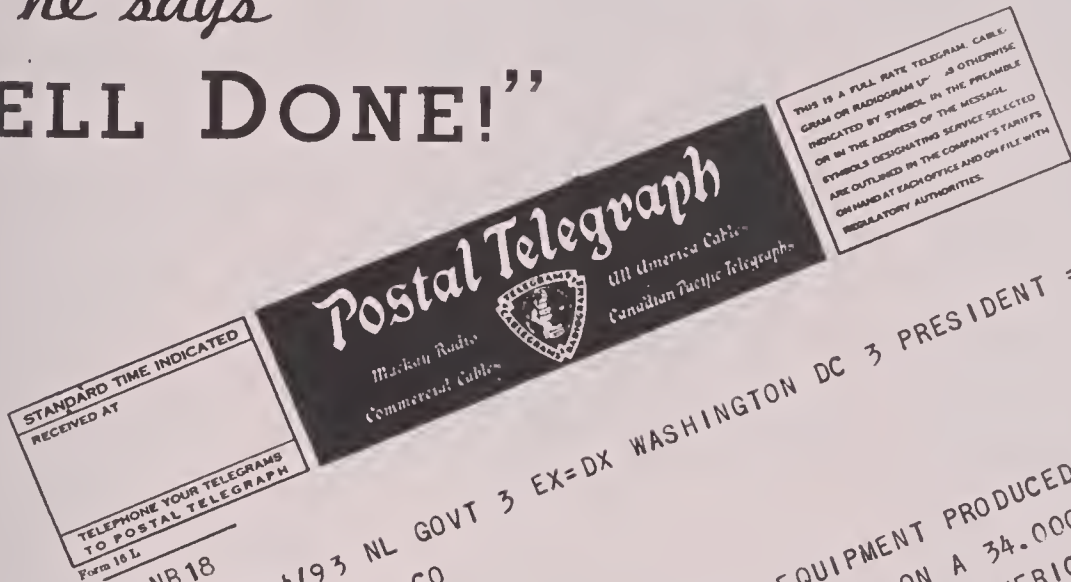
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and-white camera and two average-sized men. The design, however, makes provision for the increased loads which may at times be necessitated if miniature planes, foreground-pieces, or additional operators may be needed.

The cables which hoist the camera into position, and raise or lower the boom, are operated from compressed-air winches which are powered from a portable air-compressor. These units, too, were reclaimed from other service in the studio.

Current to power the camera is pro-

vided by a small gasoline-powered generator mounted on one corner of the boom's underframe. This supplies a much more constant power-supply than batteries, and since miniatures are shot silent, the noise of the generator is of course not objectionable.

It was originally intended to use an electrically-powered winch as the motive power for moving the boom along its track. As such winches were not available, however, a Caterpillar tractor was pressed into service. The tractor travels along a straight path beside the track,

and is connected to the boom's undercarriage by steel cables fore and aft which, passing through pulleys anchored to "dead men" at each end of the track, form what is virtually an endless-cable arrangement, by which when the tractor moves in one direction, the boom moves automatically in the opposite direction.

Speeds up to 10 miles per hour may be obtained this way, and with a skillful operator at the controls of the "Cat," the boom may be started and stopped with unusual smoothness, especially when it is considered that the camera rides at the end of so long an arm, and is 82 feet from the ground.

The camera is mounted so that it shoots straight down at the ground, upon which any desired type of miniature set may be constructed. When desired, the bombings may be very realistically simulated by dropping miniature bombs from beside the camera. When it is not necessary to follow the bombs to their target, electrically-controlled explosive charges planted in the set may of course be used.

As designer Martin expressed it, "The boom is hardly the most finished piece of equipment in the industry, but it was constructed at an extremely low cost, almost entirely of reclaimed materials—and it does what we want it to. Moreover, when the steel underframe is wanted for another marine set, the boom can be disassembled within a few hours, and reassembled again when needed, for in our adaptation of the chassis we haven't in any way lessened the usefulness of the steel frame for the purpose for which it was originally built. Every component we've added is attached by bolts, rather than welding or riveting, so what we have is really a dual-purpose unit which can quickly be converted to serve either purpose, yet with no sacrifice of strength or efficiency in either use." END.

Take Care of Your Camera

(Continued from Page 140)

to the white paper, they will not appear as bright as the direct images. Once they are properly distinguished, the lamp socket can be adjusted until the reflected filaments are between the direct filaments. This adjustment is very rarely necessary though, except when new lamps or lamps of different wattages are used. It might also be well to mention here that a bulb of the correct brilliance is almost equally important. One that doesn't provide enough illumination, or on the other hand one that is so bright that it washes out the picture, doesn't help your reputation as a good projectionist. Select one that is proper for the average distance and screen-size at which your pictures are shown.

So much for the camera and projector. Your films rank next in importance and your friends judge your cinematographic ability accordingly. There are many

various ways of arranging those reels . . . by dates, subject-matter, type, location, ad infinitum. Whatever your choice, those pictures for the most part can never be replaced, are priceless, and become more valuable as time goes on. They will last indefinitely if given just a reasonable amount of care. Why not dress them up in their finest form *now* instead of considering them as potential prospects?

To do this may require excessive use of the scissors, but be frank with yourself. Isn't it much more satisfying and interesting to look at 10 feet of properly-exposed action-shots on the screen than 100 feet of poorly-exposed, dull scenes that appeal to no one but are there just because they happen to be part of the reel? Maybe some friends will aid in giving an honest opinion, if you are, like most of us, biased in your own behalf, and can't stand scrapping so much film. At any rate, don't spare the scissors.

If at all possible, some sort of a sequence should be built up between individual scenes. This should have been taken care of at the time of filming, but a few titles here and there are a great help in bridging the gap between unrelated scenes. They should be kept at a minimum, however, lest they defeat their own purpose. Brief, direct-to-the-point wording is sufficient, and easier on the audience. Sometimes a clever, humorous title adds snap to an ordinary scene, if used in the right place. A preview of all your films before the editing is begun is advisable, as it refreshes the memory and suggests proper sequences. Written or mental notes should be made of all shots worth considering for your new reels.

Once the cutting has begun, every precaution should be taken to keep the scraps of film off the floor. There are many different ways for the amateur to go about this editing systematically. By placing the coils of film on a large table with an identifying piece of paper on each, much time is saved and the film is protected from dirt and finger-marks. In this manner the pieces can be spliced together in organized fashion as planned. A little more elaborate set-up can be made by driving nails in a piece of plywood, about 3 or 4 inches apart. The film can then be hooked over the nails which are numbered to correspond with an index sheet, listing each scene. When the film is all properly arranged, long leaders should be placed on the beginning and end of the reel. This saves wear and tear on the actual picture area and enables the film to be started from the very beginning. Unexposed, low-cost positive film is excellent for this purpose, or if this is not available, any old discarded film will serve in a pinch. A very good idea is to save for this purpose all the leader from the laboratory reels your film is returned on after processing. Another thing, always use reels of the maximum footage-size allowed by your projector. It saves that constant rethreading which



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is so boresome to an audience.

With the main part of the job accomplished, it is a wise procedure to clean the films to rid them of any dust they may have accumulated when in the process of editing. Any good, reliable film cleaner will do if instructions are carefully followed. This completed, the next step is to label the film containers for easy accessibility at all times. A typewritten label covered with a piece of Scotch transparent tape makes an attractive identification which is easily read and will stick permanently on the carton or tin. Sometimes people prefer to label the film leader also. If the

leader is frosted or blank film, this can be done by using India ink and is an added precaution in selecting the desired film.

There is much to be said in favor of presenting films with a musical background supplied either by a simple electric phonograph or a more elaborate automatic record changer or perhaps a dual-turntable assembly. If you have never tried playing records with your movies you are in for a pleasant surprise when you try it. You don't have to be a sound technician to handle the job properly. Common-sense will tell you the right type of music to select

for each film. At the conclusion of each selection, fade out the music gradually by turning off the volume control and fade in the new recording by gradually increasing the volume. This makes for more harmonious blending and is as important as fades and dissolves are to a movie. The dual-turntable referred to above has the added advantage of giving continuous music without interruption by blending the end of one selection with the beginning of another, similar to a lap-dissolve in a film.

In conclusion, let us resolve to treat ALL our photographic equipment as it deserves to be treated. Let us learn to get the most out of our hobby, no matter how meager or elaborate our equipment is. If we can do this we have many pleasant hours of entertainment in store for us . . . not only in the near future, but for a lifetime. END.

Accent on Pantomime

(Continued from Page 138)

stage admit the splendid training the cinema affords players who will study and absorb the successful effect they may achieve before the camera lens. Such a critic as Elliot Norton of the Boston Post had this to say of Paul Lukas, as Kurt Muller in the stage play, "Watch on the Rhine," (which, by the way, has lately been made into a picture), ". . . But Mr. Lukas can tell you what his man is thinking and feeling, and even what he has thought and felt for the past years, with his eyes alone.

"Because playhouses are big and gestures or vocal displays are generally considered more effective, most actors of the stage are not now masters of pantomime. Movie actors, on the contrary, compelled to face a curious and demanding camera, have a chance to develop pantomimic ability. It is perfectly possible that Mr. Lukas' incredibly successful use of it in this play is a matter of film training."

Examples of excellent silent-film pantomimic technique are available to most of us through the film rental libraries, most of which still carry both 16mm. and 8mm. reductions of some of the better silent features. Organized film-study groups, I believe, can also obtain 16mm. prints of the pictures in the library of the Museum of Modern Art, which is an unexcelled collection of the most magnificent professional productions from the very earliest experiments up to the more recent years of sound.

In using any of these silent films, by the way, it is most important to remember that they were photographed for projection at the silent standard speed of 16 frames per second, and if run faster (as on sound projectors) they will seem laughable, and their action exaggerated. Run them at their correct speed, even though some of them might have a musical sound-track added. You'll get more benefit by viewing them silent, at the correct silent-picture speed, than by listening to the added music which

necessitates speeding the projector.

Charlie Chaplin has been heralded as the greatest of silent-film pantomimists: but you'll find much to learn from almost any of the outstanding players of the silent-picture days. If you can get hold of some of Charles Ray's old silents, you'll find a lot to study in his acting, for many actors have gone on record as considering him an even more expressive pantomimist. There's a lot to support this contention: in one of his pictures I believe he held a single close-up for more than 200 feet (that's over 80 feet 16mm.) in which he not only kept the audience interested, but made every frame play an important part in advancing the story! And he had no dialog to help him in this achievement: he had to carry it solely on facial pantomime.

Some of the Museum's German pictures—especially "Variety" and "The Last Laugh," with Emil Jannings—are also outstanding studies in pantomime. The latter picture, by the way, was told entirely in pantomime, without a single subtitle.

Among the more easily available rental films, don't overlook films like "The Covered Wagon." In it—especially among the character players like Alan Hale, Tully Marshall and Ernest Torrance, you'll find plenty to study in putting over characterizations by visual means.

Some of the outstanding amateur films have shown careful planning, combining story continuity with a player or players with understanding of audience appeal through the part they portray, using silent art instead of elocution as their medium of expression. James A. Sherlock's "Nation Builders" was a fine example of a complete photoplay.

A short, one-man production of utmost simplicity impressed many at a Duncan Little Party, a few years ago—a color reel too—from the lens of that serious, cinema-minded Fred C. Ells, "Consider the Lilies." Silent eloquence on the part of a man and his blossoms!

Dr. Robert Loscher's "Red Cloud Lives Again," and Randolph Clardy's "New Horizon," both Grand Prize winners in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contests, show that visual-minded acting and direction can be applied to 8mm. as well as to 16mm. or 35mm.

"Tarzan, Jr.," with which William A. Palmer and Ernest Page won the first of these Contests ten years ago is another worthy of study, and one which shows that children are just as capable projecting sincere, pantomimic characterizations as are adults. Maybe more so, since they have fewer inhibitions.

J. Kinney Moore's "Prize Winner" is another amateur film that deserves study if you're interested in characterization and story presentation. And those who had the privilege of seeing the films turned out by Richard Lyford, Jr., before he went from the amateur ranks to the professionalism of the Disney Studio and, more recently, into the Army's photographic service, can

vouch for the fact that there was at least one amateur who could turn out a chiller melodrama with almost as great force and convincingness as a professional Boris Karloff thriller. More recently, young David Bradley's feature-length films like "Oliver Twist" and "Peer Gynt" have been amateur productions with a definite accent on visual characterization.

A look at almost any of these films is enough to make you want to get busy and try to turn out an equally fine picture of your own. Unfortunately, under today's conditions, not many of us can do that, though it might be possible if a sufficiently organized and enthusiastic group banded together and pooled their film, transportation, spare time and other resources.

But after all, the most thoroughly satisfying pleasure enjoyed by all amateur movie producers is the realization that theirs is a hobby for combined talents and abilities, and which offers unlimited possibilities. And this pleasure can be enjoyed almost as much in its mental aspect of planning and anticipation as in the actual realization.

During this crisis, time for relaxation is precious. Many of our friends have been called into uniform; others follow the clock around in the War Industries. But now and then we should make it a point to get together at our cinema club—at your house, or at mine—and look over some of these old reels, talk over new ones, and plan outlines and scripts for future films.

Maybe it will be only a matter of talk and paper planning, but it will prove a worthwhile relaxation, and one which will help your future picture-making. Think in terms of camera-angles and lighting, of cuts and transitions. Above all, think in terms of plain, direct acting and visual story-telling not wholly dependent upon titled speeches or recorded words.

Compare notes with your group; get up group parties to see the good movies at your local theatre, so that you can analyze the technique together, and in the inevitable post-party discussion, try to reduce it to terms of workable home-movie practice. And as you grow more actively conscious of the how and why of continuity and visual story-telling, you'll find you've gained something which will make your own movies better in that longed-for day when, after Victory, we can get back to our normal activities once more! END.

A Job for Your Projector

(Continued from Page 137)

say, in an awed tone—"My God! An American girl!"

When we put on our shows, how they ate up any little bit of entertainment we could give them—! They were so starved for it, our jokes didn't need to be funny—our singing could be pretty bad (it was, too!)—our dancing miles below the Fred Astaire class—but they loved it just the same. You only had

to open your mouth and they'd laugh and applaud as enthusiastically as though you were giving them the greatest show on earth. And if you could work some "home town" color into your lines—you know, like "On our way from Hollywood we had to stop over in Scranton—you'd bring the house down. There was sure to be a boy from Scranton, or Okmulgee, or Hattiesburg in the crowd, and you could bet he'd yell out, "Gee, that's my home town! How is the old burg, anyway?" and feel a lot better for days because he'd seen somebody who had just been through his home town.

I'll let you imagine how they'd go for really good humor dished out from a sound-track by Jack Oakie, or Laurel and Hardy, or Bob Hope or Red Skelton . . .!

As I've said, the films—up-to-date and in 16mm.—are ready. But they aren't much good without projectors. And you know what it's like getting projectors—especially 16mm. sound projectors—these days. The Army and Navy have been buying all they could get their hands on, for training purposes here and (under the Army's Special Service Division) for entertainment abroad. But they've nowhere near enough to take care of all those half-forgotten big and little posts that stretch from Iceland through Africa, Iran and India to the Solomons and Alaska.

So the Editor of this magazine and I have asked General F. H. Osborn, the head of the Army's Special Service Division, if America's amateurs and 16mm. professionals could have the privilege of giving or loaning their projectors for this overseas service. He told us that "The Special Service Division will gladly accept as gifts 16mm. sound projectors if they are not older than 1938 models . . . Projectors donated will be shipped to troops overseas. Shipping instructions may be secured through the Special Service Division of the Army Supply Force, Distribution Branch."

This means that if you've got a 16mm. sound-on-film projector—any make—there's a job for it overseas that's just as vital to the welfare of our boys as packing a gun. I know there are a lot of amateurs who have sound projectors, and plenty of 16mm. professionals who have two or three machines, of which they could spare at least one. I hope you'll see your way clear to sending these machines to the boys overseas, where they'll do such a very big job helping our own boys carry on with the happy, fighting spirit we know they've got.

Sure—I know 16mm. sound projectors represent an investment of several hundred dollars; I've got one myself, and a good one. But ask yourself just how much your projector will be worth to you if the morale of our boys at the front cracks, and the Nazis and Japs win . . .! How much is it worth to you beside the knowledge that someone you know—your son, your husband, the kid next door—has gotten down

into that deadly rut of feeling nothing matters . . . just because he's lost touch with the realities of being a normal, American boy . . . because he's had so little recreation he just turns into an almost mindless machine that plods on and works and fights, with no outlet for the humor and relaxing happiness of a free man—?

I know what the answer is as far as I'm concerned. My projector—it's brand-new; I got it just before I left for Africa—is going abroad. I've packed it up and sent it on its way with only one string attached—that it *must not stay in this country* . . . that it *must* go abroad, to the places where our boys are fighting to keep our country one in which we're free to own projectors if we wish, to shoot movies if we wish, and to live a life full of freedom and happiness. I hope mine is only the first of hundreds to go where our boys need them so badly! **END.**

Academy Awards

(Continued from Page 131)

tion combine so vividly. Yet on analysis you'll notice that much of the color is actually subdued, toned down either in the actual set or costume, or toned down by Shamroy's careful use of effect-lightings, so that while you get an overall impression of strong color, you get it actually without being chromatically surfeited. This reviewer particularly liked Shamroy's use of vigorous effect-lightings, even though some of them seemed skating a bit close to the danger-line of extreme low-key lighting. This treatment, too, made possible the use of many very striking portrait-lightings in the closer shots of the principals. Indeed, your strongest after-recollection of 'The Black Swan' is of some of the effect-lighted close-ups of Tyrone Power and Maureen O'Hara."

Cinematographer Shamroy says, "It is an honor I deeply appreciate to have been associated with two productions—black-and-white and color—in one year which gave me such opportunities that my fellow cinematographers twice felt my work worthy of nomination for our highest honors, and for selection as the year's best example of natural-color cinematography. The way the choice fell between my two pictures is, I think, extremely significant of the part natural-color cinematography, whether by Technicolor or by any other process, is coming to play in our work. In black-and-white cinematography, we have reached a saturation-point in artistic and technical achievement; most of us have done everything that can be done with light and lenses in black-and-white. We must constantly rack our brains to find something really original in monochrome camerawork . . . and we usually fail.

"But color adds a new dimension to our scope, whether for realism, for pictorial effect, or for dramatic strength. The simple fact of color adds something not even the best of us can hope to

achieve in black-and-white, and we have not even begun to scratch the surface of the possibilities of this new and infinitely more expressive medium; we won't for a very long time. Today, most of our studios seem to consider color as chiefly an added attraction for musicals: but my experience has convinced me it can be even more valuable to almost every other type of production—not only 'action' pictures, but the heavily dramatic stories we have always done in monochrome. I am eagerly looking forward to the day when I may have a chance to explore the creatively photodramatic possibilities of color for a dramatic picture. We've seen many great cinematographic achievements in monochrome in pictures of this type: but I am sure that once our greatest camera-artists have the opportunity to exercise their creative skill similarly in color, we will see them eclipse everything they—or the industry—have ever achieved before. It's significant that most of our "production" cinematographers have, like me, started their first color productions more or less under protest—and that all of us, once we've found out what an expressive medium color is, hate to go back from color to monochrome again.

"In closing, I want to extend my deepest appreciation to the men who composed my crew on 'The Black Swan'—to my Operative Cinematographer, Bud Mautino; to the two Technicolor Technicians, Capt. Clifford Shirpser, now with the Army Air Force in India, and Paul Hill; to Assistant Cameraman Al Lebovitz, now Technical Sergeant Lebovitz of the U. S. Marine Corps, and to my Gaffer, Clarence Punter. Their un-failing collaboration played a very great part, indeed, in making 'The Black Swan' a picture our fellow-professionals could

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single out for the honor they gave it."

The other nominations in the color division were "Arabian Nights," (Universal), photograph by Milton Krasner, A.S.C., with Capt. William V. Skall and W. Howard Greene as his Technicolor associates; "Captains of the Clouds," (Warner Bros.), photographed by Sol Polito, A.S.C., with Capt. Wilfrid Cline, A.S.C., as Technicolor associate, Major Elmer G. Dyer, A.S.C., Charles A. Marshall, A.S.C., and Lt. Winton Hoch, A.S.C., in charge of aerial photography, and special-effects photography by Byron Haskin, A.S.C., and Rex Wimpy, A.S.C.; "Jungle Book," (Korda-United Artists), for which the Academy slighted director of photography Lee Garmes, A.S.C., and named only his Technicolor associate, W. Howard Greene, A.S.C.; "Reap the Wild Wind," (Paramount), photographed by Victor Milner, A.S.C., with Capt. William V. Skall, A.S.C., as Technicolor associate, with special-effects photography by Gordon Jennings, A.S.C., and Farciot

Edouart, A.S.C., and underwater camerawork by Lt. Dewey Wrigley, A.S.C.; and "To the Shores of Tripoli," (20th Century-Fox), photographed by Edward Cronjager, A.S.C., with Capt. William Skall as Technicolor associate. It is an unusual and highly fitting climax to Capt. Skall's many years of specialization in Technicolor camerawork that practically all of his final year's work before going on active service with the U. S. Army Air Force should comprise three out of the six color productions nominated for the industry's highest photographic honor.

When we reviewed "Reap the Wild Wind," a year ago, we said of the special-effects work of Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C., "When next year's Academy Awards are passed out, we confidently expect to see Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C., step forward to claim the one for special photographic effects. 'Reap the Wild Wind' would be bereft of both its wind and much of its wildness if you removed the innumerable scenes in which these two artists have brought sea and storm into the confines of a studio tank-stage. Their work, with the possible exception of one or two miniatures which could well have been retaken, is a convincing tribute to the skill of modern special-effects and transparency technicians." This year's richly-deserved win makes it twice in a row for these redoubtable specialists in camera trickery—another tradition-breaking "first," if our memory serves aright.

Four awards for scientific or technical achievement were made this year, all of them of Class II, which carries with it a plaque, though in at least one instance the achievement so recognized would seem so basic as to merit the Class I or statuette award. It is extremely unfortunate that the committees in charge of making these awards tend traditionally to be ultra-conservative—perhaps because final decisions often hinge on debates between cinematographers, sound engineers and laboratory technicians, neither of which may be expected to be fully conversant with what is and what is not genuinely important in the others' fields. The reports on these awards should certainly be more specific, as well, giving more detailed in-

formation on the device or process being honored, and wasting less space in glorifying the Academy's very questionable interest in technical and scientific advances.

Unquestionably the most far-reaching of the technical advances honored this year was in the development, by Daniel B. Clark, A.S.C., and his associates at the 20th Century-Fox Camera Department, of a radically new system of calibrating photographic lenses by photo-electrically-metered measurements of the amount of light actually transmitted. If applied on a national scale, it should prove a revolutionary advance, not alone in studio cinematography, but in all phases of both professional and amateur motion picture and still photography.

The plaque awarded to Carroll Clark, F. Thomas Thompson and the RKO Art and Miniature Departments for the design and construction of a moving cloud and horizon machine extends recognition to a development of particular importance in these days where large-scale marine and air scenes must of necessity be filmed on a studio stage, or not at all. The same is true of the award made to Robert Henderson and the Paramount Studio Engineering and Transparency Departments for the design and construction of adjustable light bridges and screen frames for transparency process photography. The award made to Daniel J. Bloomberg and the Republic Studio—Republic's first Academy recognition—for a device for marking action negative for pre-selection purposes is well-merited recognition of a device and method which results in a worthwhile saving of film and laboratory expenditure, and an improvement in the ultimate product.

Other awards in the technical field include that for 1942's best sound recording, given to Col. Nathan Levinson and the Warner Bros. Sound Department for their recording of "Yankee Doodle Dandy;" the two statuettes for the best achievements in both black-and-white and color art-direction, very

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deservedly won by the 20th Century-Fox team of Richard Day and Joseph Wright, and the award for the best film-editing, given to Daniel Mandell for editing the Goldwyn-RKO production "Pride of the Yankees."

An international note was added in the bestowal of four Special Awards (certificates) for achievement in documentary film production to the makers of documentaries from the U. S. Navy, Australia, the U. S. S. R., and the Special Service Division of the U. S. Army. The pictures so honored were, respectively, "The Battle of Midway," photographed in 16mm. Kodachrome by Commander John Ford, Lt. Gregg Toland, A.S.C., Photographer Sterling Barnett, and Photographer (2cl.) J. P. MacKenzie of the U. S. Navy, and released in 35mm. Technicolor; "Kokoda Front Line," filmed by Damien Parer for the Australian News Information Bureau; "Moscow Strikes Back," photographed by ace cameraman I. Beliakov, Feodor Bunimovich, A. Krilov, B. Makeseyev, V. Soloviev, S. Schekutev, G. Burbov, P. Kasatkin, A. Lebedev, B. Nebilitsky, N. Schneiderov, S. Scher, A. Elbert and R. Carmen of the Central News Studios of Moscow, U. S. S. R.; and "Prelude to War," compiled by the Special Service Division of the U. S. Army.

This year's Academy banquet was history-making in another sense, too. Climaxing fifteen years of increasingly ill-managed functions, it not only reduced the industry's major cultural event to the level of small-time politics, but affronted the key men upon whom the industry's real success rests—the directors of photography, the recording engineers, the production designers and editors—by railroading their portion of the Awards program through with far less consideration of the men themselves, their achievements, or the fundamental significance of their contributions to production than that given the makers of short-subjects, the composers of popular songs, or the set-dressers. If the mismanagement of this year's affair brought rumbles of protest from even the biggest figures of the industry, it fanned to a blaze the resentment of the technical community at being given so rude a brush-off. Unless this breach is healed by sincere and positive action—not words—there is little doubt but that regardless of whether or not this year's Academy Awards banquet will be

the last one, as is freely rumored, it will be the last in so far as Hollywood's technical community is concerned, and the cinematographers and other technical people of the industry will hereafter bestow their own awards in their own way. END.

"Horse Operas"

(Continued from Page 137)

actually climbing, simply slid down, while the camera photographed the scene upside down. In editing, the scene was turned end for end. As the result, the action was reversed and our hero climbed up the rope in typical "Fairbanks" fashion. It's an old trick—but it works!

An interior sequence was to be a stage-line office where the "Rider" had to escape by diving through a window. Made-to-order was the living-room and bedroom of Director McMahon. Between these two rooms was a window. The camera shot from the bedroom through the window (framed in the foreground) into the living room, which was to be the stage office. After being discovered rifling the office, the "Rider" ran from the far end of the room and dove head-first through the window—onto the bed in the bedroom! The bed of course was just out of scene.

Leaping boldly onto a riding-academy horse is practically impossible, not because the rider wasn't capable, but that the horse (although nags would be more appropriate) wouldn't stand for it. As the masked and caped figure charged toward him to mount, the horse decided to move—fast. It soon became apparent the dashing outlaw wouldn't be able to mount in the necessary western manner. And as riding academy horses cost one dollar an hour, some way out of the problem had to be thought of, *pronto*, in order to save Adventure Pictures from bankruptcy. It became necessary to throw a saddle over a wooden saw-horse, framing just the cantle, seat, and horn in the foreground. Now the bandit could jump into the saddle in a manner as spectacular as desired by the director. Immediately upon entering the saddle, the film-editor cut to a long-shot of the "Rider" actually on a horse and just spurring forward. It's all in the editing!

The boys view as many "hoss operas" as they can afford and consider "The

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Westerner" with Gary Cooper the best Hollywood has yet produced. The group is still trying to duplicate Gregg Tolland's excellent "dolly-shots" and especially the fine directing. They think Gary Cooper is excellent as a westerner. They even tolerated the heroine—"because she could act and her presence in the film was logical." The boys are also George O'Brien fans and have seen almost every film he's been in, including the silents revived at the Museum of Modern Arts.

A "hoss opera" without trick riding wouldn't be right. For "Pals of the Plains," a short action western, a group of young boys ranging in age from fourteen to sixteen change from one galloping horse to another, fall off, and rear their steeds. The backyard, where their horses are kept in barns, has recently been remodeled into a western town. "Sheriff's Office," "Hotel," and "Livery Stable" signs; wooden awnings, hitchrails and wooden sidewalks have been added to give a frontier effect.

"Jungle Jim," the well-known newspaper "comic" strip is one of the group's favorite adventure tales. Studying the comic strips one day they noticed that Alex Raymond's drawings of Africa resembled the woods around a small brook nearby. Director McMahon promptly wrote a screen-play, casting himself as Jungle Jim.

The screen-play was written in best Hollywood tradition, for, when he had finished, little of the original story remained! This can be understood because there were many properties and sets that could not be reproduced by Adventure Pictures meager budget. To create more thrills and suspense, shots of lions from a film-library were intercut with their own scenes. It is surprising how these stock-shots can be trimmed and inserted to fit the action so well.

Another feature of this group that Hollywood might study to advantage is a cooperative spirit and financial control which makes for complete elimination of arguments about casting, directing or any of the hundreds of jealousies and "studio politics" which tear asunder friendships in the West Coast Cinema Capitol. Early in the organization of Adventure Pictures it was decided that whoever finances a picture can play the hero.

Otherwise, many of the things that beset the industry in Hollywood are en-

countered by the New Jersey boys. For instance, "The Black Rider" went through a transformation not unlike a story-conference in Hollywood where a South Seas romance may emerge as a northern thriller after a dozen continuity writers thrash out the original script.

The "Rider" was written and financed by the "hero" of the previous picture who wanted to be the "villain" in the new one. But it was decided he was not the "dastardly menace" type so he suggested wearing a mask until his face could be revealed in one carefully made closeup. As the plot developed, it became a "guess who" mystery and it was then decided that the outlaw should wear a long, black cape as well as the mask. But since he was rather a stout fellow, the cape did not fully conceal his identity and it was decided to change the villain into the comedian and choose a slimmer fellow for the dashing young outlaw.

Music plays an important part in the exhibiting end of the movie business and it is only natural that Adventure Pictures should have its own musical director. It is his job to select the music that is to accompany the picture. For synchronized sound-effects, a home-made dual-turntable and amplifier is used. And the music is chosen with a sensitiveness to ear-appeal that might well be emulated by Hollywood. The group, as well as the musical director, are all listeners to symphonic music and have found that many of Tschaikowsky's orchestral works provide the aural excitement which must match the thrills on the screen. In scoring "The Black Rider," a heavy thematic-type music was desired. It was finally agreed that Franz Liszt's "Faust Symphony" was the most appropriate that could be found on records. This symphony, with its different variations, is carried through the entire film wherever the "Rider" appears.

The National Broadcasting Company featured the boys' experiences over their popular hobby program, "The Bright Idea" Club. Columbia Broadcasting System's television studios, after reviewing dozens of amateur motion pictures, transmitted "The Black Rider." This was an honor for the boys as their's was understood to be the first amateur film to be televised. On this same program the group was interviewed by Gilbert Seldes. Mr. Seldes, often referred to as Hollywood's "best pal," thrilled the boys when he told them "'The Black Rider' is the best western since 'The Great Train Robbery' of 1903."

Their films are now being featured on programs at such places as the Y.M.C.A., the Boys' Club, and Chambers of Commerce where they bring roaring cheers for the hero and hisses for the villain. END.

Editor's Finder

(Continued from Page 133)

them when it needed them, and forget them in between.

But those days are going fast. At a

conservative estimate, more than one-third of the industry's trained photographic talent has been removed from the studios by draft and enlistment. More are following them. Others are making their way into the photographic departments of the aircraft industry and other defense plants. Good assistants and operatives are growing as scarce as hen's teeth—and a good deal more valuable. A few foresighted studios are even placing these men under contract, so they'll be available when needed.

But they're forgetting the "fill-in" directors of photography (and their crews) who have always been so handy when production inched momentarily above the bare minimum which their usual contract camera staffs could handle.

And unless all the signs are wholly wrong, before the year is out the once abundant supply of these "fill-in" men is going to be gone—and with them many more of the contract "regulars." They'll be in uniform, making movies for Uncle Sam—and the studios will be begging for cameramen—*any* cameraman—to help them keep up the production which the Washington powers-that-be consider so essential to morale and international propaganda. Unfortunately, there won't be anyone to answer those pleas. And we wonder what reply those camera executives who are now so proud of running an economical department will give their bosses when the bosses ask them why they didn't see what was coming and put a few extra cameramen under contract while they could get them!

Consistency

(Continued from Page 129)

brought forth a considerable variety of objections which can be summed up by the statement that "it can't be done." So we were forced to devise our own equipment and methods for doing it.

The actual calibrating set-up is sim-

ple enough. The lens to be calibrated, in its standard mount, is screwed to one end of a light-tight-tube, at the opposite end of which is mounted the photoelectric cell, and of course with the lens' image accurately focused on the photocell. In front of the lens is a suitable light-source, mounted behind a ground glass diffusing panel, and wired through an accurate voltage control and meter. The photocell is in turn wired to an ultrasensitive microammeter.

To calibrate a lens, the light-source is brought to a known intensity by means of its voltage control, and checked through a carefully preserved master lens. Then the lens to be calibrated is substituted for the master lens, and the diaphragm manipulated to produce on the photocell-controlled meter a reading corresponding to that produced by a setting of $f:3.2$ on the master lens. This point is calibrated as $f:3.2$. Thereafter we work both up and down in steps corresponding to the mathematically correct transmission-values of the usual stops above and below this median value. The stops are of course determined by their actually measured transmission.

By this method, every lens can be calibrated to f -stop values which, stop for stop, are absolutely identical in transmission, and hence in exposure-producing values, regardless of the design or construction of the lens. In the same way, coated and un-coated lenses may be calibrated so that both will give identical transmission values at the same stops rather than leaving the coated objective a half-stop or even a full stop faster at a given aperture than the uncoated one.

Using a master lens in adjusting the calibrating bench is an important safeguard. The entire system is based on accurate measurement of the actual transmission of the lens being calibrated. The incandescent lamp used as a light-source in these measurements can and does deteriorate, and its globe blacken, to a point where merely applying a known voltage to it is no guarantee that it is emitting the intended intensity of light. Introducing a master lens of known transmission into the system, and then bringing the light-source voltage to the point which gives a predetermined reading through the photocell-meter system eliminates this variable, and assures that all lenses will be calibrated to a known and accurate standard.

Commencing our calibrating procedure at a median point, as represented by $f:3.2$, is an absolute essential to accuracy in this system of calibration. In our earliest tests, we discovered that the mere fact that a lens is rated at $f:2.3$ or $f:2.5$ according to the conventional system does not by any means indicate that its light-transmitting power is actually so high. Distressingly often we found that lenses conventionally rated by their makers at $f:2.5$ and better really transmitted no more light than an actual $f:3.2$ value.

Starting the calibrating procedure this way, in the middle range, enables us to give each lens a truly accurate maximum-aperture calibration, and also to keep all calibrations from maximum to minimum in their correct and genuinely accurate relationship. When other organizations, experimenting with this system of calibration, have attempted to reverse this procedure and work downward from maximum aperture, the results have almost invariably proven inaccurate, and the ratios between stops misleading.

A number of authorities have been kind enough to state that in their estimation this system of lens-calibration is one of the extremely few basic advances in photography in many years, and to suggest that it should be adopted as at least a national standard, and

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I am informed that steps to this end are already being taken. Quite apart from my own participation in this development, I sincerely hope that this may be the case, for my own experience as a practicing cinematographer, as well as head of a major studio's camera department, has furnished abundant proof of the importance of anything which will give the man at the camera absolute reliance on the consistent accuracy of the stop calibrations of all of his lenses. Looking forward to post-war photography, such a standard would seem even more valuable as lenses of newly-developed optical glasses with radically increased light-transmitting power, and with improved types of coating, etc., come into use for both professional and amateur still and motion picture photography. Consistently correct exposure is the foundation of success in any type of photography, and this cannot be fully achieved unless the lens calibrations by which exposure is controlled give a true and accurate representation of the amount of light actually reaching the film to make the exposure.

Experience has proven the advantages of this system of calibration. Our cinematographers have been turning out more consistently uniform results under all conditions, in the studio and on location, than ever before, and maintaining this consistency regardless of the lenses used, to a degree I can safely say is unparalleled in photographic history. Application for a U. S. Patent upon the equipment and methods used in this system of calibration has been made and is proceeding favorably, while at least one of Hollywood's major studios

and several of the motion picture units of the U. S. Armed Services have arranged to employ the method in calibrating their lenses.

But as I pointed out at the beginning, this system of lens-calibration is only one, though unquestionably the most important, of three closely inter-related steps toward assuring consistently uniform phototechnical quality. It could not develop its full value alone, without the combination of a consistently accurate system of metering illumination on the set, or the consistently accurate time-and-temperature processing the resultant negative receives in the laboratory. Neither could they develop their full worth without the consistency in exposure made possible by this system of uniformly accurate lens-calibration. Working together, these three developments have enabled 20th Century-Fox cinematographers to maintain an enviable record of phototechnical consistency, whether measured by the records of negative densities or printing values of any one picture, or of the studio's overall production.

None of these aids of phototechnical consistency can, of course, take the place of individual artistic skill on the part of the cinematographers involved. But with them, the minds of the cinematographers are left that much more free of routine, mechanical problems, and more able to concentrate on the creatively artistic aspects of their work. That the cinematographers in my department have utilized these aids to that end is, I think, thoroughly attested by the record they have made in this year's Academy Awards, when for the first time in

history four of the ten films nominated for the Award for the year's best black-and-white cinematography came from one studio! END..

Contrast Control

(Continued from Page 127)

sirable to study the sources of illumination which may be arranged at any point in a 360° circle around the subject.

The 360° circle should be considered as being divided into six sectors, as shown in Fig. 6. The meter with hood is then held at the position of the subject S. Readings are then taken in sectors A, B, C, D, E, and F, in turn, by means of rotating the meter-head. A record is made of the readings.

This record may then be used at a later date as a prime aid in setting up a similar lighting arrangement.

To get back to the main purpose of the device, however, which is illumination contrast measurement and control, it is interesting to consider how useful it would be in connection with natural-color photography.

The limitations, with respect to contrast, of natural-color photography are quite well known. If the illumination contrast range is too great, the result is quite likely to be either blocked-up shadows, or washed-out highlights, or both. The Norwood meter with contrast hood will enable the photographer to keep safely within the natural latitude of the film.

In addition, it will also allow the maintenance, to a fine degree, of any pre-selected contrast ratio throughout the picture. This is quite desirable because changes in illumination-contrast are very noticeable in natural-color work, and are quite disturbing.

The contrast hood has been so designed that it may be attached to the Norwood meter very easily and quickly. It may be removed just as easily and quickly. Thus the value of the meter as an exposure-meter, with hood removed, remains unimpaired. With the hood added it turns into an illumination-contrast meter. This, in effect, places two valuable meters at the disposal of the cinematographer. An exposure-meter that will keep exposures dependably uniform, and in addition an illumination-contrast meter that will allow the pre-selection and then the maintenance of any chosen contrast ratio.

When a layman sees a picture in a theatre he usually does not consciously recognize the existence or lack of the smoothness provided by uniformly-exposed negatives and uniformly-balanced illumination of all scenes. However, if these things are lacking he is sure to have a feeling that something about the picture was not as good as it should be.

The experienced cinematographer is the one who appreciates the value of quality in these matters, and will best visualize and understand how the above-described meters will assist him to secure such desirable quality. END.

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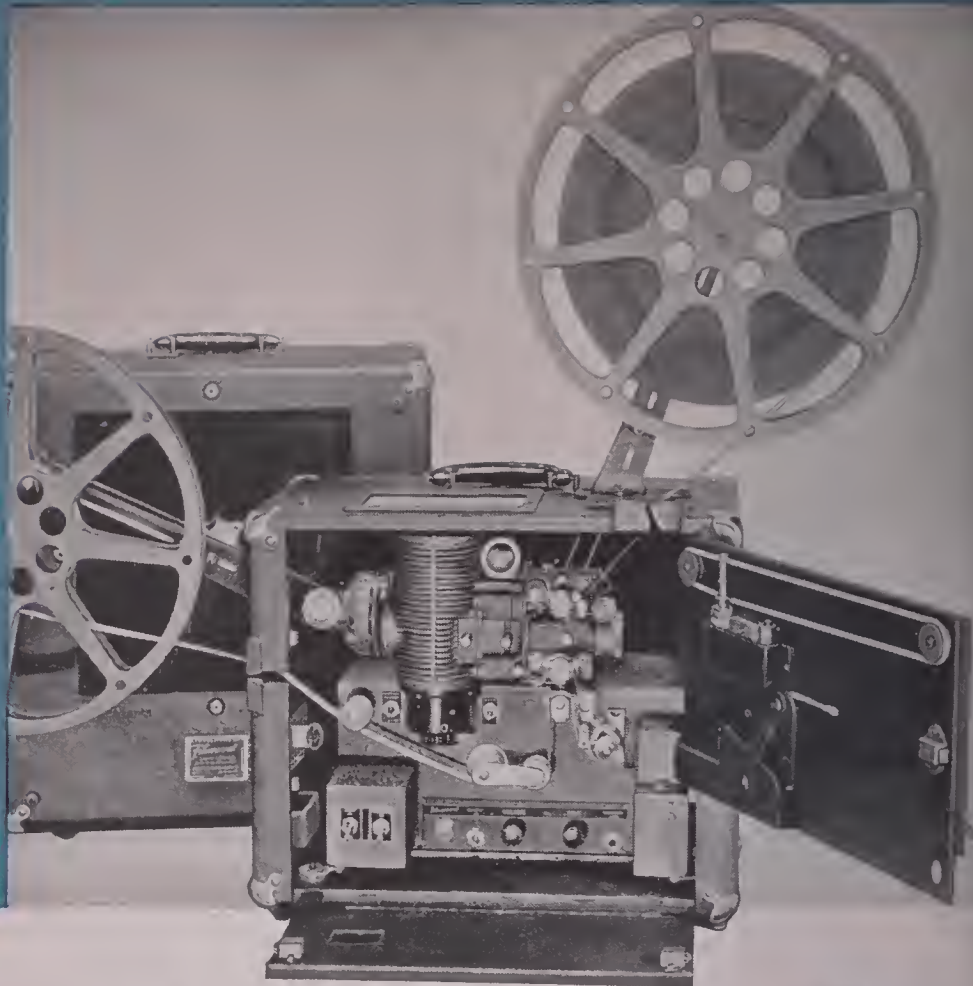
For test flight, experimental models have been made from the first photographic copy and flown with fragments of the mechanical drawings showing on the airplane parts. Normally, pattern plates—templates—are made from the photographic pattern; and from then on parts are duplicated mechanically.

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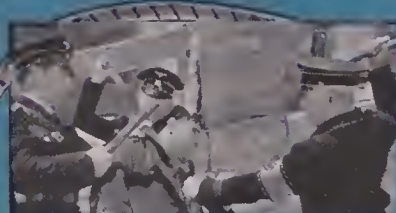
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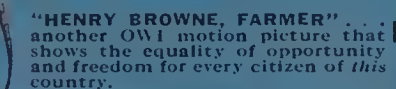
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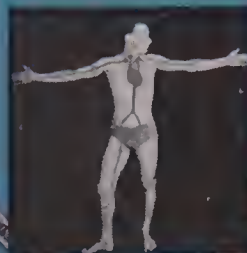
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THE KEEN-EYED PHYSICIST pictured here is measuring the candle-power of light bulbs. The purpose of his work is to standardize the lamps that are used for sensitometric testing of film coatings.

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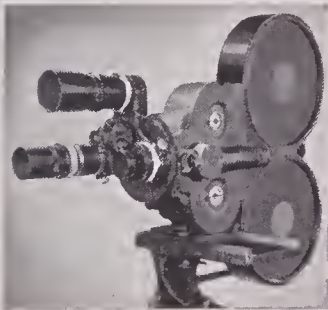
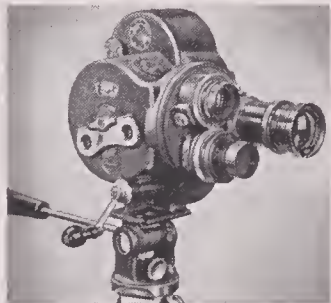
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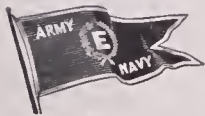


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Pathe Cameraman, Howard Winner with his Eyemo "somewhere in Africa." At right is Capt. John D. LeVien, who distinguished himself in Algeria by leading the 90 troops who captured the Italian Armistice Commission.

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

MAY, 1943

NO. 5

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The Front Cover

This month's cover shows a sergeant-cinematographer of the British Army Film and Photo Unit in action in the Western Desert of Africa filming a scene for "Desert Victory." Note the cameraman's companion with tommy-gun at the ready, and shell-burst in near background. We regret that military regulations prohibit identifying either the cinematographer shown or the still-man who made the picture.



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FRAME ENLARGEMENTS FROM "DESERT VICTORY." Top row, left, opening barrage at El Alamein, filmed by flare from the cannon's mouth. Right: Sappers clearing a path through the mine-field before British advance. Second row, left: "Tommies" drop as shell bursts in background. Right: Infantry advance while their comrade receives first-aid in foreground. Third row, left: Infantrymen take cover behind a tank while a shell bursts too close for comfort; right: accompanying the tanks into action. Bottom row, left: Riflemen fire across a still-burning lorry. Right: dive-bombing a road convoy; note foreground "frame" of helmets of riders in truck in which cameraman rode.



Filming "Desert Victory"

By LT.-COL. DAVID MacDONALD, HON. A.S.C.

Officer Commanding, British Army Film and Photo Unit

As Told to WM. STULL, A.S.C.

THE story behind the making of "Desert Victory" really began almost exactly three years ago, in the spring of 1940. At that time the then War Minister and the Minister of Information, Sir Brendan Bracken, were persuaded by various figures in the British Film Industry that a well-organized motion picture and photographic reportage unit would be of value both to the Army and to the Nation's information service.

In due course the nucleus of such a unit was formed, and I was commissioned and placed in charge of it. After getting some of the basic organizational work under way, I crossed to France to discuss practical arrangements with the commanders of the B.E.F. and with the officers in charge of the French military motion picture services. By this time it was the summer of 1940, and then, as you know, things began to happen very suddenly. Those of us who were lucky found ourselves back in Britain, with the job of re-equipping and rebuilding an Army on our hands, and precious little to do it with.

That was the point where the building of the A.F.P.U. really began. We faced a problem which I believe rather parallels that which has been faced by the U. S. Military and Naval photographic units since Pearl Harbor. Like you, we in Britain had the foundation of an active and capable professional motion picture industry upon which to draw for key personnel; we had cameramen, sound recording engineers, cutters, directors, writers, laboratory-men, and both studio and newspaper still-men.

But one thing our experience in the Battle of France had taught us: for front-line service, cameramen, no less than soldiers, must be young—and fit—in order to keep up with their fast-mov-

ing subjects. And while I fancy our British studio technicians average somewhat younger than Hollywood's, because our industry there is younger, by and large they still averaged a good bit over the age when they would be most capable of going into the field and keeping up with combat units through day after day of grueling fighting. Besides, in the many kinds of educational and entertainment films to be made at home in the field and on the studio, they had quite a job to do, too.

So, very much as I gather some of the American military motion picture units are doing, we had to go afield—beyond the ranks of the recognized professional cinema industry—for our combat camera crews. Starting with a nucleus of key professionals—cinematographers like Capt. Osmond Borradaile and H. W. Rignold, whose experiences have already been related in *THE AMERICAN CINEMATOGRAPHER*, sound engineers, unit managers, assistant directors, and the like—to provide the basic training and organizational staff, we recruited our actual combat camera personnel from other, younger groups both within and outside of the professional industry.

Some of our cameramen had been assistants or film-loaders in the studios. Others had had a bit of picture-making experience as assistant directors, laboratory technicians, prop-men, and the like in the studios. Others were recruited from among the amateurs—very good chaps, some of these, in both still and movie work—and we got some excellent still photographers from among the newspaper still-men from both the London and provincial papers. Some of these men had had quite a bit of photographic experience before joining the Service;



ACTION IN THE DESERT! A remarkable series of frame enlargements from "Desert Victory." Above, left, a shell bursts close to an anti-tank gun. Right: gun crew already feeding their piece, while wounded comrade is led to side. Below: The gun in action, while wounded man (foreground) receives first aid.

others had never before had a camera in their hands.

In this connection, I'd like to make it clear that none of the men in my unit were impressed or, as you say in America, drafted. Every one of the officers and men in the unit were volunteers. This fact justified itself very excellently by the courage and enthusiasm the men showed in doing their work—often at extraordinary personal risk—once they got under fire.

In this organizing period, during the Battle of Britain and the Commando raids on Norway and other points, our chaps got a bit of experience working under fire. But it was not until last year, when the entire unit was sent out to North Africa and attached to General Alexander's Middle East Command that we really got shaken down into a cohesive military combat camera unit. Then our chaps learned to handle their cameras under actual battle conditions, and the commissioned personnel learned—also under actual field-service conditions—to cope with the problems of organization and supply which are so essential not only in getting films and photos of combat, but in getting them back in the shortest possible time. These latter activities do not have the glamor of front-line combat camerawork, but they

(Continued on Page 186)



AMERICAN AND RUSSIAN CINEMATOGRAPHERS MEET. Front row, left to right, Soviet ace cameramen Nicolai Litkin, Ruvim Khalushakov, Vladick Mikosha, and Vassili Soloviev. Standing, in rear; Maj. Elmer Dyer, A.S.C., U.S.A.A.F.; Lt. Harold Wenstrom, A.S.C., U.S.N.R.; Al Brick, newsreel ace who "covered" Pearl Harbor; Lt. A. L. Gilks, A.S.C., U.S.N.R.; Lt. Arthur Arling, A.S.C., U.S.N.R.; Lt. Ray Flinsky, U.S.A.A.F.; Capt. Gilbert Warrenton, A.S.C., U.S.A.F.; Lt. Joe August, A.S.C., U.S.N.R.; Sgt. Peverell Marley, A.S.C., U.S.A.A.F. Photo by Roman Freulich.

Hollywood Greeted Four Soviet War Camera-Aces

By WILLIAM STULL, A.S.C.

THE unusual vigor and reality of the documentary films which have lately come out of Soviet Russia is a bit more clear to several score of Hollywood's leading cinematographers who recently had the privilege of meeting and entertaining four of Russia's wartime camera-aces. These four Soviet cinematographers—Nicolai Litkin, Vladick Mikosha, Ruvim Khalushakov, and Vassili Soloviev—had all been serving continuously on the Soviet-Nazi fronts since the Germans invaded their country nearly two years ago. They had participated in the making of such notable war documentaries as "Moscow Strikes Back" and "One Day of War." They had been decorated for their front-line achievements, and three of them had received the Soviet's highest cultural award—the Stalin Prize—for their achievements.

Their visit to Hollywood was in itself in the nature of a reward for their work at the front, though not an easy one, for they were on a round-the-world trip making a cinematic record of the convoys which fight their way from England and America to Russia bearing supplies for the armies which are battling so tenaciously against the Wehrmacht. On this assignment, all four were attached to the Soviet Merchant Marine, with rank equivalent to that of Lieutenant Commander, and when not photo-

graphing, served as officers of the ships on which they sailed.

Like so many of Russia's artists and engineers, these men were young—three of the four in their early thirties, and the fourth but a few years older—and like most Soviet film people, they had entered the industry through the four-year course at their Government's Central Cinema Institute, where cinematographers, sound-engineers, film-editors, and other technicians, as well as directors, writers and players, are trained for their careers as are doctors or lawyers in this country.

Though the barrier of language made it difficult for the cinematographers of the two countries to communicate readily with each other at the banquet given jointly by the governing boards of the A.S.C. and of Cameramen's Local 659, the Hollywood group soon found that in matters of equipment they were all on familiarly common ground. Most of the Russians' front-line camerawork, for example, was done with Russian-made versions of the familiar Eyemo and DeVry hand-cameras, though DeBries were more common in studio use. Lens-equipment was largely the familiar Cooke objectives, and though some Soviet-made film was used, a great deal of work was done on the familiar Eastman Super-X.

Since for so many years Russia, in solving her vast educational problem,

has leaned heavily upon the documentary film, it is only natural that these warrior camera-aces should all have specialized largely in making documentaries. Cinematographer Khalushakov, for example, related that for twelve years after his graduation from the Cinema Institute, he had specialized in filming documentaries. Previous to his wartime achievements, he considers his most notable achievement the filming of "Sodov," a film showing the work of the Soviet ice-breakers near the North Pole.

The conditions under which this film was made were complicated not only by the fact that many of the scenes were made with the aid of flares during the three-months-long Polar night, but because he had constantly to work at temperatures of 50 degrees below zero. The production, however, was successful and won him a decoration from his government.

In his wartime work, Khalushakov has specialized to a considerable extent in filming the work of the tank units. This work, he states emphatically, is particularly difficult for the cameraman. If one works inside a tank—as is necessary if he is to keep pace with the battle—there are smoke and vibration to contend with, and also an extremely restricted field of view. In the scenes he made for "One Day of War," he made his shots through the narrow vision-slit of the tank; the tank-commander stopping, whenever possible, to give him as nearly vibrationless a shot as possible, and then proceeding with his primary purpose of beating and destroying the enemy armor and other troops.

Dangerous—? But that of course, he says. The life of any good front-line cameraman is risked at any moment, for he has to be where the most spectacular shots are to be had. That, in turn, means that the men who fight with cameras must be in the front lines, or even ahead of them. On one occasion he and the unit with which he was working got so far ahead of the lines that they were completely surrounded by Nazis, with many Stukas and Messerschmitts bombing and strafing them. It took twenty-five days to fight their way out of that encirclement. But, he adds with a ready grin, in doing it they reduced the strength of the German Army somewhat—and brought out spectacular photographic evidence of Soviet courage!

Cinematographer Mikosha has specialized largely in camerawork with the Russian Navy. Since the outbreak of the war he has been attached to all types of naval vessels, from cruisers to destroyers, PT boats and submarines,

(Continued on Page 193)



Left, Executive Vice-President Fred W. Jackman; right, President Leonard Smith.



L EONARD SMITH was elected President of the American Society of Cinematographers at the Society's annual election last month. He succeeds Fred W. Jackman who, after two successive terms as President, now assumes the important post of Executive Vice-President and Business Manager of the A.S.C. Arthur Edeson and Arthur Miller were elected Second and Third Vice-Presidents, respectively. Byron Haskin was re-elected Secretary-Treasurer, and George J. Folsey, Sergeant-at-Arms.

The Board of Governors for this, the Society's twenty-fifth year, consists of President Smith, Vice-Presidents Jackman, Edeson and Miller, Treasurer Haskin, Sergeant-at-Arms Folsey, and John Arnold, John W. Boyle, Joe MacDonald, Sol Polito, Ray Rennahan, Charles Schoenbaum, Leon Shamroy, Ralph Staub and Joe Walker.

The new President is a veteran of the industry. Making his start with the Vitagraph studios in the pioneer days of the movies, more than 30 years ago, he has been an active member of all of the various organizations, on both the East and West coasts, which eventually led to the present A.S.C.—the original Motion Picture Camera Club of New York, organized in 1911, the famous Static Club, the Cinema Camera Club of California, and so on. During World War I he was a cinematographer in the Signal Corps of the U. S. Army, and spent 14 months in overseas service. During much of this time he was at the front; later he was attached to General Pershing's staff, and finally to President Wilson, in which lat-

LEONARD SMITH ELECTED PRESIDENT OF THE A.S.C.

ter post he filmed the signing of the Versailles Treaty. For the past sixteen years he has been on the camera staff of the Metro-Goldwyn-Mayer Studio, where he has distinguished himself as a leading director of photography in both black-and-white and color. He was one of the first, if not actually the first "production" cinematographer to make a Technicolor picture single-handed, without the assistance of a Technicolor specialist, and several of his achievements in Technicolor have placed him in the Academy Award nominees exclusive circle.

Discussing his plans for his term as the A.S.C.'s fourteenth chief executive, the new President said, "I feel that I am taking this office at an unusually favorable time. The negotiations Fred Jackman started for divesting the A.S.C. of the responsibility of overseeing the economic welfare of directors of photography as a collective bargaining agent—an activity never intended by the Society's founders—are now virtually complete, and this important duty will soon be placed in the efficient hands of Local 659, I.A.T.S.E. This will put a stop to a long and sometimes unnecessarily acrimonious dispute within the

craft, and will give the camera profession greater strength by having all of its members from top to bottom represented economically by a single, all-embracing agency.

"At the same time, this move will enable the A.S.C. to revert back to its original function as a social and educational society or guild for directors of photography, as it did so successfully for the first fifteen years of its existence. Only today we intend to make its activities for its members and for the advancement of the camera profession generally much stronger, and on a wider scale than ever before. The program of regular social and educational meetings, which had to be neglected during the period when economic considerations took up so much of the officers' and members' time, will be resumed. An active and widespread campaign of publicity in the interests of cinematography and cinematographers will be inaugurated. Personal business management will be available for members whose salaries are above the Union scale, and therefore outside the purview of Local 659.

"In all of this, I want to make it
(Continued on Page 192)

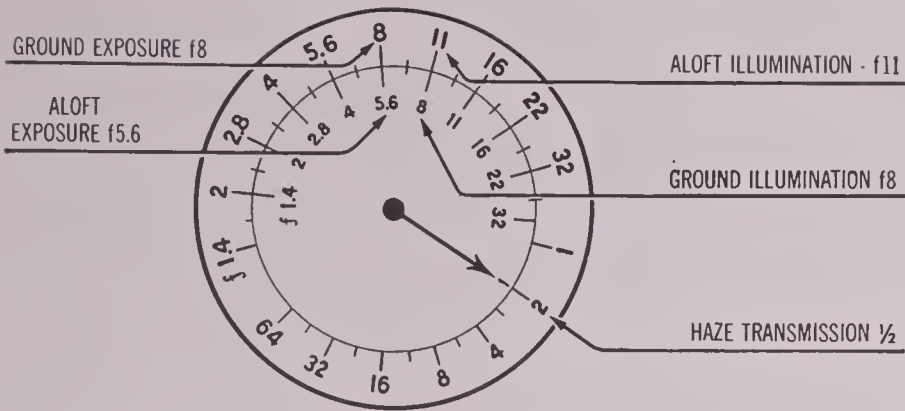


Figure 2.

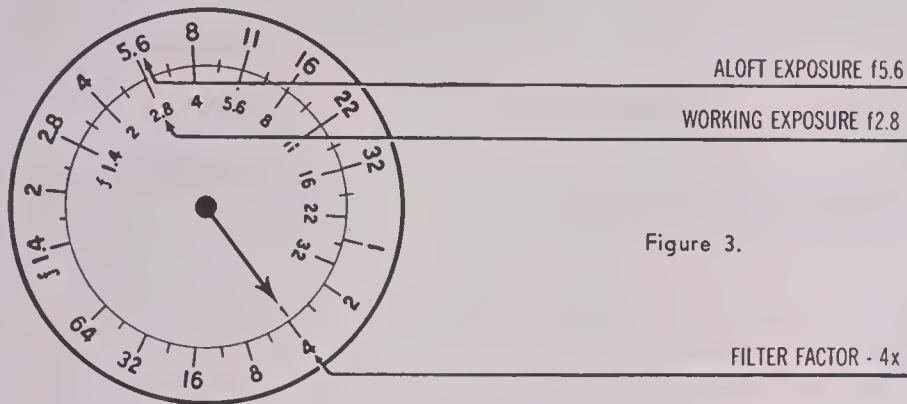


Figure 3.

EXPOSURE CONTROL IN AERIAL PHOTOGRAPHY

By CAPT. D. W. NORWOOD, U.S.A.A.F., (Ret.)

COMPENSATING for the effect of aerial haze as an exposure factor is one of the biggest problems of modern aerial camerawork, whether still or movie. A great part of modern operational flying, including bombing and photographic reconnaissance, is done at altitudes of 20,000 feet or more. At these altitudes there is almost always a thick blanket of haze interposed between the camera and that part of the earth's surface which is being photographed. This haze consists largely of moisture in the air, with the addition of minute but innumerable particles of fine dust and smoke.

This blanket of haze acts in three ways in its effect upon exposure. In the first place, it absorbs a definite proportion of the light falling on the subject as the sun's rays go earthward through the haze; this absorption is dependent on the thickness of the haze blanket. Secondly, it absorbs an equal proportion of the light reflected upward from the earth to form the image in the camera. Thirdly, a portion of the light falling on the haze from the sun is reflected upward—often so much that un-

less a filter (or sometimes a pola-screen) is used to cut out this reflected light, the resulting picture is likely to be more a picture of the haze itself than the terrain beneath it.

Determination of correct exposure for stills or movies taken with the camera pointing straight down from the plane will therefore involve three factors: (1) the intensity of the light coming from the sun at the plane's photographing altitude; (2) the intensity of light actually falling on the terrain being photographed (*i.e.*, factor 1 minus the absorption factor of the haze blanket); and (3) the amount of light finally reaching the camera-lens to form the picture (*i.e.*, factor 2 minus the factor of the haze-blanket's absorption, which is proportionally equal for light going either down or up.)

Any system of exposure-determination which does not take into account these three factors will be more than likely to produce an erroneous result. For example, a simple measurement with a reflected-light meter, with the meter pointing downward from the plane, would make no allowance for the amount of

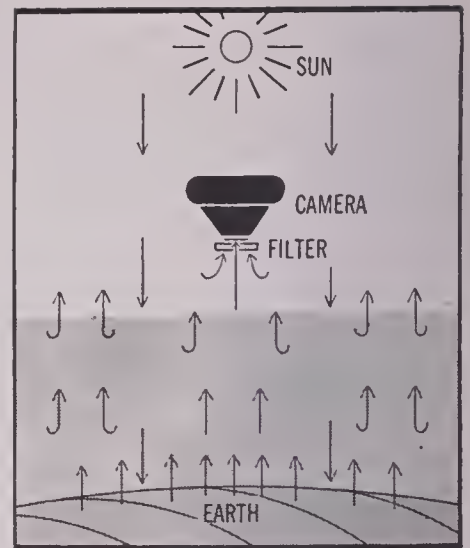


Figure 1.

light reflected upward by the haze itself, and would also fail to give any measure of the doubled absorptive influence of the haze itself on both the direct light illuminating the subject and the reflected light forming its image. Similarly, a simple incident-light measurement of the illumination aloft would fail to measure or allow for the haze absorption, reflection, etc.

However, a very simple method of measuring these factors by means of the Norwood Exposure-meter has been devised, together with a system of deriving the true "aloft exposure" therefrom.

The first step is to measure the incident-light illumination at ground level, before taking off. Since the camera will be used overhead, shooting straight down, this is done by reading the meter with its hemispherical light-collector pointing directly up. The exposure indicated by this reading would be correct for taking pictures of the ground at low altitudes of from 100 to 200 or 300 feet.

The next step is to take a second reading when the plane is in the air at approximately the altitude from which the pictures will be taken. This, too, is taken with the meter's light-collector pointing straight up.

The relative values of these two readings will indicate how much illumination has been absorbed by the haze blanket as the light makes its downward trip. Obviously, the haze will absorb an equal proportion of the reflected, image-forming light on its upward trip to the lens. For this reason it is necessary to modify the "ground exposure", as determined by the first reading, by a factor derived from the transmission characteristic of the haze, to arrive at the true "aloft exposure" at which the picture should be made.

For example, suppose the "aloft illumination" is twice as great as the "ground illumination." This means that the haze blanket transmitted only one-half the light on its downward passage, and in turn will transmit only one-half the light actually reflected from the subject on its upward passage to the cam-

(Continued on Page 191)

FOR the sixth time in its twenty-four year history, the American Society of Cinematographers has bestowed its highest honor—Honorary Membership. The recipient of this zealously-guarded distinction is Lieutenant Colonel David MacDonald, founder and head of the British Army Film and Photo Unit, whose film of the British Eighth Army's pursuit of Rommel across the Western Desert of Africa, "Desert Victory,"* when previewed before the membership of the A.S.C., evoked the most enthusiastic response any film has ever received from this group, and an unparalleled standing ovation to the man under whose guidance it was made.

In citing Colonel MacDonald for this highest honor within the bestowal of the A.S.C., President Leonard Smith and Executive Vice-President Fred W. Jackman stated that Honorary Membership in the American Society of Cinematographers is awarded only to those most outstanding individuals whose contributions to the progress of cinematography have had a basic and enduring



A.S.C. President Len Smith hands Lt.-Col. David MacDonald the gold card of honorary membership in the American Society of Cinematographers while Executive Vice-President Fred W. Jackman looks on.

BRITISH WAR CAMERA ACE WINS HONORARY A.S.C. MEMBERSHIP

effect upon the camera craft. "In the past," said President Smith, "we have bestowed Honorary Memberships on the men who invented the motion picture and made it a practical possibility, and upon those whose creative effort has given us perfected tools with which to work. Today, in giving this honor to Colonel MacDonald, we are honoring another man who has made a fundamental contribution to the progress of cinematography, for Col. MacDonald has brilliantly pioneered the use of motion pictures as a dynamic part of the United Nations' War Effort. We are all the more ready to give him this honor because of his repeatedly expressed conviction that the real credit for his production belongs to the cameramen of his command who did the actual camerawork at and beyond the firing front. That is what we would expect, perhaps, of a truly fine gentleman and soldier such as our new Honorary Member: but his modesty cannot conceal the fact that without his own ability, vigor and broad vision, the cameramen of Britain's Eighth Army could never have had the chance to do the magnificent work they have done in advancing the use of motion pictures in our united War Effort. We hope that many of our own members now in the film services of the United States' Armed Forces will be privileged to follow along the paths he has pointed out; but meantime, we are proud to honor the man who has so brilliantly shown us all what can be done."

In accepting his honor, Colonel Mac-

Donald stated that he was personally gratified almost beyond speech at the high and surprising honor done him. "But," he said, "I don't accept this so much in a personal way as I do as a tribute to those men in my command who actually did the work. We have some damn fine lads there in the Western Desert, men who have gone through a deal of blood and toil to prove what motion pictures can accomplish in modern warfare. I know that this honor you have paid to all of us through me will inspire them to carry on even more valiently to justify this very great compliment given them by you gentlemen to whom they look up as the greatest exponents of cinematography in the world. Since Tripoli our chaps have photographed another 170,000-odd feet of battle films, and soon, as our united armies push Rommel finally into the sea, we'll be able to send you back another picture to show you how we're carrying on in our united effort."

The distinction of honorary membership in the American Society of Cinematographers is, as has been said, so seldom bestowed that it has become internationally recognized as the highest cinematographic honor. Up to the time Col. MacDonald received the golden card emblematic of his membership, but five others had been so honored. The first of these was the late Thomas A. Edison, "the father of the motion picture." The next was the late George Eastman, without whose celluloid film Edison's invention would not have been possible. Some years later, the third of these honors was awarded to Albert S. Howell,

of Bell & Howell fame, who first gave the industry precision-engineered cameras, printers, film-perforators, and the like, to replace the crude equipment of the pioneer days. The Society's fourth Honorary Member was George Mitchell, who designed and with the collective cooperation of the membership of the A. S. C. perfected the Mitchell camera which for nearly twenty years has won and maintained its place as the world's standard studio camera. The fifth Honorary Member was Edward O. Blackburn who during the many years he has represented the J. E. Brulatour organization in Hollywood has endeared himself to the camera profession not alone through aid in technical matters, but by his inestimable services as a guide, counsellor and friend to all cameramen.

The addition of Lt. Col. MacDonald to this select group—the first other than an American to be so honored—is a fitting tribute to equally great and timely achievement. As the organizer and head of the British Army Film and Photo Unit, he has pioneered in the latest and currently the most important use of cinematography—as a vital instrument of modern warfare. As the coordinating genius behind the photographing and editorial completion of "Desert Victory," he has not only given the United Nations a production which ranks as the greatest film document yet to come out of the war, but has brilliantly proven what all cinematographers—British, Russian, Chinese and American alike—so strongly believe: that motion picture film, correctly used, can be as valuable as bullets in our united effort toward victory. **END.**

* See Page 175.



Aces of the Camera

XXVIII:

Milton Krasner, A.S.C.

By WALTER BLANCHARD

ONE of the publicists' favorite clichés is the story (often only too true) of the little starlet—or script-writer—or director—who grew up right across the street from a Hollywood studio, but just couldn't get a job there until she (or he) travelled dispiritedly to New York, "clicked" on Broadway or the radio, and came home to a big contract and a swimming-pool.

We hate to spoil the publicity-men's dream, but Milton R. Krasner, A.S.C., is a living refutation of their pet success-story. Of course, he didn't live in Hollywood, but in New York: but there he lived right down the street from one of the biggest of the early studios—Vita-

graph. And when he was about fifteen years old, he marched down the street to the Vitagraph studio and—got a job.

But if the start was easy, what followed wasn't; it took Milt the better part of the following fourteen years to really make his mark on the profession and emerge as a full-fledged director of photography. He started, like many another, in the laboratory. Then he switched for a while to cutting—just long enough, he says, so he knew how to make a good splice, and have a slight idea of what goes on in the editing process.

Then he got a chance to go out on a camera, as an assistant—a utility job which was just beginning to appear in

the better studios. He carried the camera-cases, held the slate, loaded and unloaded the magazines, and so on, for about six months. And then he was promoted to the more important job of Second Cameraman which, despite its importance, has proven so much of a dead-end street for so many fond photographic hopes. And there he stayed for more than ten years.

"But," he'll remind you, "in those earlier days a Second Cameraman's job wasn't what it is today. I think Bob DeGrasse put it right a couple of months ago when he said that the Second Man's work then was more nearly like that of an associate cinematographer. Most companies used two cameras on the set: the first one, operated by the First Cameraman, made the negative used for printing the domestic release. The second one was operated by the Second Cameraman, and made the negative used in making the foreign release-prints. I suppose that's how those titles developed.

"And twenty-odd years ago, the Second Cameraman had a good deal wider scope of action than he has today. When the going got tough and the front office put on the pressure to hurry up to meet the release-schedule, the company would often split into two units, a good deal as it does today. Only in those days, the Second Unit would be in charge of a good Assistant Director and the Second Cameraman.

"Then, as the laboratories found how to make better dupe negatives for printing the foreign release, the need for the old-time Second Cameraman dwindled. At the same time, though, the complexities of the First Cinematographer's job began to increase—especially as sound came in—and there grew to be a real need for an experienced man who could take full responsibility for operating the camera, while the First Cinematographer concentrated his full attention on lighting, composition, and the dramatic aspects of his job. So today's Operative Second Cameraman was born.

"But those years I spent as Second and Operative were the best sort of training anyone could have. I worked on all kinds of pictures—big ones and little ones—with the very best cinematographers in the industry. I learned not only what *one* man would do, but what half-a-dozen really great cinematographers would do when confronted by some similar problem, whether it was lighting some particular type of face, or figuring out the execution of some peculiarly difficult set-up or dolly-shot.

"That's why no 'school' of photography other than the old college of hard knocks can really turn out a studio cameraman. Just think of the tremendous investment represented not only by the big major-studio 'specials' I worked on with such masters as John Seitz, A.S.C., Hal Mohr, A.S.C., Lee Garmes, A.S.C., and the others, but also on the scores of tough little program quickies and west-erns. Just as a matter of plain dollars

(Continued on Page 186)

THROUGH the EDITOR'S FINDER

THERE has been a growing tendency of late among the industry's so-called top-flight cinematographers to insist on what might be called "limited-term" contracts. Instead of seeking hungrily (as may have been necessary in those earlier days when cinematographers' salaries were not what they are now) for the greatest possible number of weeks drawing salary on a studio's payroll, regardless of what type of picture he might be assigned to, more and more of today's ace cinematographers are asking—and getting—contracts which, while carrying top salaries, put a definite limit upon the amount of time the producer can work the cinematographer. In some cases, that maximum is expressed in weeks—say from 30 to 36 weeks out of the year. In others, it is expressed in terms of productions—usually three or four top-bracket, long-schedule ones in the course of the year. In most instances these new-day contracts give the cinematographer the vitally important right to choose or refuse productions the same way an established star or director does.

To our mind, this is one of the greatest forward steps the cinematographer's status has taken in many a long year. It is a practice we believe should be encouraged, not only by the cinematographers themselves, but by the producers as well, for in the long run it benefits both.

To start with, the director of photography is rightly regarded as one of the two or three key men of production. If the producer's responsibility is to see to it that script, casting, physical mounting and the myriad other details of production are well in hand before the picture reaches the shooting stage, and the director's is to see to that the cast most perfectly tells the story handed him, it is the cinematographer's responsibility to achieve perfection in the visual translation of the story from set to screen—and often enough to "carry" an inefficient director, or to cover up deficiencies in the physical details of production mounting, as well.

In all of this, the director of photography is expected to keep up, both physically and mentally, with directors, producers and players who spread their vacations over from three to six months a year.

When the man of the camera has gone from picture to picture with only days, or even hours, in between, this just isn't in the cards. When, as in too many cases we know, the cinematographer has been kept busy not merely the full 40 weeks of the traditional contract, but the year's full 52, and may have gone without any real vacation for three, four or even five consecutive years, even the strongest of physical and mental stamina must break down. Under such conditions, he cannot give his best photographically; he must inevitably slip, to

some extent at least, into routine, "formula" photographic treatments in place of more original lightings and compositions which might conceal pitfalls for a tired man. Certainly he can neither give his best cooperation to an experienced director, nor his professionally best protecting guidance to an inexperienced one.

In other words, under such circumstances the studio is not receiving, and cannot receive, the fullest value of the photographic skill for which it is paying.

On the other hand, entrusting a job of camerawork to a man who films but three or four pictures a year, and has plenty of time between for rest and relaxation means inevitably that the man at the camera will be physically and mentally fresher . . . able to serve more creatively at his own job, and also to exercise more alertly the care for the producer's interest as regards cooperation with the director, and the glossing over of wartime production shortcomings, which are so equally a part of his job.

In other words, the producer will get more for his money on such a basis than he ever can under the traditional get-the-most-work-possible policy of handling cameramen.

It may be argued that such a policy, in view of today's increasing shortage of trained camera personnel—especially in and near the so-called top-bracket class—would result in a serious shortage of what the producers like to term "A-picture cinematographers."

In reality, it wouldn't. It would result in the opposite discovery that *there really are no "B-picture cameramen."* There are plenty of cinematographers who photograph nothing but "B-pictures"—largely because they've been typed as fast-working "B-picture" men, and have never had a chance at an "A." Put almost any one of them on a production with the greater production values, the longer schedule and more generous budget that makes an "A," and you'd find you were getting "A-picture photography" on the screen. After all, it doesn't take such a very long memory to recall when most of today's top camera stars were shooting "B" and "C" pictures, and doing none too brilliantly at it . . . when Lee Garmes was doing "quickies," and Ted Tetzlaff Westerns . . . when Charlie Lang was on the verge of being fired for indifferent work on program pictures, and Gregg Toland and Bill Daniels were only hopeful assistants. There are plenty of men doing that same type of pictures today who need only a chance at a really major "A" to put them up into the Academy Nominees circle.

So we hope this new trend toward "limited term" contracts spreads, for it will keep the studios from killing off some of their biggest camera-assets through sheer overwork, and it will open up an entirely new field of new, but

thoroughly experienced men already able, and oh so willing to handle with distinction even the industry's biggest camera assignments. And given the chance, they'll do it well.

SOME day we hope someone will be able to sum up all the important jobs 16mm. is doing in this global war. Among those we can think of immediately offhand are the making of countless military and industrial training and research films—the latter using not only 16mm. but even 8mm. at times for super slow-motion studies of fast-moving machinery—to further the War Effort directly; the use of 16mm. cameras and sound-recorders to record the data obtained in test-flying aircraft; its use in battle photography by our own Army and Navy, and in camera-guns of both the British and American Air Forces to bring back a photographic record of the firing of each gun—and the results obtained. And don't forget the V-Mail service, which is entirely on a 16mm. basis, and means so much in quick communication between the men at the front—no matter how distant—and their folks at home. Only recently we received a V-Mail letter from a Marine cameraman in the South Pacific—not too far from Guadalcanal, we suspect—in less time than it would take a normal, peace-time letter to go by regular mail from New York to Hollywood.

IT seems to us that cinematographers throughout the industry should exert themselves to put a stop to what seems to us a very unjust policy. There appears a growing tendency to give screen credit for special photographic effects partly, and in some cases exclusively, to non-photographers. In some studios the credit is split between an art-director and a cinematographer; in others, there's a three-way split between a special-effects director, art-director and (only incidentally) cinematographer. And in at least one studio, the special-effects cinematographer is never mentioned at all.

Yet it is the man with the special-effects camera knowledge who really puts the scene on the screen. He could—as he has for many years in the past—carry on efficiently without the aid of either special-effects director or art-director. But they couldn't carry on without him—and the specialized knowledge and skill he has built up over a period of two or even three decades of intense specialization.

We're all for the principle of credit where credit is due—so why not follow it? There is a limit to the number of credits it is physically or economically possible to put on the screen: wouldn't it be fairest to give that credit to those who actually do the work?

A.S.C. on Parade



For lo, these many months Capt. Ted McCord, A.S.C., of the Army Air Force, and Ye Ed have been most inadvertently dodging each other. You see, we wanted his pic for this page . . . sooo—we spent quite a few Saturday afternoons sitting here with loaded camera hoping for a chance to “mug” Capt. Ted—and missed him. He came up several times with similar intentions, only to find us elsewhere, grappling with printers, advertisers, and such. Finally, though, at the last A.S.C. meeting, about the middle of the third reel of “Desert Victory,” somebody handed us a very official-looking Air Force envelope with this handsome picture of Capt. McCord in it. Looks as though both of us won out on the deal, for this portrait by an uncredited Air Force photog is probably a lot better than we’d have done ourself!

★

Our sympathies to Past-Prexy John Arnold, A.S.C., bedded with a very bad case of flu, verging closer toward pneumonia than any of us like to see.

★

And the latest bedside report from Ray June, A.S.C., is encouraging: while still in the hospital, he’s improving, and allowed to have visitors occasionally.

★

By the way, did you hear the moniker our recent Russian gusts pinned on Fred Jackman—? He provd such a nice host they called him the Russian version of “Comrade Santa Claus”—but at first he thought it meant something to drink, for it was Tovarich Jackacola!

★

Add things we didn’t know about A.S.C. members—Eddie Cronjager, A.S.C., is quite the piano virtuoso (classical variety). Now with Eddie’s piano, George Barnes’ fiddle, and Sid Wagner’s very hot sax, we ought to have the makings

of a pretty good A.S.C. orchestra! Anybody play the drums—?

★

During the last several weeks a lot of folks have been asking us about that ad Karl Freund, A.S.C., had in the March issue, congratulating Arthur Edeson, A.S.C. and Mike Curtiz for their joint achievement in “Casablanca.” Our answer is that it’s the real McCoy—conceived in Karl’s brain, and paid for (cash!) out of his pocket. We think it’s a mighty fine gesture . . . and one worth emulating when you see a fellow cinematographer come up with a similarly swell piece of work.

★

Miracles *do* happen—that perennially busy man, Byron Haskin, A.S.C., after directing we-can’t-tell-you-how-much of “Action In the North Atlantic,” and performing endless special-effects chores on “Air Force,” “Mark Twain,” and the other Warner biggies, actually managed to get himself a whole week’s vacation! Went up to visit relatives in ’Frisco, so we hear.



Congratulations to the A.S.C.’s newest bridegroom—Master Sergeant Peve-rell Marley, A.S.C., U.S.A.A.F., and his bride, the lovely Linda Darnell, who did a surprise elopement to Las Vegas a few days ago for the knot-tying. Pev, you know, shot Linda’s first test when she arrived in Hollywood, and then her first picture . . . thereby starting a friendship that grew naturally to mean much more as two swell people really got to know each other. The only thing we can’t understand about the whole affair is where, in these rationed days, did they get the gas to drive that round-trip to Las Vegas—?

★

Wonder if this is the first “second-generation A.S.C.” romance—? We’ve just learned that 1st. Lieut. David P. Boyle, son of John W. Boyle, A.S.C., home on leave from duties with the Signal Corps, has just popped the question to Miss Betty Jane Huse, daughter of Emery Huse, A.S.C.

The sincerest sympathies of the entire A.S.C. go out to Faxon Dean, A.S.C., on the recent death of his wife.

★

Everybody patting Johnny Boyle, A.S.C., on the back for providing the projectors and operating ’em at the last meeting when “Desert Victory” was shown . . . If they’d seen the amount of time (and sweat!) he put in beforehand overhauling them to make sure they’d be in perfect condition for the meeting, they’d give him a medal!

★

And did you know that Sol Polito, A.S.C., was the one who provided that big “tarp” with which to black out the sky-light over the A.S.C. lounge? Thanks, Sol, from all of us!

GEORGE BLAISDELL

It is with profound regret that we report the death, on April 20th, of George Blaisdell, former editor of THE AMERICAN CINEMATOGRAPHER, and a pioneer in motion picture journalism. A journalist and printer for more than fifty of his nearly 80 very active years, he was credited with writing the first review of a motion picture in a “legitimate” newspaper when on the staff of the New York “Sun” more than thirty years ago. Since that time he served for many years as editor of the “Motion Picture World,” the “International Photographer,” and THE AMERICAN CINEMATOGRAPHER, as well as on the staffs of such publications as “The Billboard,” “The Hollywood Reporter,” “Variety,” and many others. In ill health since he was stricken by a paralytic stroke last November, he had been recovering to the extent that we hoped soon to have some articles in his inimitable style in future issues of this magazine.

George Blaisdell will be missed by a remarkably wide circle of friends—not only those who knew him personally, but those, too, who knew him only by correspondence, or by what he made out of the magazines placed in his charge. His was a unique character: a man of very positive opinions, and unshakable loyalty to his friends and to his concept of what was right, he was, as one friend expressed it, all pepper-and-salt on the outside, and beneath it, the finest of gentlemen and friends to those who got to know him well. As a friend and fellow-worker he knew no peer.

Above all, he was a man who loved life and who, during nearly four-score years, lived it to the full. The sincere sympathies not only of the A.S.C. and this editor, but, we are sure, of the world-wide circle of readers of this magazine go out to Mrs. Blaisdell, and to his grandsons and great-grandchildren.

PHOTOGRAPHY OF THE MONTH

DESERT VICTORY

Released through Twentieth Century-Fox.

Photographed by The Officers and Men of the British Army Film and Photo Unit, and the R.A.F. Film Production Unit.

If there are such things as Academy Awards next year, our sincere advice to the Academy awarders would be to take all of the "Oscars"—especially those for the best production, best direction, cinematography, script-writing, film-editing, scoring, etc.—and melt them down into one man-sized statuette to be presented to the makers of "Desert Victory." Then they could forget the banquet, and put the twenty or thirty-odd thousand dollars these annual fests cost into War Bonds!

For "Desert Victory" is by long odds the picture of the year. It is indisputably the greatest film yet to come out of World War II, not only as cine-reportage, but as an example of thorough-going film craftsmanship in every department.

Yet "Desert Victory" is no piece of staged film entertainment. It is the actual, documentary story of the British 8th Army's drive across North Africa, which first dislodged Rommel from his strong point at El Alamein in Egypt, and then chased him nearly 1400 miles across the desert to Tripoli and into Tunisia. It was filmed at the front by a combat camera detachment of 26 enlisted photographers and six officers of the British Army Film and Photo Unit, with aerial camerawork by members of the R.A.F.'s Film Production Unit. During the making of the picture these uncredited but heroic camera-crews kept so consistently with the front-line fighting that the majority of the time they were nearer to the Germans than to their own forces. Their losses counted four killed, seven wounded, and six taken prisoner. But they brought back over 200,000 feet of negative, together with a good bit of very useful footage captured from German combat-camera-men.

From this, "Desert Victory" has been edited. In its final release length of 5400 feet, there are but 179 feet of staged scenes—night-effects, which could not be obtained under actual conditions.

Photographically, the picture is remarkably good when one considers the conditions under which it was made. Here and there the contrasty desert lighting conditions make the scenes go too contrasty, and at other times the combination of flat subject, flat lighting and the dust and smoke of battle make some scenes too flat; but a very surprising lot of the picture is almost as good, photographically, as could be expected of a studio production's location scenes.

The night-effects at the start of

the bombardment at El Alamein are enormously effective photographically—filmed entirely by the almost continuous flashes from the mouths of Montgomery's artillery as it laid down a murderous barrage on the German lines.

The cutting and scoring of this sequence especially are of incredibly fine calibre, bringing to mind some of the sharply dramatic cutting of Eisenstein and some of the early Russians. This sequence, in fact, relies really much more upon brilliant, silent-picture editing for its impact than upon conventional sound-film technique.

The construction of the film should long serve as a model for future war-reporting pictures. There is no sentimentalizing; there are no phoney dramatics or flag-waving: but there is told—for the first time, I believe—the complete story of the planning of a major offensive, its execution and victorious culmination. Due footage is allotted to the problems of supply and transport; of replacements of personnel and equipment; of physically toughening the men themselves, from General Officers down to privates. Then the story gives a clear explanation of the commanders' plans of strategy, and follows with nearly an hour of thrilling action scenes which show how those plans were carried out by all arms—tanks, artillery, air forces, and infantry. And this coverage, when it is realized it was accomplished by a relatively small group of men dashing hither and thither on Jeeps, with only Eyemo and DeVry hand-cameras, is supremely good.

"Desert Victory" will unquestionably go down as the really great picture of this war—and as such we can only urge you to see it—and see it again and again.

CHINA

Paramount Production.

Director of Photography: Lt. Leo Tover, A.S.C.

Process Photography: Farciot Edouart, A.S.C.

Special-effects: Gordon Jennings, A.S.C.

This was the last production filmed by Leo Tover, A.S.C., before taking his present position as a Signal Corps cinematographer. It is decidedly one of his best, too. Essentially one of the virile wartime action-dramas in which director John Farrow has lately specialized, "China" offers more to the cameraman than any of its predecessors. As a great deal of the picture is played in night-effects, cinematographer Tover manages to get a great deal of mood and pictorial effectiveness into his work, without in the least lessening the dramatic "guts" of the story—in fact, rather heightening them. His treatment of the players is, of course, characteristically excellent, as well.

The process and special-effects work by Farciot Edouart, A.S.C., and Gordon

Jennings, A.S.C., is fully up to the high standards expected of these men and their capable staffs.

TONIGHT WE RAID CALAIS

20th Century-Fox Production.

Director of Photography: Lucien Ballard, A.S.C.

While probably ranking as a program effort, this picture is an almost flawless example of melodramatic photography. In addition, it packs more of a dramatic wallop than many an "A" we could mention.

Lucien Ballard has done one of those jobs of camerawork that ought to be studied and re-studied for its perfection. With the exception of perhaps two scenes—which might, at that, be improved in printing—his lighting, composition and general treatment were so perfectly in balance, and so well-attuned to the mood of the action, as to be exemplary.

AT THE FRONT IN NORTH AFRICA

Warner Bros. Release (Technicolor, from 16mm. Kodachrome).

Filed by uncredited Photographers of the U. S. Army.

This little four-reeler—the second of the battle films our Services have publicly released—is rather disappointing, especially when compared to "Desert Victory." We've heard a good many conflicting stories as to why this is: some blame those who supervised its making; others hint their hands were tied by red tape and politics. But the picture as it stands serves at any rate to show rather impartially both the good and bad points of 16mm. for combat-camera use. Where the man at the camera was good, so are the enlarged-to-Technicolor results; where the man behind the camera was not adequately trained photographically, the result is such as even a third-rate amateur would blush to show. All of which leads to the inescapable conclusion that for combat camerawork 16mm. Kodachrome is all right (or better) provided it is placed in the hands of men who know their business. And for some of the rest of those connected with this picture, we'd like to quote an admonition given in one of the Signal Corps training classes: "Don't pan—or you'll be back in the infantry!"

AERIAL GUNNER

Pine-Thomas Production; Paramount Release.

Director of Photography: Fred H. Jackman, Jr., A.S.C.

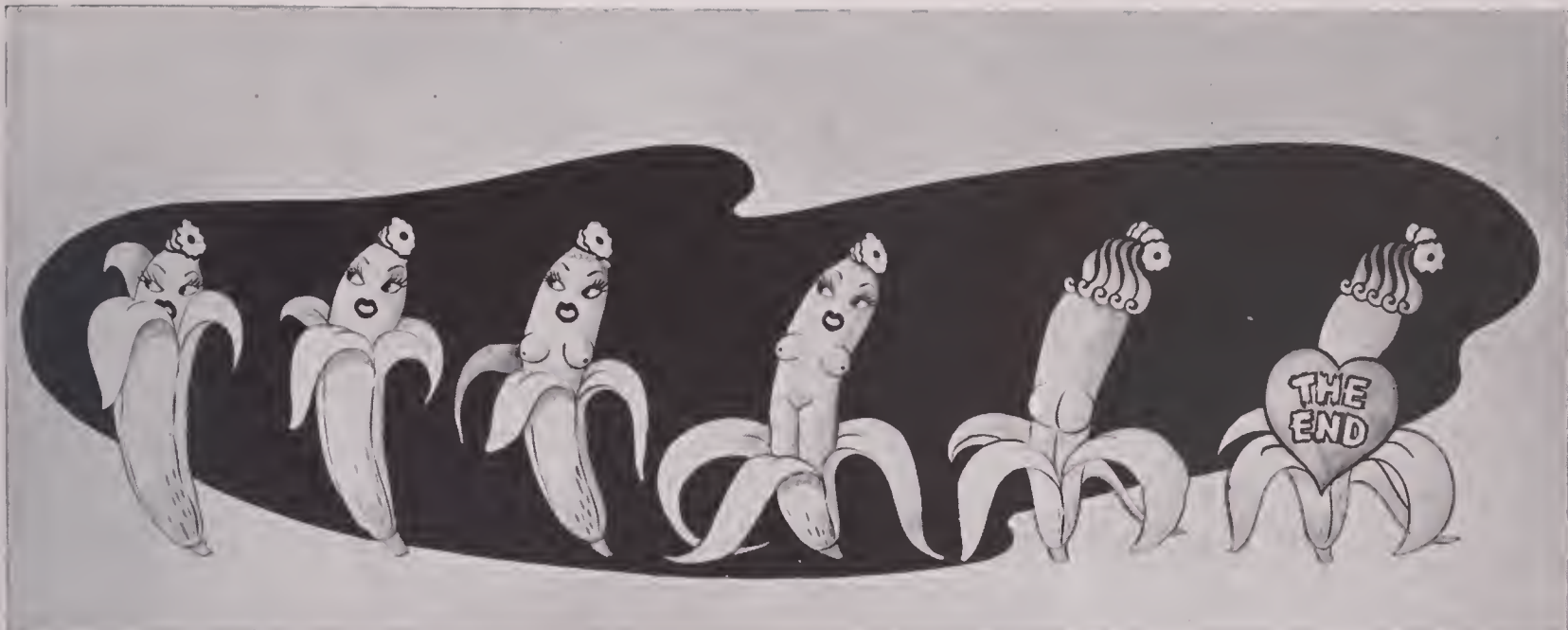
This picture might be described as the poor man's "Air Force," the chief difference between the two being about \$1,930,000 in budget and six or eight months in shooting time. In addition, director of photography Jackman handled all of the photographic work on the picture—not only the "production"

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AND THEN YOU CAN EAT THEM—! Scenes from Carl Anderson's "Vegetable Follies." Top, left: Senor Cucumber wears a Scotch tape zerape and his donkey is made of corn-husks; miniature cacti and a folded bath-towel form the background. Right: Carrot Ballerinas' faces painted in poster-paint, crepe-paper skirts. The chorines are attached to a paper-covered lath, hinged in the middle. The prima ballerina is animated by means of a plastic knitting-needle concealed in her head-dress. Middle, left: "Bubbles Banana," strip-teaser; face

painted on peeled surface, hair made of red embroidery cotton with small paper flowers . . . costume—well, you guess! Right: "Carmen Miranda" . . . otherwise a turnip with painted eyes and mouth, head-dress of beads, feathers and turnip tops. Bottom, left: The Onion Sisters—four onions, two large and two small, with skirts and kerchiefs of cotton percale. Right: the group at work filming the red-cabbage "Arabian Night."



Vege-table-Top Follies

By CHARLOTTE ANDERSON

IDEAS are never rationed, and that is a happy thing. Gasoline is, so travelogues are "out" for the duration. Film is scarce, so it is necessary for film fans to confine their activities to smaller areas and less film-footage. In view of the situation, we decided to film a table-top short, and concluded that vegetables would provide attractive and original models for an amusing "Follies" motif.

When four congenial cinematographers with some talent for wielding paint brushes, and creative tendencies toward presenting table-top entertainment, get together, the fun really begins. We devoted some thought and planning to our project ahead of time, and an entire week-end to shooting. Essential ingredients were: Four enthusiastic 16mm. fans armed with scissors, poster-paint, brushes, assorted vegetables, wire, and gay bits of cloth; 6 No. 2 Photofloods; and an unlimited number of ideas for lighting, staging, and gags.

While our husbands concentrated on the camera detail and the construction of background set-ups, we girls dressed and decorated our cast. First, however, we wrote a short scenario or outline for our Follies idea, and "took off" a few well known entertainers in vegetable form to intersperse with characters of our own devising. The opening shot was of Carmen Miranda, whose intriguing smile was recorded on the smooth skin of a large turnip, and using the natural foliage around which to build the well-known turban, we cut loose with plenty of imagination and decoration as she revolved before a lavishly-designed background done in South American trend.

We have a painter in the crowd, who

dashes off finished titles and smart backgrounds, all of which adds up to a snappy effect. The titles, incidentally, were lettered on black backgrounds, and were animated on and off in 2-frame wipes, then the desired footage was run through the camera, and the backgrounds reshot for the following scene. Such title word phrase as *The Carrot Ballerinas*, *Señor Cucumber's Donkey Serenade*, and *Bubbles Banana*, *Strip Tease Artist*, *Takes Off*, furnished us with inspiration for various characterizations.

For a bit of action south of the border, we used Señor Cucumber to render his "Donkey Serenade." The props in this scene were a corn-husk donkey, a grass hut, some miniature cactii, and our hero wearing a diminutive straw sombrero and tiny zerape. We lacked something to use as a foreground on which to place our scene, so a fluffy dusty-pink bath-towel was laid in realistic slopes and bumps under the actors, providing a stunning contrast to the turquoise background. This is the "utilizing what you have" policy. We seldom use anything outside our own household gadgets for props.

After working for awhile with our vegetable models, they seemed so real that we addressed them as "he", "she", "Carmen" or "Bubbles" without the slightest embarrassment, for after all they were celebrities and entitled to the consideration such highly-paid entertainers usually rate. All of the faces were applied to the vegetables with show-card colors, and we managed some amusing characteristics and expressions. We have wondered ever since if the cast really got along, as they were fairly well behaved while we were shooting,

TAKE IT OFF! Hold banana in place with a long nail, and animate skin down by single-frame animation. Then animate turning away from camera—place on curves—animate back to position and continue stripping. Finally animate turning away, and dissolve in red heart end-title.

except for a few fragile ones who would lose their heads!

It is only fair to mention the lift a musical accompaniment gives to this type of production. We chose to open with one of Carmen Miranda's latest, as she introduces the program. We gave the *Carrot Ballerinas* the "Faust" *Ballet Music* and trust they were satisfied. The strip-teaser teased to the "Strip Tease Polka," and other scenes were accompanied by charming incidental music, the whole proving twice as effective as it would have without appropriate melodies to help the moods along.

In order to introduce our full cast, we double-exposed a title "The Ensemble on Parade". Some of our little vegetable people were mounted on a block of wood and pulled one or two at a time through a miniature set to full camera field. The cast included *The Onion Twins*, two shy little maids with sizeable, plump onions for bodies and smaller ones for heads, gowned in ruffled blue skirts and kerchiefs, created by the seamstress of our quartette. Three coy lemon pigs with match-stick legs, paper ears, painted eyes and wire tails added a comedy note to the crowd. A demure artichoke couple also made a brief appearance, with various other fanciful characters suggested by the material at hand, all of which was found in local Victory Gardens, around the house, and in dime stores.

Our next sequence was really fun. We decided on a ballet number, using a graceful array of carrot ballerinas, which we garbed in yellow crepe paper skirts. The premiere danseuse wore a white and chartreuse ruffled effect. The chorus was literally nailed one at a time to a long lath hinged in the center, so that they might be permitted to do a V formation, forward and back, manipulated by two of us, holding the ends of the lath outside camera-range. The soloist pirouetted and toe-danced in front of the ensemble, suspended by

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WORKING HER FINGERS TO THE BONE



SHE GAVE HIM THE EYE



THEY LOST THEIR HEADS



—THEY WERE HITCHED



SHE HIT THE CEILING



HE WAS A HOUND

GUESS WHAT slang phrases these frame-enlargements from Robert Fels' "Cine Whimsy" illustrate—without turning the magazine upside-down to see! Just to give you a hint, the one at the left on opposite page is "He spun her a yarn," and the center top one is "They were walking on air." Below, Newell Tune filming the latter shot; right, Robert Fels.



PUTTING SLANG ON THE SCREEN

By WALTER BLANCHARD

"CINE WHIMSY" is an unusual picture in several respects. It is unusual to have so many trick and double-exposure shots in a 16mm. film. It is also unusual to obtain perfect lip-synchronization in a film shot silent and recorded after editing.

Even the idea behind the story is unusual. A great number of figures of speech or colloquialisms were assembled in logical sequence so as to tell a regular story, but these expressions were portrayed literally, just as a foreigner studying the American language might do if he only knew the dictionary meaning of the individual words and was not yet acquainted with the meaning of these slang expressions. If the expression used was "He got hot under the collar," you would actually see clouds of smoke coming out of the actor's neck in the picture. As this scene would take only a moment, you can imagine how unexpected the action becomes with a hundred of such expressions.

The contrast between the accepted meaning of the colloquialism and the literal meaning, as shown on the screen, is surprising, often comical, and frequently fantastic. To a certain extent the picture is a guessing game; for the audience is challenged to guess the meaning of the figure of speech from its

presentation on the screen. It is a novelty to ask audience participation in a film which is at the same time offered as visual entertainment. It is amazing to see how well the audiences enter into the spirit of the game.

"There is no need to be told that 'Ciné Whimsy' was made by a Frenchman. One can feel the French touch in it right away." This was told after the preview to Robert Fels, who conceived the original idea and directed the picture. But looking backwards, Fels feels that it was particularly difficult for a Frenchman who had been here only a few years to understand the precise meaning of our American expressions. So an American friend, Alice Taylor, translated both the accepted and the literal meanings of hundreds of colloquialisms.

At this point two amateur movie-makers joined them. Newell Tune, of the Los Angeles Cinema Club, was the cameraman who took care of all the technical problems—trick-shots, special-effects, lighting, etc. Norman Johnson collaborated on the shooting script, and he is to be credited with the dialogue. All the actors are amateurs. They do so well, under Fels' direction, that we would never think that they had never played in a motion picture before. Audiences have especially praised the two

leads: Andrée Rayburn as the girl, and Stephen Brantley as the young man, both of whom seem to have professional screen possibilities.

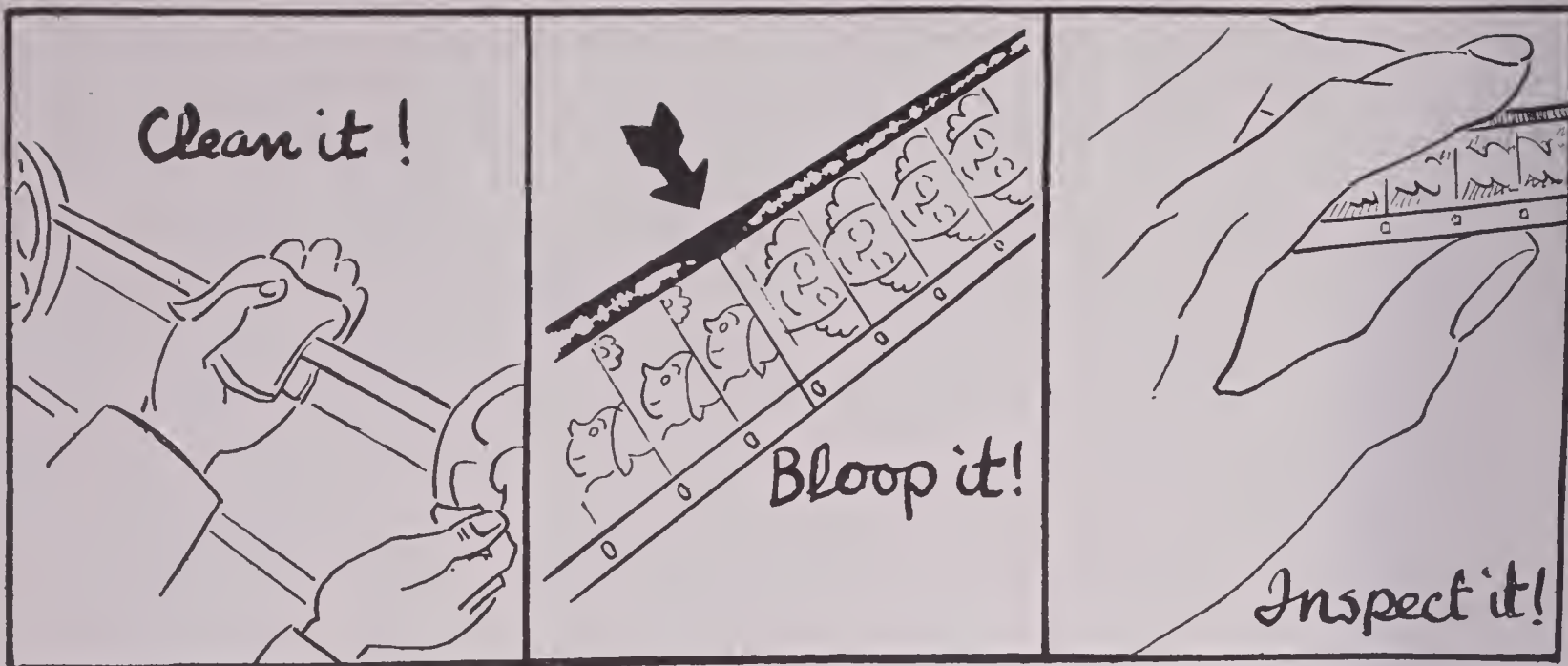
Many of the trick-shots used in this picture would not be so difficult to do with a 35mm. camera, but may be considered an accomplishment in 16mm. For instance, a camera moves toward a bundle of magazines which was just thrown from a passing truck. In the close-up a pair of hands cut the rope and we see a TIME Magazine with a picture of a stenographer at her typewriter. The camera travels closer and stops at an extreme close-up. Then the still picture comes to life and the girl begins to type.

This was accomplished by taking a still picture from the same tripod position as the movie camera and later enlarging a still to fit the beginning action. The enlargement was glued on the front of the Time Magazine which was mounted upside-down on top of several other magazines on a traveling title-board.

The camera was started with the extreme close-up, which was checked in the reflex view finder to coincide with the enlargement of the beginning of the action in the scene following. During the exposure the camera was moved back until the medium-shot was reached. When the film was returned from developing it was turned end-for-end, making the action reversed and, also, the magazine turned right-side-up. This made a transition almost as smooth as you find in 35mm.

As the script called for several dolly-shots (some even made on a sandy beach), a three-rail dolly-track that can be put together or dismantled in three minutes was made out of 1 x 3's and bolts and wing-nuts. The center rail

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How To Care For 16mm. Sound-Films

By D. LISLE CONWAY

President, Syracuse Movie Makers Association

THE past few years have seen an enormous increase in the use of 16mm. sound-films and projectors. They are being used for visual education purposes not only by schools and health associations, but by our War Industries, and by every branch of our Armed Services. In addition, a constantly increasing number of civilian amateurs are using 16mm. sound-films in various projects for bringing film entertainment to our troops, through YMCA, USO and similar organizations and in putting on volunteer shows for men at isolated searchlight and anti-aircraft gun posts, and in similar spots too small or too out-of-the-way to be reached by the usual "organized" camp shows.

As a result, more and more of the workers in these fields are being faced with the problem of taking 16mm. sound-films and equipment to outside meetings for film showings, with little or no experience in the care and operation of this type of equipment.

In the past, if film was damaged through accidental misuse, or the equipment broke down, it could be replaced easily enough. Today, however, because of the war, much of this equipment cannot be replaced. Now the films, projection-lamps, amplifier tubes, photocells, and projectors themselves, must be made to last as long as possible with the least

possible wear. Many of the tubes used in sound-projector amplifiers are no longer made; others are obtainable only on a priority basis. Projection lamps are being rationed, and in some places the old ones must be turned in for the new ones; all new sound projectors are going to the Armed Services; electric cables cannot be purchased; and many other things which we have taken for granted could be easily replaced—cannot now be had at any price.

For these reasons, this article will concern itself mainly with the conservation and protection of the equipment and material we now have in our possession, or still may be able to obtain. In addition to this, hints on good projection practice will be given later.

To your audience, the most important thing is the picture on the screen and the intelligibility of its sound. Dirty, scratched pictures, hissy, uneven sound, not only detract from the appearance of the show itself, but in many cases result in the message that the film tells being entirely lost through distraction of the audience's attention. Therefore the condition, storage, and handling of the films you show are of paramount importance.

The rules to follow in helping to preserve your films are very simple, but nevertheless very important. Remember, once the film is badly damaged through careless handling or scratching, it cannot be repaired!

Keep your films clean! Grease, oil, dust, and dirt are deadly enemies of motion picture film. Oil is sometimes spattered on the film by the projector, grease may have been gotten on the film from fingerprints. These result in blobs of off-tone grey on black-and-white film, and a change of color on Kodachrome or any other color film.

This grease and oil, unless removed, will serve as catchers and collectors of dust and dirt from the atmosphere and, in turn, result in scratched films. The dust and dirt so gotten on the film collect in the picture and sound gates of the projector, and unless removed before each projection will scratch whole sections of film, leaving long white streaks which can never be removed. The picture area on the screen is likely to be fringed with a sort of moss effect and will look like grass growing from the top and bottom of the picture. The sound will grow weaker in volume and, when the sound track of the film has been scratched, will result in crackling, hissy, unintelligible speech.

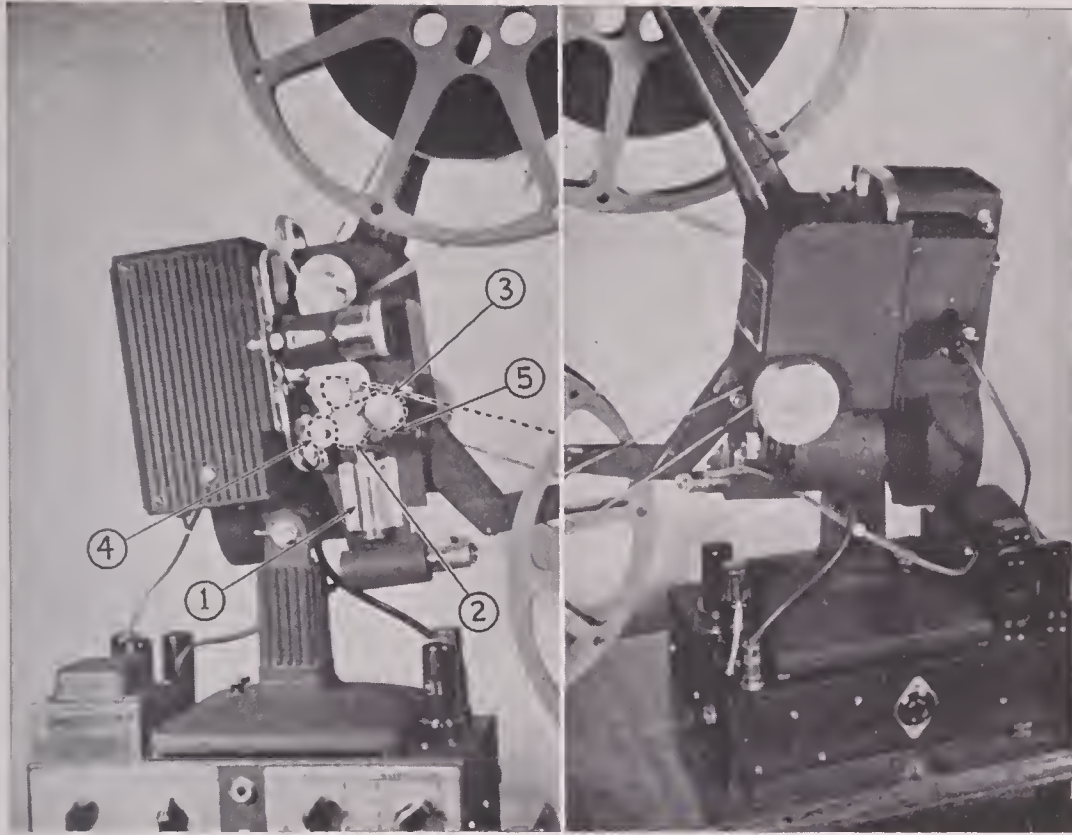
The solution of this is simple, periodic, film cleaning with an approved film cleaner, and the cleaning of the picture and sound gates *before each projection*. The latter will be dwelt on later.

There are many approved film cleaners on the market. Eastman's Film Cleaner, put out by the Eastman Kodak Co., is one. However, let me stress here that only *approved film cleaners* should be used! Ordinary household "spot removers" should never be used, as the cleaning agents and solvents in them are most often deadly enemies of motion picture film. This is especially true of cleaners containing alcohol or benzene, and the like, which will not only ruin the dyes in Kodachrome, but will attack the film base, as well.

The process of cleaning a film is very easy. With most cleaners comes a piece of lint-free, soft, plush cloth. This is moistened with a *small* amount of the cleaner and the film, as it is slowly

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From a lecture delivered at the Convention of New York State Tuberculosis Associations.



The author's Model "EE", as converted for sound. Left: 1, sound-lens; 2, sound pick-up; 3, stabilizing-drum; 4, roller to hold film against pick-up; 5, idler for tension against stabilizer. Dotted line indicates path of film through sound-head. Right: note flywheel, extended reel-arms and amplifier in base.

Putting Sound-On-Film On A 16mm. Silent Projector

By EARL W. ABBOTT,

Syracuse Movie Makers Association

WHAT serious-minded amateur in possession of a 16mm. projector has not wished at some time or other that he could run sound-film on his machine? I know I had always envied those opulent amateurs who owned sound machines. But envy them was all I could do, for the little item of expense stood in the way . . . unless maybe I could make my own.

In March, 1940, I purchased an Eastman EE series 2 Projector and the first time that I examined it closely I was struck by the ease with which this machine could be converted to sound-on-film. Being by profession a toolmaker, and having had some previous experience with sound, having worked on the old Fox-Case sound camera (now the Fox Movietone) all through the experimental stage until it was put into production, and also having built a sound-on-disc recorder, I decided maybe I could make my own sound conversion.

Well, to get back to the projector, I dragged it out one stormy night and with divers tools and instruments proceeded to design a sound-head I thought would do the job, and of course taking into consideration the fact that there is a separation of 24 frames between the picture and the sound.

First I obtained a plate of cold-rolled steel $\frac{3}{16} \times 3\frac{1}{2} \times 4\frac{1}{2}$ inches. I cut a semi-circle out of one end of this to fit around the boss on which the lower film sprocket is located.

My next step was to remove 1 inch of steel from the bottom at left and gradually flair it back to within $1\frac{3}{4}$ inches of the top of the plate. This will allow the machine to be tipped forward.

Next, starting at the bottom of the plate, I cut a 90-degree included angle slot extending upward for $2\frac{1}{2}$ inches, and located from the right hand side of the plate $1\frac{9}{16}$ inches to center of slot. This is to accommodate a Holmes Sound-lens. This is identified in the picture by No. 1 on photograph.

Next, $3\frac{1}{4}$ inches from the bottom of the plate to center, and directly in line with the slot, I bored a $\frac{3}{4}$ -inch hole to which I fitted a piece of drill-rod which was $\frac{3}{4}$ -inch round $\times 2\frac{1}{4}$ inches long, and bored out to accommodate a peanut-type baseless photoelectric cell. A slit was machined in the bottom end for the beam of light from the sound-lens to travel through, and this end was a press fit into $\frac{3}{4}$ -inch hole in the plate. This was then hardened and given a high polish. (No. 2.)

Next $\frac{3}{4}$ inches from the top of the plate and $\frac{3}{4}$ -inch from the right-hand side to center, I drilled and tapped a $\frac{3}{8}$ -inch 24-thread hole for the shaft-bearing of the film stabilizing drum. (No. 3.)

This shaft is of $\frac{7}{32}$ -inch drill-rod and is $4\frac{3}{8}$ inches long, with a 32 thread on each end. The bearing for this shaft is of $\frac{3}{8}$ -inch bronze and is $3\frac{13}{16}$ inches long. Both ends are threaded with a $\frac{3}{8}$ -inch 24-thread. When the plate is fastened to the projector the $\frac{3}{8}$ -inch 24-threaded hole is spotted through to the casting of the projector, and this hole is then drilled straight through the machine. At assembly, the bearing-shaft which had of course a $\frac{7}{32}$ -inch hole through it, and the inside of this hole was relieved with a small boring bar to within $\frac{3}{4}$ -inch of each end, was pushed through the hole in the projector and screwed into the hole in the plate, after which a knurled brass nut was screwed onto the rear of the shaft up tight against one back-plate.

I then made up the film stabilizing drum of brass, 1-inch in diameter at the large end which is a flange $\frac{1}{16}$ -inch thick, the body being $\frac{7}{8}$ -inch in diameter, and the hole being $\frac{9}{16}$ -inch thick. This was mounted on the front end of the shaft and the film stabilizing flywheel on the other end on the left side of the projector.

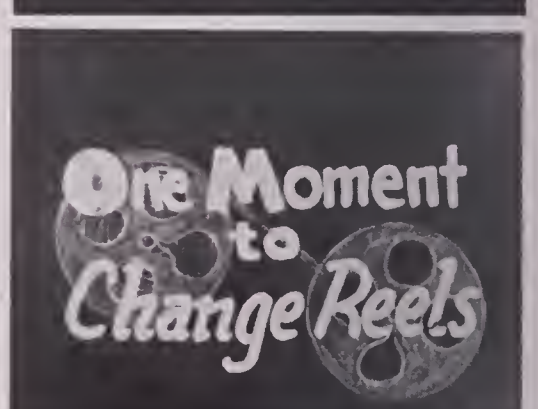
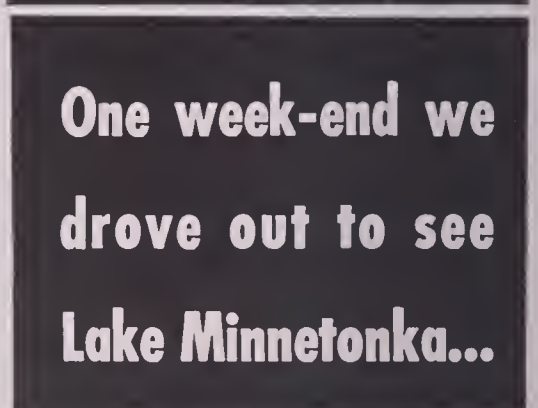
This flywheel was made of brass and is $2\frac{1}{4}$ inches in diameter and $\frac{3}{4}$ -inch thick. The machining of the stabilizing flywheel, film-drum and bearing must be done very accurately as the slightest wobble will be enough to ruin the sound in the finished machine.

The next step was to remove the bottom take-up sprocket and to replace it with a precision machined sprocket that can be purchased from several companies that specialize in replacement parts for 16mm. sound-on-film projectors. Nearly all 16mm. sprockets are standard.

After I removed the take-up sprocket, I tested the shaft with an indicator and found that it had a run-out of about .004-inch. I was able to straighten it with a brass hammer without removing it from the gear-box.

The old sprocket was then put on an arbor and the teeth turned off and a film roller made from it. This was mounted at the left-hand corner of the plate. I purchased from the local Kodak dealer a film shoe the same as those mounted against the top and bottom sprockets. This is mounted against the roller as if it were a sprocket. (No. 4.) This roller is mounted to the left and directly in line with one photocell housing, with $1\frac{1}{8}$ inch between centers. When all the parts are assembled they

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The How and Why of Titles

By JAMES R. OSWALD

PERHAPS one of the greatest faults of the average amateur movie is the absence of a pleasant blending of scenes or sequence arrangement. This continuity angle should always be taken into consideration at the time of filming, if it is at all possible to do so. Thus a natural relationship can be built up between successive shots, with soothing transitions joining the scenes. Even the simplest of home-movie cameras is capable of producing fades—a fact which is frequently overlooked. A fade-out, used at the conclusion of a sequence, is produced by gradually reducing the amount of light reaching the film. This is accomplished by merely rotating the lens-barrel, with the camera running, from the point of proper exposure to the closing point of the diaphragm, which is simply a “curtain” that regulates the intensity of light entering the camera. A fade-in introduces a new sequence and is made in exactly the reverse fashion . . . that is, the diaphragm is gradually opened from a closed position to the point of proper exposure for the particular subject being filmed.

But even though continuity has been shamefully neglected in filming, there is still much that can be done with present, completed films. Don't be like many enthusiasts, with a tendency to leave the reels in the exact sequence in which they were shot. Rearrangement of individual shots in a more logical order will make a world of difference. Occasionally this is not enough, however. If the scenes are totally unrelated, and yet too good to be left out, a more drastic means must be used to “bridge the gap.” In such a case it is a definite advantage to insert titles.

Titles are used for identifying time,

location, subject-matter, and a host of other things. They range from simple wordings on plain black backgrounds to be complicated multiple-exposures with motion picture backgrounds. Obviously, each type title has its place, but for our purpose we'll stick to two or three of the simpler types, which most amateurs are inclined to use.

Probably one of the most clever and least boring styles of title is one which is hardly recognized as such: the “natural” title. For example, a clock or calendar to denote time, a road-sign or section of a map to indicate location, a milestone to show distance travelled, etc. Such objects are easily photographed without any special title-making equipment, save possibly a close-up or portrait lens, and require no art-work whatsoever.

Next comes the regular printed or hand-lettered title. With these, the wording is either typewritten or printed on a card or even a snapshot, and photographed with one of the many title-making apparatuses on the market. If you are artistically inclined, there is no limit to the possibilities of this type of title. Those who do not feel ambitious enough to do their own work can take advantage of the numerous professionally made “stock” titles in both 8mm. and 16mm. sizes. Made-to-order titles from your own copy can also be had at a nominal cost.

If you are adept at developing and printing your own snapshots, there is no reason why you shouldn't find enjoyment in making and developing your titles. Short lengths of movie film can be handled in your own darkroom, the same as roll film. Low-cost, positive

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For main and end titles, decorative lettering with painted or photographic backgrounds are effective, but for subtitles (third from bottom), a simple lettering, preferably in black, is preferable. Style of type shown is Kabel Bold.

AMONG THE MOVIE CLUBS

Films to Show To Service-Men

An increasing number of amateur movie clubs all over the country are putting on movie shows for service-men — sometimes in big camps and metropolitan USO Centers, and sometimes individually, to small, isolated groups like barrage-balloon, searchlight and anti-aircraft gun squads whose duty prevents leaving their posts except at long intervals, and which are too small to be reached by the regularly organized entertainment services. These patriotic movie-makers are performing this very necessary service on their own time, using their own projectors, gas, tires and films—which latter they have often purchased with their own money.

The crux of the matter is film—film which the boys at these posts haven't seen too often already. Most of these volunteer 16mm. showmen have built libraries of entertainment 16mm. sound-films—but when, as is the case with one group we know, a club has an Army showing from three to six nights every week, at posts where the same men are stationed almost permanently, it doesn't take very long to have shown *all* the films available.

This problem would be a lot simpler if the various clubs and other organizations throughout the country could from time to time exchange their films, for what Long Beach has screened to the point of boredom might be new to Syracuse or Miami, and vice-versa.

Therefore we urge the people responsible for these showings to send us a list of the entertainment type 16mm. sound-films they have available. If a sufficient response is received, we will publish a directory of these films and the sources from which they are available in a forthcoming issue of this magazine. If the supply of films does not warrant publication, we will send copies of the complete listing to those who contributed. How about it—?

"Victory Vacation" For St. Louis

A timely feature of the April meeting of the Amateur Motion Picture Club of St. Louis was the screening of Member Rasmussen's 1942 vacation film, appropriately titled "Victory Vacation." This 400-ft. 16mm. Kodachrome picture was filmed entirely within a radius of 150 miles of St. Louis. Going a bit farther afield, new-member F. B. Guerin showed how well his much-envied Bolex 8 worked with a production entitled "Missouri

State Parks and Springs," an excellent travelogue of the Ozarks. As if to whet the members' appetites for post-war traveling, a 1200-ft. Kodachrome sound-film of the Rio Grande Valley in Texas was shown by courtesy of the Missouri Pacific Railroad.

A surprise feature was an unannounced screening of an unusual film from the library of THE AMERICAN CINEMATOGRAPHER, "Garden Life," by Eugene L. Ritzmann. This picture, in 16mm. Kodachrome, shows flowers actually growing (by means of stop-motion photography), and was greeted with a hearty round of applause from the members.

HOWARD B. PARSONS,
Vice-President.

Varied Show For L. A. Cinema

The April meeting of the Los Angeles Cinema Club featured an exchange showing of two top winners from the L. A. 8mm. Club's recent Annual Contest. These were "Those Were the Days," by John E. Walter (See AMERICAN CINEMATOGRAPHER, January, 1943, P. 18), and "Two Weeks' Rest," by Bill Wade. Specially shown also were "Wonder Film," an unusual picture on and about 8mm. by the ever-original Joe Hollywood, of New York's Metropolitan and 8mm. Clubs, and "Vegetable Follies," a unique short (200 ft. 16mm. Kodachrome) by Carl Anderson, both loaned through the courtesy of the Editor of THE AMERICAN CINEMATOGRAPHER.

EARLE MEMORY, President.

Lighting For Tri-City

The April meeting of the Tri-City Cinema Club of Rock Island and Moline, Ills., and Davenport, Ia., featured a talk on "Indoor Lighting for Your Home Movies" by Orrin Stribley. On the screen were two films by Dr. Dunn, "Sauk and Fox Indians," and "William Tell—the Dramatization of a Struggle for Liberty." This "program piece" consisted of two decidedly unrelated shorter subjects in 16mm. Kodachrome, mounted together on an 800-ft. reel and presented with a sound background from records. Two of the latest OWI 16mm. sound-films, "Conquer by the Clock" and "Paratroops" were shown through the courtesy of Harry Lytle.

WILLIS F. LATHROP,
Secretary-Treasurer.

Synchro-Sound For 8-16

Program for the April meeting of the 8-16 Movie Club of Philadelphia included a demonstration of the Synchro-Sound device for keeping disc records in perfect sync with their pictures. Len Bauer, who conducted the meeting, has had considerable experience with this mechanism, having used it to excellent advantage in the picture with which he gained First Prize in the recent Gold Cup Contest. As

On Its Way

Those who might have suspected that actress Carole Landis' offer of her own new 16mm. sound-projector for use entertaining troops overseas, as published in last month's issue of this magazine was strictly publicity may be interested to know that Miss Landis' projector has been presented to the 6th Armored Division of the U. S. Army, and is on its way to where both the projector and the men it will entertain will do the most good.—Ed.

a practical, "how - it - works" example, Bauer's demonstration featured the actual making of a sound record to accompany a projected 8mm. film. The second portion of his demonstration consisted of a demonstration of interesting new Kodachrome title-making ideas. On the screen were shown "Solar Pelexus" and "Moods of Nature," from the library of THE AMERICAN CINEMATOGRAPHER.

Plans are being made for an inter-club movie-making contest. As the plans stand now, a story-idea will be chosen jointly by the various clubs. Each group will then work out its own scenario from that basic idea, and film it, with a suitable trophy going to the winning club. All movie clubs on the 8-16 Club's mailing-list are invited to participate. They, or any others interested, may write Secretary John Henrick, 2819 N. Warnock St., Philadelphia, for fuller information.

FRANK HEININGER.

Long Beach Exchanges

At the April 7th meeting of the Long Beach (Cal.) Cinema Club, a delegation from the Los Angeles 8mm. Club came down to present the three top winners in their annual contest—an exchange of courtesies repaying a visit by the Long Beach group at the 8mm. Club's March meeting, with the three top 8mm. winners in the L.B.C.C. contest. The films shown by the L. A. 8's were "Those Were the Days," by John E. Walter; "Jungle Parade," by President Fred Evans, and "Two Weeks' Rest," by C. Wm. Wade. Also shown were "Sun Valley," 100-ft. 16mm. Kodachrome by L.B.C.C.-er Herbert Goodall; "Grape Production," 800-ft. 16mm. Kodachrome, by Alfred Lion, of Fresno, showing the workings of the grape and raisin industry; "Wonder Film," by Joseph F. Hollywood of New York's Metropolitan and 8mm. Clubs, and a production sent by the Omaha, Nebraska, Amateur Movie Club.

LORIN SMITH, Secretary.

Lens Lecture In Indianapolis

The April meeting of the Indianapolis Amateur Movie Club featured a very enlightening discussion of testing projection lenses, accompanied by a well-planned lecture by member G. A. Del

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Valle. He also explained and demonstrated the difference between coated and uncoated lenses. On the screen he showed two direct-16mm. single-system sound-films he had made: one showing his son Billie's second birthday party, and the other, a reel of the Club's recent Annual Banquet, shown with a running commentary from the sound-track.

The staff for the Club's 1943 production has been picked, and includes: Director, E. M. Culbertson; Assistant Director, Roger Sneden; 16mm. camera-crew, Dr. W. E. Gabe, assisted by Al Kaufmann; 8mm. camera-crew, Roger Sneden, assisted by C. Wetzell; Lighting, Paul Bradley, Carl Luethge, Oscar Peters; Properties, Bill Locey, W. Worl, Jim Makin, Dr. H. Collins and Dean Smith; Script-girl, Mary Culbertson; Editing, Members Culbertson, Sneden, Thomas and Gabe; Casting, Members Collins, Reynolds and Vic Maier. The production is tentatively titled "You Can't Win," and is scheduled to run 400 feet of 16mm. Kodochrome when finished.

ELMER M. CULBERTSON,
Corresponding Secretary.

Philly Starts 8th Year

The April meeting of the Philadelphia Cinema Club started that club's eighth year of movie-making activity. Following the election of officers, the results of which were announced last month, the new administration announced three new committee chairmen, as follows: Program, Adolph Pemsell; Technical, Dr. Robert E. Haentze, and Membership, Herbert E. Moore. The evening's screen program included a number of members' films, and an excellent instructional picture from the Harmon Foundation, entitled "Your Camera." This latter was followed by talks from several of the more advanced members on the subject of camera equipment.

On April 19th, the Club was scheduled to visit the Norristown Club and present the evening's program, as a part of the inter-club activities which have been arranged among the several cine clubs in the Philadelphia area for the coming year.

FRANCIS M. HIRST.

Photography of the Month

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camerawork, but the aerial scenes and special-effects and miniatures as well.

Judged in that light, he has done an exceptional job on this picture. The aerial camerawork—done in only two shooting days—ranks with the best; his "production" camerawork is as good as can be expected when he was given a ten-day schedule and sets that consisted almost entirely of flats and backings. His special-effects work is decidedly good. His treatment of the players is adequate, though not the best we've seen him do, and his handling of the few scenes where he had anything like

photogenic sets or locations to work with indicate this young cinematographer is rapidly approaching the time when he will be ready for a better 'break' on a bigger production.

SPITFIRE

Goldwyn-RKO Release.

Director of Photography: Jack Hildyard, A.C.T.

This story of the development of England's most famous fighting plane, the Spitfire, is well worth seeing, not only dramatically but photographically. For years we have come to expect from European cinematographers brilliant work on individual scenes, but a definite lack of uniformity from scene to scene and sequence to sequence throughout the production. "Spitfire" is the first British film we've seen that cannot be subject to that criticism, and it marks Jack Hildyard as decidedly the coming star of British cinematography. His work, as shown here, would be "A-picture" photography in Hollywood or anywhere else.

PILOT NO. 5

Metro-Goldwyn-Mayer Production.

Director of Photography: Lt. Paul Vogel, A. S. C.

This is one of those typically-MGM jobs of camerawork that are so smoothly and effortlessly done that they're likely to slip by unnoticed. As one of the last pictures Paul Vogel, A.S.C., made before his enlistment as a Signal Corps cinematographer, it deserves more credit than that, for it is excellent in every department. Vogel had a difficult assignment in this, too, for as the story is told in cut-back form, beginning with a small group of fighting Americans and Dutch in those last, tragic days in Java, and cutting back ten or fifteen years to relate the story of "Pilot No. 5," the picture has to coordinate a decidedly wide variety of moods and photographic treatment. Vogel does this so excellently you're scarcely conscious of the photographic difficulties involved. At the climax, miniature-expert Don Jahraus and some uncredited special-effects cinematographers provide some more unusually fine marine battle miniatures.

THEY CAME TO BLOW UP AMERICA

20th Century-Fox Production.

Director of Photography: Lucien Andriot, A.S.C.

A story like this of espionage and counter-espionage is a cameraman's meat, and Lucien Andriot takes full advantage of it. Throughout, he makes excellent use of the modern increased-depth technique, and handles his predominantly strong, realistic lightings excellently. Some of his compositions are of particular dramatic effectiveness, too. In a film like this, the players are, generally speaking, rather secondary to dramatic mood, but he does very well by them, as might be expected of a cinematographer of his taste and ability.

THE YOUNG MR. PITT

20th Century-Fox Production (British.)
Director of Photography: Frederick Young, F.R.P.S., A.C.T.

This picture offers further evidence (if any is needed) of why Fred Young is rated as the top British cinematographer. His lightings, both of sets and of players, and his compositions, could scarcely be surpassed here in Hollywood. Some of his scenes of individual players—particularly in the portrait-like closer shots—are delightful, while his long-shots are a richly pictorial contrast to our own "rationed" sets.

Some fault can be found with the slight scene-to-scene variation in densities and general mood—which was certainly not helped by the dupe released here—but in view of the other excellences of the photography, these can well be overlooked. The crediting of the famed portrait photographer Cecil Beaton for set-design and decoration is interesting, as is Carol Reed's excellent, if slow-paced direction. But we'd recommend reading up a bit on English history before seeing the picture.

LUCKY JORDAN

Paramount Production.

Director of Photography: John F. Seitz, A.S.C.

As a picture, "Lucky Jordan" isn't particularly pretentious, but from the photographic viewpoint, director of photography John Seitz, A.S.C., has made it a joy to see. For years Seitz has been recognized as one of the really great masters of the camera, but for some time he has not had many opportunities to distinguish himself.

In "Lucky Jordan," he has—and he does so with a smooth sureness which makes it a picture you'd like to see again, so you could concentrate on enjoying Seitz' compositions and lightings.

AID RAID WARDENS

Metro-Goldwyn-Mayer Production.

Director of Photography: Walter Lundin, A.S.C.

It's a nice thing to see the name of Walter Lundin, A.S.C., on the screen again in a major feature. Ordinarily, a Laurel and Hardy comedy isn't exactly the place you'd go looking for good camerawork, but surprisingly, Lundin sandwiches in a surprising lot of it between the stars' gags. Wherever possible—notably in the closer shots of some of the other players—Lundin manages to get in some really pleasing "feature" camerawork. Yet when the comics are doing their stuff, his long experience making Harold Lloyd's famous laugh-makers stands him in good stead, and not a single laugh is lost. The gags are worth study, by the way; some of them as examples of the best silent-picture comedy of fifteen years ago, and others as the more modern (if sometimes less amusing) verbal comedy too prevalent today. Wonder why someone doesn't make an "all-out" revival of the strictly visual comedy of the days when Sennett, Lloyd, Laurel and Hardy, and others,

There may be
Fewer Pictures
and
Better Pictures

Certainly, then —
The Better Pictures
are photographed with
EASTMAN
NEGATIVES

Because
there will never be a
BETTER NEGATIVE
unless it's made by
EASTMAN

J. E. BRULATOUR, Inc.
DISTRIBUTORS
EASTMAN FILMS

were making the world laugh at their pantomimed antics—?

SOMETHING TO SHOUT ABOUT

Columbia Production.

Director of Photography: Franz Planer, A.S.C.

Franz Planer, A.S.C., has given this thoroughly routine backstage musical a much better photographic mounting than it deserves. He has not had very much in the way of photogenic opportunities with which to work, but when these opportunities arise, he does them abundant justice. Meantime, he treats the players very well indeed. In all of this he was handicapped by one of the worst laboratory jobs we have seen in several years—one which makes us wish we could see a really good print of the production so that we could judge Planer's work more fairly . . . assuming, of course, that we could bring ourselves to sit through the trite story and unnecessarily blatant sound-track and shouted dialog again.

THE MEANEST MAN IN THE WORLD

20th Century-Fox Production.

Director of Photography: Sgt. Peverell Marley, A.S.C.

This picture, one of the last photographed by Pev Marley, A.S.C., before he joined the Army Air Force, hardly represents his best work, but throughout it shows clearly his photographic skill. He handles his camera and lightings with a deft smoothness which lifts the picture considerably above the usual conventional comedy treatment.

Milt Krasner

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and cents, no school could have afforded the huge production investment which gave me my real training in practical cinematography. And without that practical experience I couldn't have learned. None of us could.

"That diversified training came in handy when I finally got my break as a First Cinematographer. Do you remember how, ten years ago, Charles R. Rogers was making himself a bit unpopular on the Paramount lot by turning out, independently, program releases for them, using their stars and their studio facilities, but at a cost a good deal less than half of what they could do it for—?

"Well, I had worked with Mr. Rogers before, at the old First National and elsewhere, and he had confidence in me and in what I could do. I worked for him on several of these pictures, as Operative Cameraman for Henry Sharp, A.S.C., and others, and finally Mr. Rogers decided I was ready for a chance shooting First Camera for him. So he promoted me—it was on an unimportant little picture called 'Strictly Personal'—and while, looking back on it, I don't think I did any too well, at least it suited Mr. Rogers, and was reasonably good and done very fast. So

I stayed on as a First Cinematographer."

He stayed on at Paramount, too, for several years. Then one day when things were slack at Paramount, he got a call from MGM . . . he went out to the Culver City plant for one picture—and stayed for more than ten months before leaving for Universal, to answer a call from his old chief, Charles Rogers, who was then Universal's production head. And there he has been ever since.

His work there has included a good bit of everything from program films and chillers to some of the studio's biggest productions . . . and he has taken all of it in his stride, with a clearly perceptible professional growth. It was through his camera, for instance, that Abbott and Costello first came to the screen in "Buck Privates." And at the other end of the photographic scale he has made such pictures as Frank Lloyd's "Lady from Cheyenne" and "The Spoilers," the latter starring—and satisfying—the photographically-hard-to-please Marlene Dietrich; and Walter Wanger's "We've Never Been Licked," and the Technicolored "Arabian Nights," which proved so strong a contender for this year's Academy Award for Color.

Krasner feels strongly that it is a cinematographer's professional duty as soon as he reaches the point where he is known and sought after, to see to it that he does not have to do too many pictures a year, and that he have the privilege of choosing his stories at least as freely as a director or player of equal standing.

"There's a double reason for that," he says. "First of all, it keeps me at my best, physically and mentally, so I can give my best to each picture I photograph. Second—and maybe more important in the long run—if I decline a picture because I don't like the story, or because I feel I need a vacation before taking on another assignment, it's going to give somebody else a chance at it. Maybe somebody who is just itching for something just a little better than he's been doing, but who never would have had it if the studio had been able to persuade me to do it. And that's likely to give the industry another 'A-picture' cameraman . . . or rather, let them discover that ability in someone they've just never given the chance to show it.

"I feel pretty darn strongly on that point. My own experience as an Operator and as a 'B-picture' director of photography has convinced me that there's an awful lot of good, first-string talent going to waste in those categories, just because most of the industry is afraid to give them a chance . . . because so many producers demand the security of established 'names' to photograph their big pictures. Well, these last ten years we've seen a lot of those established photographic 'names' killed off from sheer overwork. Yet somehow the younger fellows who have come up take their places, whether by promotion from operative jobs or promotion from 'B-picture' oblivion, have managed to do

just about as well, haven't they—?

"On the other hand, I don't mean that the fellows who get up to where they can pick and choose their pictures should try to specialize on any one type of picture, or on working with any given star, director or producer. Any cameraman worthy of the name should be able to do any sort of picture with equal facility.

"And he shouldn't let himself be scared away by the report that this star is hard to photograph, or that director or producer tough to work with. If he approaches the assignment open-mindedly, and with the right kind of ability (not trying slavishly to imitate what he's seen other cinematographers do with the same star), he's likely to find, as I have on several occasions, that the assignment he thought was going to be difficult is actually easy and pleasant. Instead of being unequal to it, he may even find himself being praised for having done better than many another fellow with a bigger name!

"But about that business of specialization—I'll have to take part of it back. A few months ago I finished by first Technicolor picture, and before long I'm due to start another. And if I had to specialize in anything, I think I'd like it to be color. Despite all these years of rumors about the difficulty of color camerawork, I found it surprisingly easy—easier, even, than black-and-white. And it's so much more gratifying on the screen, and so much more filled with as yet unattained possibilities, that I'll admit I'd like to do more of it . . . to explore more of the artistic and technical possibilities of what is, I am sure, the coming medium for truly expressive camerawork." END.

Desert Victory

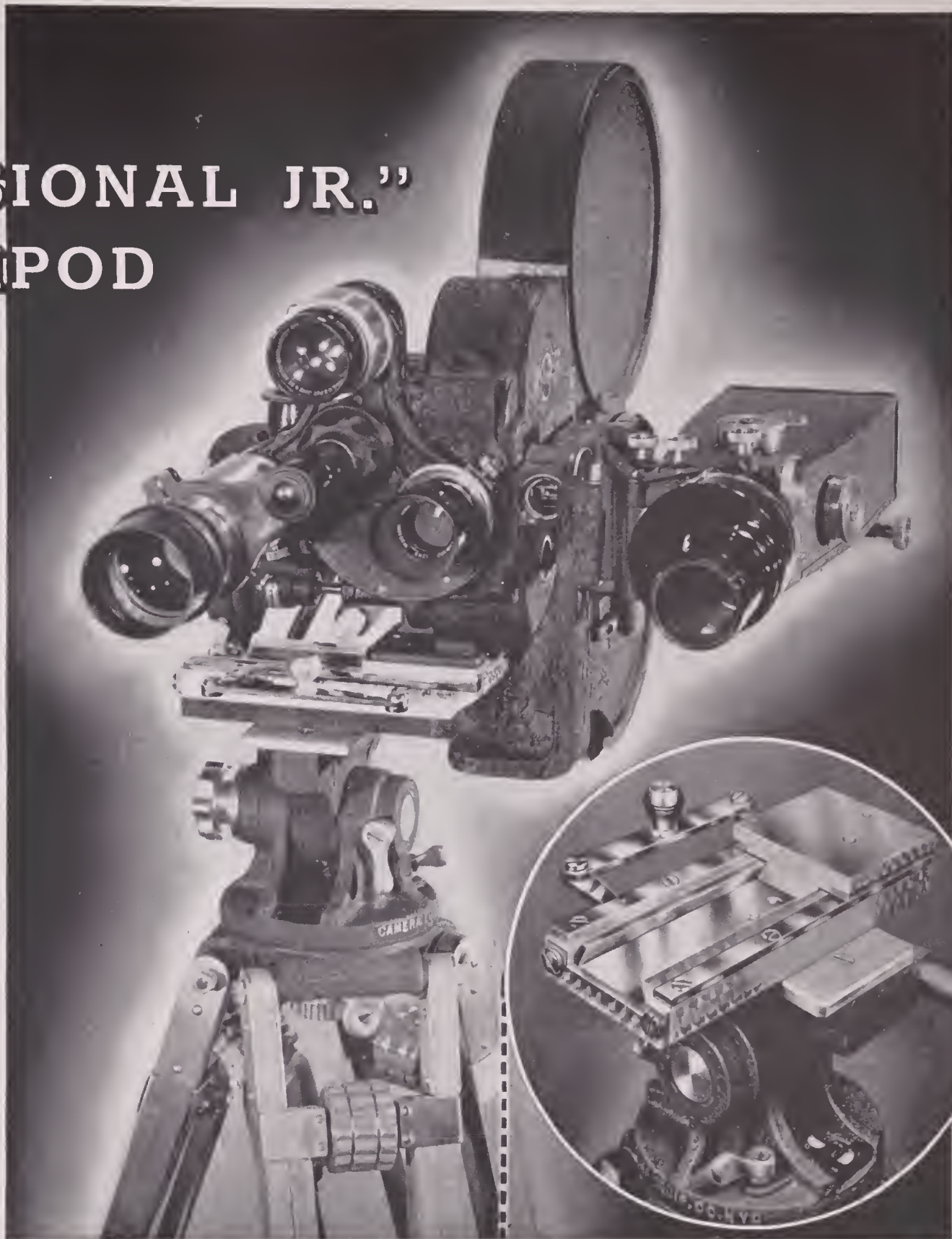
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are none the less of the greatest importance in making the work of a combat camera unit of practical worth.

Out in the Middle East, we had a rather large territory to cover. GHQ was in Cairo, and from there our territory not only extended west to the firing front in the Western Desert (which ultimately came to mean a distance of over 1400 miles, as Rommel was driven back!), but westward in the Mediterranean to Malta and Cyprus, eastward to Jerusalem, Bagdad and, eventually, Teheran in Persia. To the north, we had to be ready to film anything along the Turkish and Russian frontiers, and when we first got to Egypt, our responsibilities also extended southward to Eritrea and Ethiopia, until the Italian forces were removed from those parts, and there was no more news to cover. On the map, this area may not look so large: but it actually measured more than 2200 miles from east to west, and 2,000 from north to south. In other words, it included an area about like the Western part of North America from Los Angeles to Chicago, and the entire Pacific Coast from well above Vancouver to a point

'PROFESSIONAL JR.'

TRIPOD



The B & H Eyemo camera shown here mounted on the "Professional Jr." Tripod and Shiftover has been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

Unsurpassed in Quality, Versatility and Rigidity

★ The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this 14 lb. superfine tripod. The top-plate can be set for 16mm. E.K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Jr." Tripods and Cameraquip Shiftover Alignment Gauges are used by the U. S. Navy, U.S. Army Air Bases, Signal Corps, the Office of Strategic Services and other Gov't Agencies—also by many leading Newsreel companies and 16mm and 35mm motion picture producers—for important work.

SHIFTOVER ALIGNMENT GAUGE

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking-device.

★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base — and is provided with dowel pins which position it to top-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

several hundred miles down into Mexico's Baja California. And we couldn't be too sure when some newsworthy action might suddenly "break" at any point in or adjacent to this area!

The solution, of course, was to station still and movie camera crews at strategic points, planned so that they could get quickly to any area where action was likely to occur, and to back these field units up with a string of bases at which replacements, still laboratory services, and the like, could be set up, and from which stills and movies could be expedited to GHQ at Cairo, at which base the latter could be processed, and the former put on the radiophoto for quick transmission to London.

The laboratory bases were located at Malta and Cyprus in the Mediterranean, and at Beyrouth in Syria, Jerusalem in Palestine, Bagdad in Iraq, and Teheran in Persia (Iran). From these bases we had camera crews stationed farther out at Aleppo, Alexandria, and other advanced points as needed, including, at first, points in Eritrea, Italian Somaliland, Ethiopia, etc.

So much for this basic coverage! Our main activity, like that of the 8th Army, was to be in the Western Desert as Generals Alexander and Montgomery tried conclusions with Rommel.

In this, our organization-plan was laid out along more strictly military lines. An army must have a fixed base of command, supplies, replacements, and the like; so did we. At GHQ in Cairo we had our own headquarters base, with all that this implies. There was located my own headquarters and that of my staff officers, from which all the activities of the unit were directed. It was there that our motion picture films were developed, printed, and edited, and the "rushes" screened.

For the laboratory work, the Cairo branch of the Eastman Kodak organization put its entire 35mm. section completely at our disposal. In addition to the 16mm. facilities usually found at Kodak branches, this plant also had a completely equipped set-up for developing 35mm. negative and positive (on an excellent machine, by the way), and for print-making, and the like. We simply moved in and took this section of the plant over, staffing it, where necessary, with our own technicians. I might say at this point that here, as elsewhere, the Kodak personnel gave us invaluable cooperation, even excelling that to which most of us have been accustomed to in normal civilian production.

Also at Cairo GHQ were our still picture-editor, who functioned about like the editor of a big newspaper service, deciding which stills were newsworthy, providing captions, and getting them sent to the appropriate military and civilian outlets. There, too, were our staff of cine film-cutters, our equipment office, the clerical staff, projection facilities, and the like.

From GHQ westward our operational organization extended toward (and often beyond) the fighting front. The first subdivision, and the point where I gen-

erally made my headquarters, was at the Field Headquarters of the 8th Army, from which General Montgomery directed the battle. There, in addition to such commissioned officers as might be necessary, we kept always a reserve of cameramen, to provide replacements as needed for more advanced units. There, too, we maintained our field repair-shop, in mobile mechanics vans staffed by two sergeant-mechanics, both of whom were highly skilled in the repair and maintenance of both cine and still cameras. We also kept Army H. Q. supplied with replacements of equipment and film.



Hauling an Eyemo up to an observation tower for a long-shot of a port town just captured from the "Eyeties."

From this point, our line of photographic communications paralleled that of the Army, branching out and downward through the usual military command subdivisions to the firing front proper. At each point would be stationed men who could serve as replacements for the front-line units when necessary, and who would see to it that film returned from the front would be routed back to GHQ as fast as possible. At Division or Brigade HQ would be our Section Leaders—commissioned officers whose responsibility it was to see to it that the men under their command from there to the front had everything they needed to function properly, and that their still and movie negatives were gotten back to GHQ as fast as possible.

For the front-line camerawork itself, our chaps worked in two-man teams—one cine cameraman and one still photographer. At the start, we had tried to economize, and have one man shoot both the movies and stills. It didn't work. If he did a good job on the movies, he would likely miss the really important still shots; if he got the stills, he was likely to slight the movies. Therefore, the two-man combat-camera teams of specialists.

One of the biggest factors in successful military camerawork, especially in regions where, as in the African Desert,

operations are so extremely fluid, is transport for your front-line camera crews. It always is, for transport, next to water, is one of the most valuable things in desert warfare.

At the start, we had our full share of trouble in getting transport. But after a little while, when some of our first films had to come back to show the authorities how valuable they could be, we managed to make ourselves self-sufficient in this respect. Every combat-camera team, and all of the officers, had their own transport—a jeep or a truck—and that way we were able to keep up with the front-line operations of the army.

From the front, exposed movie and still film was routed back to GHQ by the fastest possible means. Usually this meant motorcycle riders for the first few laps of the trip, and then by plane to GHQ from Corps or Army headquarters. We did rather well at this, too. For example, when the battle started with the big barrage against the German positions at El Alamein, we got our first stills of the artillery firing at about 11:30 at night. By 9:30 the negatives were in the laboratory in Cairo, and as soon as they were dry they were put on the wire-photo and radioed to London, where the pictures appeared in the papers that same afternoon! Later on, as distances stretched out and operations became more fluid, this communications problem grew more troublesome, but our lads did remarkably well at keeping supplies, equipment and personnel replacements and fresh and exposed films flowing constantly in both directions.

For field service, our camera equipment had to be light and rugged. Our still photographers were therefore supplied with Zeiss Ikontas, and our movie men with De Vrys, and a few Eyemos. The Eyemos were scarce, and so I would estimate that around 95% of "Desert Victory" was ground through our De Vrys, whose performance and ability to stand up under gruelling desert punishment constantly surprised us.

When the big push started at El Alamein on the night of November 23 last, we had twenty-six enlisted combat cinematographers and six officer section-leaders spread out with the army along the front, in addition to the chaps cooperating overhead in the R.A.F. Film Production Unit. When we reached Tripoli 80 days later, our chaps were still with or ahead of the army units, but we'd had severe casualties: four of our cameramen had been killed—one officer and three enlisted photographers; one officer and six photographers had been wounded, and two officers and four photographers had been captured; in other words, seventeen good lads out of a starting force of thirty-two. But those chaps, together with those who survived and the others who came forward as replacements, brought back 200,000 feet of absolutely authentic battle films, and innumerable stills to show the world just what desert warfare is like.

And I want to make it very clear that the real credit for whatever merit "Des-

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ert Victory" may have is due entirely to those young chaps who filmed and fought and bled and died in the desert making it. The rest of us saw to it that they had the film, equipment and personnel replacements they needed, and that their exposed footage got back for processing as promptly as possible. We edited their footage and tried to form the cream of it into a cohesive picture. But the lads with the cameras at the front really made "Desert Victory."

Those chaps were without doubt the bravest I've ever seen. They went against the enemy with both guns and cameras, and the material they brought back with their cameras was priceless. And let me tell you, it takes something more than just ordinary courage to keep grinding calmly and efficiently with a camera when somebody four or five miles away is sending over things that go off with a Hell of a bang when they land—and hurt, too.

During the preliminary training, we had stressed two or three things rather heavily. Not only such photographic essentials as "no panning," but other equally important maxims for combat camera work. For one thing, we'd rather rubbed it in that there were to be damned few shots of our infantry from the rear; once in a while a shot like that may be useful to show what our chaps were advancing into; but speaking generally, the rear elevation of one infantryman is a good deal like that of any other, and when the audience has seen the back of one soldier's neck, it's seen them all. The really dramatic thing is to see our lads as the enemy do—coming at one head-on, with rifles at the ready and bayonets set.

Then we'd emphasize the importance of getting the shots of action as close as possible. As we were rather short on telephoto lenses—the longest we had was a six-inch, and some cameras had only fours—this meant that the man with the camera had to get in rather close, too. When we issued our camera-crews their side arms—.38 revolvers—we told them that when they got close enough to Jerry to use those rather short-range weapons on him, then was the time to start shooting film! That's what they did, too.

We tried to give them some hints on what you might call the artistic side of desert battle-photography, too. Deserts, as such, are rather uninteresting places photographically, and present a rather drab outlook of bare sand and rock and scrubby brush. The fact that a thousand yards or so out there may be a Jerry tank burning may be dramatic in itself, but it isn't very photogenic. But if you can get some sort of a foreground-piece to make your composition complete—one of our guns firing, some of our chaps taking cover behind a tank, or even just a bit of a burned-out tank or lorry in the foreground—you'll have a much better picture.

Putting all of these admonitions into action, our lads from the Film and Photo Unit necessarily had to spend a good deal of their time considerably nearer the enemy than they were to our own

forces. As a matter of fact, we beat the army into Tobruk by a matter of an hour and a half, and in the scenes that show the Swastika coming down, and the Union Jack being run up, the "actors" were members of our camera unit.

That, incidentally, meant going through the mine-fields before our sappers had cleared a way. Those land-mines are nasty things at best. They're buried by the hundreds, just a few inches deep in the sand. Sometimes they go off the first time a man steps on them, or the wheel of a car or a tank rolls on one; sometimes that initial pressure simply starts off a clockwork mechanism which clicks off a mechanical count as man after man or vehicle after vehicle passes over unharmed—and then lets go explosively when the 39th or the 47th or so goes over.

Booby traps are another unpleasant hazard. When Jerry's leaving a place, he leaves something he knows is desirable, and wires an explosive charge to it. Binoculars, for example, are invaluable in desert warfare—and I suppose soldiers are soldiers no matter what uniform they wear. When Tommy glances into a building recently abandoned by the Jerries, and sees what looks like an excellent pair of Zeiss binoculars peering out from under an old coat, he's likely to appropriate them for his own use. When he picks them up a nice little mine blows up—and with it Tommy, and as many of his friends as may be about.

We lost quite a few of our chaps with mines and booby traps. Going into Tobruk, for example, we lost two fine lads. A mine blew up under one of our jeeps, and a Sergeant-Photographer was killed, while his driver was tossed 30 yards and very badly wounded.

In connection with the way our camera-units preceded the army, I've been interested to note in a recent newspaper account of the first meeting between men of the British 8th Army and General Patton's Americans that the British representative was one of my own Sergeant-photographers!

We encountered some of the German field cameramen, too—as our prisoners. We captured several of them, and quite a bit of undeveloped film from their cameras, and prints of some of their newsreels, as well. Cut into "Desert Victory," they made the picture more complete by showing what was happening on both sides of the lines—close-ups of Rommel and his staff at the front, and at home in Berlin, receiving his Field Marshal's baton from Hitler; shots of the German ground forces in action, and of the Luftwaffe's "Stukas" peeling off and dive-bombing our chaps before the R.A.F. drove them out of the air.

I even had the pleasure of meeting my "opposite number"—the head of Rommel's photographic unit. It was comforting to learn from him that his cameramen had had the same difficulties we had in contending with the dust, the heat, and the monotonous terrain. It was also interesting to learn from him that while the Afrika Korps was advancing, he

used from 30 to 40 cameramen to cover the action, but that after the German retreat began, he reduced his coverage to a mere half-dozen men!

By the time our forces had taken Tripoli, we had somewhat over 200,000 feet of excellent film, which told the whole story of the battle from El Alamein to Tripoli. So I decided to take it back to London, where I could sit down and make a picture out of it. In this I was aided by J. L. Hodson, who collaborated with me on the script, and did the commentary, as well; Capt. Roy Boulting, Lt. Patrick Jenkins, and Sgt. Richard Best, who did the extraordinarily fine job of editing. William Alwyn composed and directed the musical score, and the recording was done on the unit Western Electric had donated to us "for duration." That, by the way, was quite a gift, for they gave us a complete unit of their very latest recording equipment, at no cost whatsoever, and royalty charges only on what footage might be given theatrical release.

In completing the picture, we tried to make it not so much an over-long newsreel of battle shots, or a personalized, sentimental story, but a realistic presentation of all that goes into a big modern military operation, from the first preparation in the shops and factories of the home front, and the training of the soldiers, through the battle itself (with a good explanation of the strategy involved) to the accomplishment of the mission, as shown by an insert of General Alexander's wire to Mr. Churchill, reporting that he had carried out the Prime Minister's instructions to drive the enemy from Egypt and adjacent regions.

In doing this, I think it may be interesting to point out that we found it necessary to "stage" only a very few shots for cut-in purposes. As a matter of fact, the completed picture runs 5400 feet, and the "staged," or as I like to call them, "matched" shots comprise only 179 feet. These comprised close shots made at night during the start of the bombardment at El Alamein. We tried for the real thing there, but shooting actually at night, there was so little light that a great deal of our footage came from the developing-machine with no printable exposure on it. What we had that was printable, went into the picture. The night-effects we had to "stage" for cutting purposes measured, as I have said, 179 feet. So I hope "Desert Victory" will be taken generally for the authentic document that it is.

The picture is now complete, and going into release in this country through 20th Century-Fox. I hope it will give the people of both our countries a better understanding of what our own chaps—Americans as well as British—are going through out there in the African desert.

Meantime the others in my unit, like good picture men, have already gotten well along with a sequel to "Desert Victory." At the last I heard, they had more than 170,000 feet of film showing how our joint forces are pushing Rom-

mel back from Tripoli into Tunisia. I hope that I may get back to Africa before our joint forces push him finally into the sea. But whether I do or not, I know the boys with the cameras are carrying on very well, and the show is being directed very well by four very fine directors of such productions—Generals Montgomery, Alexander, Patton and Eisenhower. With such resources, I am confident we will soon come back with another film which will justify all the nice things everyone I've met in America, from the President down, has said about "Desert Victory." END.

Exposure Control

(Continued from Page 170)

era. This means that it will be necessary to increase the "ground exposure" value by a factor of 2 to get the proper "aloft exposure."

A special computer identical with the Norwood contrast computer mentioned in an article in this magazine (see AMERICAN CINEMATOGRAPHER, April, 1943, Pages 126-127) is used to perform this correction. In using this computer for aerial exposure control, first set the "ground illumination" value on the *inner* scale next to the "aloft illumination" value on the *outer* scale. Next, locate on the *outer* scale the value already found for "ground exposure," which will be identical with the "ground illumination" value. Adjacent to this reading on the *outer* scale, the correct "aloft exposure" value will be found on the *inner* scale. At the same time, the bottom, or contrast-factor scale will indicate the light-transmission of the haze blanket.

Reducing this example to practical terms, let us assume that the "ground illumination" reading is $f:8$, and the "aloft illumination," $f:11$. The computer will then be set as shown in Figure 2, which is self-explanatory.

Selecting a filter for aerial camera-work is naturally greatly aided by knowing the transmission factor of the haze through which the still or movie camera is seeking to penetrate. This information, gained through the meter-readings and computations described above, when coupled with a knowledge of the characteristics of the film being used, will greatly simplify the matter of selecting the right filter for the job.

The same computer can then be used to make the necessary compensation between the unfiltered "aloft exposure" and the final, filtered exposure. Assuming that in the example just cited a filter with a 4x factor is selected. Then—after determining the correct, unfiltered "aloft exposure" as previously outlined—the computer index on the lower scale should be set to 4, as shown in Figure 3. Then on the upper *outer* scale locate the unfiltered "aloft exposure"—in this case, $f:5.6$. Adjacent to this on the *inner* scale will be found the correct (filtered) "working exposure," which in this case is $f:2.8$.

The same basic technique can be applied on missions where some considerable time may elapse from take-off to arrival at the point where the pictures are to be taken, during which period the sun's intensity and angle may change considerably. An initial set of measurements made immediately before take-off and upon arrival at operating altitude will give readings for the ground illumination, aloft illumination, haze factor, and aloft exposure under the conditions then applying. This establishes a known relation between the aloft illumination factor and the haze factor.

Therefore, unless a very considerable visible lessening or increase of haze should take place between the start of the mission and arrival at the place the photographs are to be made, it may be assumed that the haze factor remains reasonably constant. Therefore, a new measurement of aloft illumination, in addition to the factors already known, will quickly give the ground illumination and aloft exposure applying under the changed overall illumination conditions, and the correct exposure can be quickly determined.

It may be mentioned, incidentally, that in making these ground and aloft readings it is advisable to make both readings from the cockpit or navigator's observation post, so that local conditions immediately surrounding the meter may be the same for both readings, and no element of local error be introduced. Should it be necessary to take readings

through an overhead, transparent dome, it is advisable to take one reading (on the ground) beneath the dome, and another one in as nearly as possible the same position outside, in order to derive a figure by which any measurable light-absorption by the material of the dome itself may be measured and, if necessary, compensated for in making the actual operational readings.

Making oblique shots from the air will not generally require the special technique outlined above for vertical airshots, unless the scene is taken from a high altitude and it is definitely desired to show the ground in the distance, through the intervening haze, which then must of course be compensated for. But in most oblique shots, which are generally made from lower levels, a single, simple measurement of light is necessary. This will be simply for aloft illumination, and made with the meter's hemispherical collector pointing in exactly the opposite direction from that in which the camera's lens is pointed. END.

Titles

(Continued from Page 182)

film is undoubtedly the most suitable for this type of title work. In addition to its high contrast, it comes in five different color bases at no extra cost. Titles made on these tinted stocks go very well with Kodachrome films. One thought must be kept in mind when using posi-

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tive film, however: since such film will not be developed by the reversal process, the color-values of the title-cards must be reversed from the way they are to appear on the screen. That is, black printing on a white background will appear on the screen as white printing on a black background, and vice-versa.

Without doubt the most perfect titles, though, are those made on reversal-film of the same type used for the rest of the picture. By this I mean not only Kodachrome titles for a Kodachrome picture, and black-and-white reversal-film titles for a black-and-white picture, but that in monochrome, reversal-film titles should be shot on the same brand and type of film used for the picture.

If you've used, say, Eastman "Safety Film" for your picture, don't try to use Super-X or Super-XX for the titles just because it's faster to artificial light; still less any other brand of film. If you do, there's likely to be enough difference in the thickness of the film to throw your titles out of focus when the projector is correctly focused for the picture, and probably a noticeable difference in contrast, and sometimes in the tone or coloring of the titles as well . . . the latter especially if you use another brand of film, which may be processed in different solutions.

Many cine-enthusiasts, even though they make good titles, don't seem to have a very clear idea of when to use the different types of title. Some of them like to use very elaborate, "arty" titles throughout the picture; others go to the other extreme and use the simplest possible titles from one end of their epic to the other. Neither practice is right.

The elaborate ones—which in the silent days the professionals used to call "art titles"—correctly belong only at the beginning and the end of a picture, and occasionally as an introduction to a very complete change of sequence. Cut in anywhere else, they're too likely to interrupt the audience's concentration

on the picture by their very "artiness." But for main and credit titles, end-titles, and spots where you're making a very big jump—one that amounts to a basic change of thought—in time, space, or action, they're great. And you can shoot the works on them, dressing them up with painted or photographic backgrounds, double-exposures, animation, and striking lettering.

On the other hand, for subtitles which are inserted within a scene or sequence merely to make clear something your pictured action cannot or does not show, the simpler styles of titles are by far the best. The lettering should be simple and very easily read—plain block lettering if you do it by hand, and a simple, plain type-face like the one printers call "Kabel bold" if you use printed title-cards. The backgrounds should be just as simple. Usually, regardless of whether you use color or monochrome, light letters (preferably white) against a black or at least dark-toned background, will be best.

Generally a plain background will be better than a patterned one. In Kodachrome, a flat color which blends pleasingly with the overall coloring of the scenes before and after the title is best. Dark blue, for instance, with white letters, is always good; but warmer colors like red, purple, orange and yellow, as well as the lighter or pastel shades of blue and green, should be avoided. Colored lettering, even though it furnishes a pleasing contrast with the background, should usually be avoided for subtitles, for it is visually distracting.

You can work up a nice argument, even among professional title-makers, as to whether, in monochrome subtitles, a plain black background or a dark gray one is preferable. Some people even like a very slightly patterned or mottled background which is, or will at least photograph as a dark gray. Speaking broadly, a very good rule to follow is, "when in doubt, use plain black."

If you want to add a more or less distinctive touch to your pictures, like a recurring trade-mark, there's an old trick some of the silent-film producers used in the subtitles of their films, which you can use in yours. D. W. Griffith, for instance, had a little line border around his subtitles, with the line forming at one corner the initials "D.W.G." Quite a few of the other top producers, directors and stars of the silent days used a similar trick. Marshall Neilan, I believe, used his swastika trade-mark (remember, this was twenty years before Hitler made the Hindu good-luck sign so unpopular!), and I think Charlie Chaplin, Mary Pickford, Doug Fairbanks, Sr., Charles Ray, Norma Talmadge, and quite a few others used similar monogrammed subtitles.

You can do the same thing easily enough by lettering your border and monogram on a sheet of clear celluloid or cellophane which can be placed over the subtitle-cards when photographing. A medium gray is best for this design,

as it will be visible enough, yet not so strong as to distract attention from the white letters of the subtitle.

Titles should be kept to a minimum, lest they defeat their own purpose, and become distracting or boring. So should the wording. Short, direct-to-the-point wording should be used, and the copy carefully edited. But don't make the mistake of making your subtitles so overly brief that they sound telegraphic. "Lake Minnetonka" may tell the story of a side-trip from a visit to Minneapolis—but "One week-end we drove out to see Lake Minnetonka" tells it much more smoothly and completely. In a word, keep subtitle-wording short, but literate!

In the more elaborate titles, which are usually harder to read because of their decorative lettering and backgrounds, you really need to be brief so that your audience can grasp the whole meaning of the title quickly. This ought to be easy, though, for you don't usually have to use many words in main and credit titles—and when you've reached the last scene in the picture, what is there to say in a title but—THE END?

Smith New A.S.C. President

(Continued from Page 169)

clear that these activities are as much for the 'little fellows' of the profession as for the men at the top; more so, in fact, for the men on top-bracket major-studio contracts don't need it as much, while the others can be advanced to better standing in the industry by the combination of interchange of technical ideas, experienced business advice, and well-planned publicity which the A.S.C. is gearing itself to offer. The camera profession has advanced tremendously in knowledge, and in standing in the twenty-five years since the A.S.C. was founded. The aim of my administration is to carry those advances still farther. With the loyal support of the officers, the Board and the members, I am sure we will do it."

Executive Vice-President Jackman, who declined re-election to the presidency because of his belief that two consecutive terms were as long as any one man should hold that office, and because he felt that the chair should be occupied by an active director of photography, supplemented President Smith's remarks by saying, "There is a definite need in the industry for organizations which will give them an opportunity for social and professionally educational activities. But the two don't mix; they cannot successfully be handled by a single organization. We can speak from experience in this—we've tried it.

"Ten years ago, unfortunate circumstances forced the duty of economically representing cinematographers upon the A.S.C. As one of the pioneer members of the Society, I can say that this was not the primary purpose of its founders, and it certainly was not a responsibility any of us sought. But when it was



Photo by Wallace Thompson

forced upon us, we carried on to the best of our ability, and for a considerable period the type of administration in the organization originally set up for this purpose made it very obvious that we must carry that burden.

"Today, things have changed. There has been a thorough house-cleaning in the I.A.T.S.E., and our personal contacts with both the local and the international officials of that organization have convinced us that the directors of photography will get a square deal from them. Accordingly, I started that negotiations, which are now being finished by President Smith and myself, to turn these duties over to Local 659, which can represent the entire camera craft efficiently and honestly.

"This will bring the A.S.C. back to its original purpose of getting the most progressive members of the camera craft together for social and professional contacts. It will enable us to advance the professional interests of First Cameramen—as apart from purely labor-union interests—in ways that only an organization like the A.S.C. can. And with them, we can further the technical progress of the industry as a whole.

"In the past, as veteran members of the organization know, the A.S.C. and its members have played a vital, creative part in advancing both the artistic and the technical phases of cinematography. The cameras we now use—the film upon which we make our pictures—the lenses through which we make them—all owe much of their present perfection to the fact that at meetings of the A.S.C. the practical men of the camera and the designers, photochemists and opticians could sit down together and discuss their mutual problems in friendly, round-table fashion.

"I'm not taking anything away from the brilliant men on the engineering staffs of the various manufacturing companies when I say that without the practical help of the First Cinematographers in the A.S.C. they could not have achieved as much as they have during these last twenty-five years. It has been the cinematographers who have told them 'We want this . . . we need that,' or even with brutal, if friendly, frankness, 'You've got a good idea there, but here—and here—and here are practical bugs that must be eliminated before it's really worthwhile for production use.' And only in an organization like the A.S.C. is that interchange possible.

"As a result, we have marvellous materials and equipment today. But improvements are still possible, and in many details, radical changes are on the way. And we in the A.S.C. today have the privilege of taking again an active part in making them practical, and of being in on the ground floor of knowing how to use them when they are finally perfected for our use.

"So I think that now, as the A.S.C. enters its twenty-fifth year, while it has great achievements to look back on, it has much greater achievements,

both for its members and for the profession as a whole, to look forward to. In every way, there's photographic history to be made—and we're going to help make it!" END.

Russian Camera Aces

(Continued from Page 168)

largely in action against the Nazis with the Black Sea fleet. Naval camerawork, he tells us, is no sinecure when one is being attacked from all sides by Nazi land, sea and air forces, and one's own ship is dishing out equal punishment, as well. Then is the time when one must know his camera and lenses so perfectly that their operation will take no conscious thought. You need all your mind, he says, to select the best and most spectacular action when things are happening so rapidly and both you and your subject change positions so quickly.

His comrades told us that Mikosha's favorite position for a camera set-up for filming this dangerous action was directly atop of the spare torpedoes on a torpedo-boat. As there were often fifteen or twenty Nazi planes bombing and machine-gunning his boat—not to mention the 500 lbs. of TNT in the war-head of torpedo and of the 1500-lb. pressure in its air compartment, this could hardly have been termed the most secure of camera positions!

At another time, filming a bombing raid on Sulin, he returned in a ship ventilated by no less than 64 bullet-holes, and in which one member of the crew had been killed, and the landing-gear so damaged that the big ship had to make a crash belly-landing.

Mikosha was one of the last, if not actually the last to be evacuated from the siege of Sevastopol, and he left then only because he was shell-shocked and wounded, and was evacuated over his own protests. Before that he had been twice wounded, each time refusing hospitalization as he felt he had more important work to do at the front!

Cinematographer Litkin, before the war, had done some production camerawork in Moscow, and then spent five years as a special newsreel correspondent in the Far East. There, he served outstandingly as a cameraman, director and writer of news and documentary films, and in his spare time hunted tigers to be sent back alive to the zoos of the larger cities.

Shortly before the war he won the Stalin Prize for making the documentary film "One Day in the Soviet Union," and while in Hollywood he learned that he had again participated in this highest award for his part in making "One Day of War."

His special advice to the combat cameramen in the American forces is to remember always not only not to expose his own life unnecessarily (that's one's own business) but always to be especially careful not to disclose or draw attention to the various units of the Army which may be disposed in his sector.

The wartime cameraman, he adds, must be completely familiar with his equipment and its use. The equipment, too, must be so light and portable that he can carry all or most of it in his shoulder-bags. He must have a lot of initiative, too, for he cannot wait for orders from someone else; he must use his own judgment for the most part in choosing his shots. At the same time, he must keep in contact with those officers who are in charge of planning military operations, so that he, in turn, can make sure of being ready with his camera at the places where photographic conditions are likely to be best, and where the most spectacular action is likeliest to occur.

One of his most interesting experiences was a fortnight spent with the guerillas who operate back of the Nazi lines, not only making life uncomfortably dangerous for the Germans, but capturing Nazi officers and soldiers and relaying information obtained from them back to the Russian command. During one of these guerilla skirmishes, Litkin took part in a forest battle in which the Nazis were defeated and scattered through the forest: he himself followed one of the fleeing Nazis, photographed his attempts at escape, and finally brought him back a prisoner—though, he says, the Nazi is a much more savage beast than the tigers Litkin used to hunt!

This assignment was complicated by fact that it was conducted during the Russian winter which proved such an enemy to the Nazis. He and his cameracrew had to travel light, carrying their cameras and about 900 feet of negative each, and due to the intense cold they not only had to drain the oil from their cameras, but carry both cameras and film beneath their uniforms to keep the

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cameras from freezing and the film from crumbling.

Cinematographer Soloviev was another who in peace-time made documentary films both in the studios and in the field. But when war came, he went to the front, where he has remained since September, 1941, except for a three-month interval during which he was hospitalized for illness. During the making of the Academy Award-winning "Moscow Strikes Back," he worked on the Central Front, filming not only tank battles but infantry attacks and aerial action, as well.

And yet, with all these bloody and nerve-racking experiences behind them, these four cinematic musketeers had one unanimous answer when they were asked how they liked Hollywood. "It's an interesting place," they said, almost together, "and our fellow-cinematographers here treat us wonderfully. But we're anxious to get back to our own country, for there, at the front, we've still got a job to do!" END.

Care of 16 mm. Sound Film

(Continued from Page 180)

wound on a rewind device, is allowed to run through it with only a very slight pressure being exerted upon it. If the cloth is held near the reel from which the film is being unwound, the film will be dry of all cleaner by the time it reaches the take-up reel. When cleaning Kodachrome or color films, it is important that as much as possible of the cleaner be squeezed from the cloth before attempting to clean this type of film. A glance at your cleaning cloth after cleaning a hundred feet or so of film will show how much oil and dirt has been removed. The quality of the projected image on the screen and that of the sound will both show a noticeable improvement.

How often the film should be cleaned depends upon the conditions under which it is shown, and how it has been stored. If it has been shown in a dusty room or projected under dusty conditions, it should be cleaned often. The same also applies if it has been stored loosely wound for any length of time elsewhere than in a dustproof container. An examination of the film on a rewind or editing device that reveals spots of oil, grease, fingerprints, pieces of loose emulsion, or dust is a sure indication that it needs cleaning.

Films with torn or broken sprocket perforations should be repaired as soon as possible. This is especially important in the case of 16mm. sound-film, for with this type of film there is only one row of perforations for the sprockets and claw to engage. Projection of these films with broken or torn perforations is inviting trouble in the form of ripped and scratched films, and the loss of much valuable footage.

These breaks will show up many times when you are cleaning your films, as the cleaning cloth will catch in them. Whenever this occurs, immediately stop and repair the break. It is also a good idea to occasionally inspect the film on a rewind device by allowing the film to run slowly through your fingers; holding it only by its edges. If your film has any places where it has been previously broken and joined together (spliced), inspect these places and look for any breaks, tears or loose edges between the

perforations. At the same time inspect the joint by twisting it slightly to see if it is in good condition. If it appears loose, open it or cut it out and re-splice it.

Repairs on torn film are made by a very simple process known as splicing. The making of a good splice, however, requires the use of an instrument known as a splicer or splicing block. There are a number of good makes of these on the market, to be had in all price ranges. If you project your film only once in a while, I would suggest that you have your photographic dealer make any repairs that might be necessary. However, if you handle a lot of film, then a good splicer is a most essential item for your use. Here it might be said that Bell & Howell puts out a diagonal splicer that makes a diagonal splice across the film, while Eastman and Craig put out splicers that make a straight splice directly across the film, at right angles to its edge. For strictly professional use, where you want to make splices that are as nearly invisible as possible, or where you are working with Kodachrome originals that are to be duped, or enlarged to 35mm., the only splicer to use is the Griswold, which is the only 16mm. splicer made which will make the narrow, "negative" splice, which measures .05" wide as compared to .072" or wider for most 16mm. splices. These splicers are only obtainable on a priority basis at this time, however. Which type you wish to use and the amount of money you wish to invest is a matter of personal choice and budget limitations.

Essentially the making of a good splice is the same regardless of the instrument used. The damaged sections of the film are removed by the cutter of the splicer. From one of these ends the emulsion or picture-carrying material on the dull side of the film is scraped away by the splicer's scraper. The shiny side of the unscraped end is overlapped onto the scraped end so that both of the dull surfaces of the film face upwards. The ends are separated slightly, a little film-cement is applied to the scraped end, and the two ends are clamped together by the splicer's clamp for about thirty seconds, at the end of which time the splice is



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completed and may be removed from the splicer. The whole operation is very simple. If a little water is applied to the end that is to be scraped, it will be found that the emulsion may be removed easier, though perhaps not so neatly. Here it might be stressed that *all* of the emulsion must be removed from the area covered by the scraper if the splice is to hold permanently. It is also a good idea to roughen the film base after the emulsion has been removed so that the welding action of the film-cement will be better. The registration pins of the splicer will hold the film in correct registration during these operations so that the splice will be perfect.

After the splice has been removed from the splicer, test it to make sure that it won't come apart, by twisting it slightly. Bad splices will come apart during projection and may cause film damage. These bad splices are caused by: (1) the emulsion not being thoroughly scraped off; (2) an insufficient amount of cement being put into the splice; (3) too much cement on the splice which will dissolve the film base and make the film weak and brittle at this point; and (4) old cement which has lost its welding power or will cause the film to become stiff, hard, and buckle on projection—usually breaking between the sprockets. Use only good, fresh film-cement and keep the cover on tight at all times when not using it.

On sound-films, whenever a splice passes through the sound gate, you may have noticed a sudden pop or blurb from the loudspeaker. This is caused by the sudden interruption of the sound-track by the splice. It may be avoided if, at the time of making the splice, a wide "V", with its legs spread far apart, is made across the sound-track area of the splice with black water-color paint or other opaque material that will not readily rub off. You can get special paint for this, known as "blooping paint" from most theatre-supply stores. This "V" will serve to extinguish the track gradually and thus eliminate the sudden, objectionable pop.

As was mentioned earlier, motion picture film should be kept in dustproof containers at all times.

Immediately after the film has been projected it should be returned to its can and covered—and then as soon after-

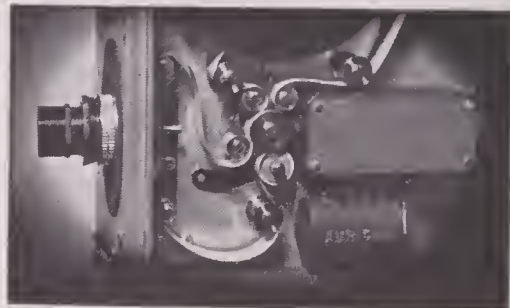
wards as possible it should be rewound onto the original reel, ready for the next projection. In rewinding your film, do not rewind it too tightly. On the other hand, do not rewind it too loosely, as this will allow it to shake in folds in the can and cause frictional wear during transportation and projection. Maintain a fairly even pressure on the rewind brake or supply reel when winding onto the take-up reel. This will assure the film being wound smoothly and with an even-tensioned flow, and will keep the dust from settling into it when the cover is off the container previous to loading and unloading the projector. If your film has been wound too loosely on its reel, rewind it again: *never* take it by its end and pull it tight. If you do, this will cause bad scratch-marks known as "cinch marks" on the film.

Store your films in a cool dry place. This is especially important with Kodachrome or color films which are readily attacked both by excess moisture and heat, resulting in the emulsion blistering and the colors fading. Do not at any time allow your films to be kept near a source of heat such as a furnace, a radiator, hot-air register, steam pipes, etc. To do so will cause the film to shrink so badly that it will be impossible to project it. In hot weather, do not leave your films in a closed automobile—the temperature will build up amazingly and may ruin your film if the car is left in the sun for any length of time.

Black-and-white film which has been stored for a long period of time where it is very dry is liable to become quite brittle and break repeatedly on projection because of loss of its moisture content. This happens quite frequently in office-buildings heated by steam radiators, where the air is liable to be very, very dry. If this is the case, the film should be humidified before use. In the bottom of most film cans is a small blotter, covered by perforated metal or wire mesh. This should be dampened and the film stored in the closed can for from twenty-four hours to three days. Do not allow any water to touch the film as it will mildew and be ruined. If the films have to be stored in an excessively dry place where they are liable to dry out, moisten the humidification-pads or blotters every four to six months depending

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upon the atmospheric conditions. KODACHROME OR COLOR FILMS SHOULD NEVER BE HUMIDIFIED. With them, the humidification process will fade their colors in time.

In threading your films into your projector, always hold the film by its edges being careful not to get your fingers or hands on the picture area. Provide a long enough leader, which in most cases with sound-films should be about six feet in length. This will enable you to thread and check the running of the machine on the leader, thus relieving the picture proper of the strain of starting and stopping. If at any time the projector does not sound right, or you should lose the loop in the projector, stop it immediately and re-check the threading. Continual loss of loops usually indicate a film which either is shrunk or has broken perforations and is in need of repair. When handling your films during repairs, be sure that your hands are free of any grease or oil which might be transferred to the film. It is a good idea to purchase a cheap pair of cotton gloves and wear these when handling film.

So much for your films. Observe the preceding rules and you will do much towards lengthening their useful life.—
(To be continued)

Sound on Silent Projector

(Continued from Page 181)

all have to line up with the lower sprocket on the machine.

Now we come to the exciter-lamp which is a standard 8½-volt lamp. The socket was purchased from one of the local auto accessory stores and was mounted on a bracket approximately ¼-inch below the sound lens. I then fitted a metal shield with a hole about ¼-inch in diameter for the light to travel through to sound lens. This shield was made so that it could be slid on and off should it be necessary to change the exciter-lamp. This covers everything up to assembly, which is really quite a precise job. However, I made everything that would need adjusting with plenty of leeway for adjustment.

Three holes were drilled through the top of the plate for 10 x 32 fillister-head screws. These were spotted into projector and then drilled through with a No. 21 drill and then tapped. The plate was then mounted on the projector and

the sound-lens was put into place and fastened with a clamp made of thin brass held by small screws which, when loosened, would allow the lens to be moved up or down for focusing.

Next, the bearing for the shaft for the film drum was shoved through the holes in projector and screwed into the plate. When this is in place it will fit inside the drive belt, nicely clearing it on both sides. The drum and fly-wheel pulley are put on the shaft and secured with a nut on both ends of the shaft.

The photocell is shoved into its housing and wires soldered to the leads on the tube. These wires must be shielded and grounded or a heavy hum will result when the amplifier is started. A cap was then fitted over the housing. Then leads were also fastened to the socket of exciter lamp. We are now ready for the amplifier, of which I will give you a description.

The amplifier is very versatile. It was built to my specifications by my friend, Wm. R. Stanmyre, who is a sound engineer. I had on hand an amplifier which I had used for recording and play-back of sound-on-disc; he tore this amplifier down and salvaged what parts he could and built an amplifier with the proper frequency curve for sound-on-film. There are six plug-in jacks, one for microphone, one for recording, two for dual phono reproduction, one for photocell, and one for exciter-lamp supply.

When the projector is set on the amplifier it is secured to same by a knurled screw that goes through a hole in the projector-base and into a threaded bushing in the top of the amplifier. The amplifier is crackle finished, as is also the sound plate, matching perfectly the finish on the projector. The working parts mounted on the plate were given a coat of bright nickel, as it would not do to have them buffed as that would make them uneven in spots. The whole outfit looks as if it might have been made at the same time by the Eastman Kodak Co.!

The next problem was really tougher than the work I have just described. I was faced with the problem of lengthening out the arms to accommodate 1600-ft. reels. At first this seemed very simple, but when I started to do it I really found I had a job on my hands! After many trials and errors I finally hit upon a design that would really work. If I were to do it over again I would make a pattern and have them cast, which would be easier and neater.

The photo will give you as good a description as I can with words. To drive the take-up reel I turned up a pulley from bronze and counterbored it just enough to set the regular pulley into it to center it. I then turned up a small pulley ½-inch in diameter and located this one where the arm makes its first bend.

I hooked one side of the belt over this

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pulley; otherwise it would rub against the side of the projector. The belt was purchased at one of the local stores from a make-it-up kit. These belts come in assorted sizes and are cut off any length you want. It is necessary to get the same size belt that comes on the projector or it will not pull enough to take up a large reel.

At the end of the bottom arm I bored it out to take the spindle that came with the machine. The top arm was more simple to elongate; I simply cut the regular arm in two and fitted a four-inch piece into the center. The arms were then crackle-finished to match the rest of the projector. When using 400-ft. reels, the belt is run on the small pulley, and when using 1200 or 1600-ft. reels the belt is run on the large pulley. The belt easily stretches the extra length.

The speaker is a General Electric with a 12-inch cone. The speaker-case also accommodates the amplifier for carrying purposes. There are 25 feet of wire connected to speaker for average home use, and I carry another extension of 40 feet to couple on for hall or Auditorium work.

After carefully adjusting the machine I threaded it up with a musical cartoon, and with heart beating somewhat faster than normal I adjusted the controls and started the machine. To my great satisfaction I heard music—not quite right yet, but better than I had hoped to hear when I first started the machine!

I adjusted the sound-lens for focus and also the exciter-lamp, but the sound was still a little choppy.

Finally I took a pencil and started holding it at different points against the film housing to add tension to it; and at one spot half-way between the photocell housing and the film stabilizing drum, the sound smoothed out and was as nearly perfect as any 16mm. sound that I had ever heard. So I then made a small roller and mounted it so as to

hold the film up closer against the photocell housing. This is shown as No. 5 on the photo.

I then threaded the machine up again, started and adjusted it to sound speed, and with a feeling of pride and satisfaction I settled down and enjoyed the picture and heard as good sound as I have heard from any factory-tailored job. I had done it! I had added S-O-F to *my* previously silent projector!

In ending this article I wish to say that the motor supplied with the projector will run the projector at sound speed through full 1600-ft. of film at a constant speed. It does not speed up and slow down as do those on most silent projectors.

The cost? Well, here is a list of parts purchased.

Holmes sound-lens	\$ 9.00
Photoelectric cell	2.95
Exciter-lamp60
Lamp socket20
Film shoe65
Wire30
Parts to rebuild amplifier.....	10.00
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	\$22.70

I suppose if Stanmyre and I had figured in proper charges for our time spent in making the conversion, the price would run up to something that would be pretty well on a par with a professionally-made job. But that would take it out of the amateur class—and our interest in the whole thing was as amateurs who wanted 16mm. sound-on-film without paying for factory-made S-O-F projectors we couldn't afford—and which we couldn't buy at any price today anyhow. END.

Slang On the Screen

(Continued from Page 179)

was staggered so the dolly could move the entire length of the boards.

Several of the shots required double-exposure and for this black flannel was found superior to the conventional black velvet. Velvet has too much sheen in one direction and it is sometime difficult to arrange the lights to avoid this reflection. Black cotton floc is also better and can be sprayed over any irregular surface, but as it requires a varnish base it can be removed only with paint remover or lacquer thinner. But as the actors could hardly be painted with varnish and floc, they were covered with black flannel for some scenes.

In one place in the script the action called for them to "Paint the town red." The scene fades in on a skyline scene of New York City at night. Dance music fades in slowly and then the camera dollies back from the New York City skyline which reveals itself as being a picture hanging on the wall of a night-club. The young man and the girl come skipping in in front of the picture. By this time the camera has dollied back far enough to show the bar of the night-club. They order a drink, and then, to show the passage of time—and drinks—a close-up is shown of two

highballs being brought by the bartender's hands. The liquor rapidly empties itself out of the glasses which are quickly replaced with two more—and two more—each larger than the previous. This was done by single-

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frame animation during which one-half ounce of liquor was removed from the glass between exposures. The bartender's hands replacing the glasses was shot at 12 frames per second to speed up the action.

After the young man and girl had begun to feel the effects of the drinks "They lost their heads." We see a medium-shot of them, somewhat tight. Suddenly their heads leave their bodies by rising in the air and finally disappear, while one actor tries to drink and the other to smoke without finding their heads. Then the bartender returns to the scene with a tray, which he drops when he sees them headless and exclaims, "My gosh, they lost their heads!"

That trick was done by double-exposure. A target for aiming the camera by means of the cross-hairs in the reflex finder of the Ciné Special was set up on the bar. The bar background and the two actor's bodies were covered with black flannel. The action shows their heads looking at each other in amazement as they float away from their bodies.

The camera was panned during the action so the heads floated out of the picture. To return the camera to the same spot after rewinding the film, the target was set up on the bar and ori-

ented by the cross-hairs in the reflex finder. Without any movement of the actors' bodies during this time (you remember their heads only turned and looked at each other), the camera is now in a position to record the bodies so they fit to the heads. This time only the actors' heads are covered with black flannel while their hands bring a cigarette and a glass up to where the heads should be but cannot be located. Then the headless bodies get up and start to stagger out of the scene.

In the next scene "They got hitched"—still headless, of course. Outside of a parsonage at night (shot on infra-red film) the two actors are seen in front of a preacher as he pronounces them man and wife—during which the camera is dollying back and we see that they are hitched to a gig which they start pulling away. Then the parson says, "In other words, you are hitched."

As we see only the backs of the couple it was easy for them to lean their heads forward and raise the shoulders of their overcoats so you can see no trace of their heads while they trot down the country road. This imaginative way of portraying a marriage scene is typical of the kind of humor shown in the picture.

In another shot "She hits the ceiling"—This was done with the help of plenty of black flannel and tilting the camera down while she is supposed to rise and hit the ceiling superimposed on a second, stationary-camera shot of the room alone. A quick cut to a close-up of the girl's head bumping against the ceiling with an expression of pain on her face and the sound of the bumping—all this resulted in a very realistic effect.

The most difficult trick took a long time to figure out because Director Fels kept asking for a close-up of an eye lying on a man's hand, alive and blinking to portray the expression "She gave him the eye." Finally, after asking five or six times how it could be done, he asked for an eye in the hand! Quick as a flash, the cameraman said, "Oh, that's easy, why didn't you ask it that way before?" The matte-shot with male and female cut-outs mounted on glass placed in front of the lens was suggested, and this worked out quite satisfactorily.

The thing about the picture which surprises most professionals, however, is the excellent synchronism of the post-recorded sound. After finally editing and cutting the film, the actors, the narrator, Gordon Bradley, and the sound-effects man (amateurs, too) gathered. They practised their parts while the film was projected through a glass window. All the sound-effects required by the action were devised and rehearsed so as to give the proper illusion. After about six rehearsals, the group went to a recording studio where the entire sound was recorded at a moderate cost.

Vege-Table-Top Follies

(Continued from Page 177)

a long plastic knitting-needle concealed by her feathery foliage. Finally on the stage alone, she bowed a graceful close and remained away despite our admiring applause. All of this action took place on a large mirror, reflecting the entire ballet quite effectively.

Ah! "A Follies" wouldn't be worthy of the name without the naughty strip-teaser. After all we had to add a little spice to all that soup material . . . hence, Bubbles Banana. Of necessity we used a stand-in for her, as we couldn't risk a change of complexion while arranging the spot-light and backdrop that would display all her creamy loveliness. When ready to shoot, we saw the fair Bubbles with glamour plus, wrapped up to her chin in her natural attire (satiny yellow skin) slowly drop her robe and emerge—not quite as you are used to seeing her, to be sure, for we saw fit to add a few luscious curves here and there. Her bannana-skin wrapper was peeled down bit by bit, during which time her additional curves were added and shot with single-frame action. As a spectacular climax to our star's performance, we dissolved the End Title in a red heart right across her little . . . er . . . ah . . . oh well, you know what they always say at the finish! END.

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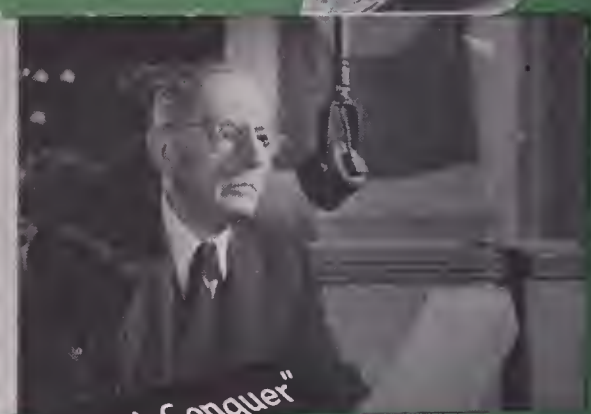
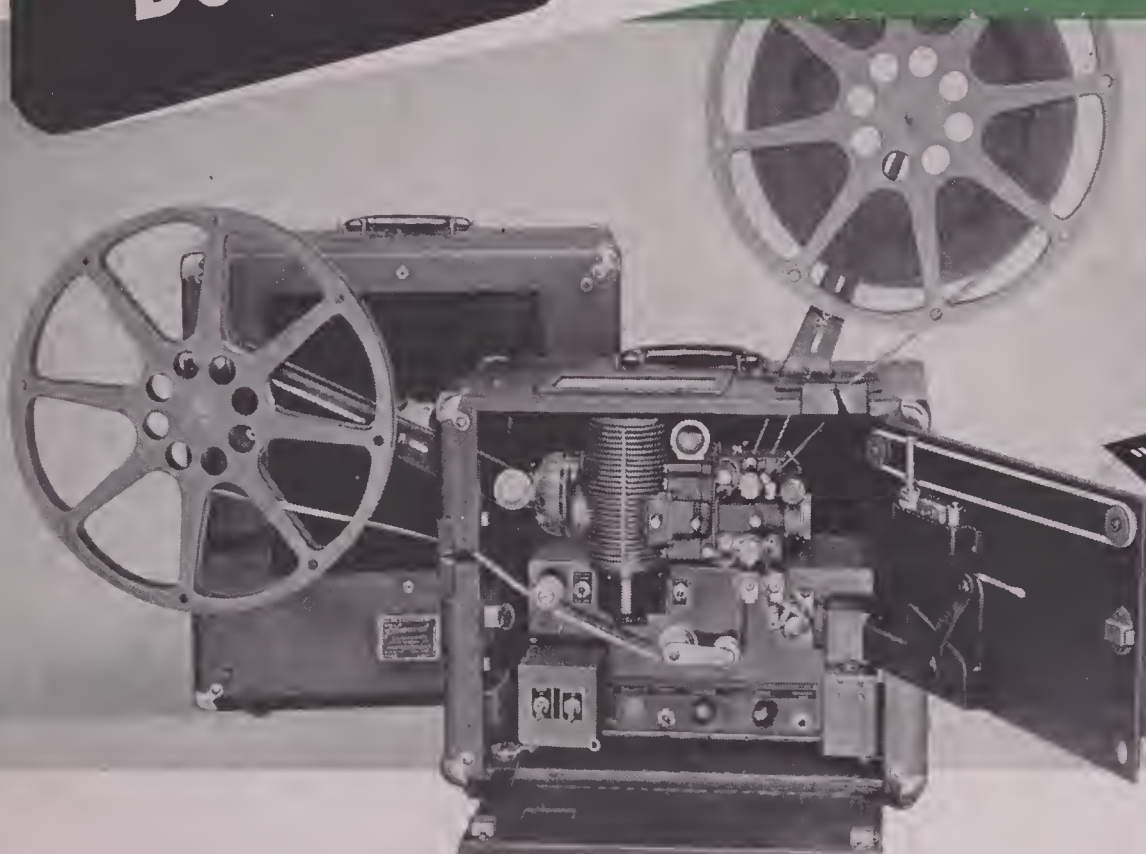
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JUNE
1943



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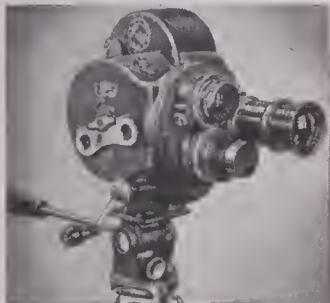
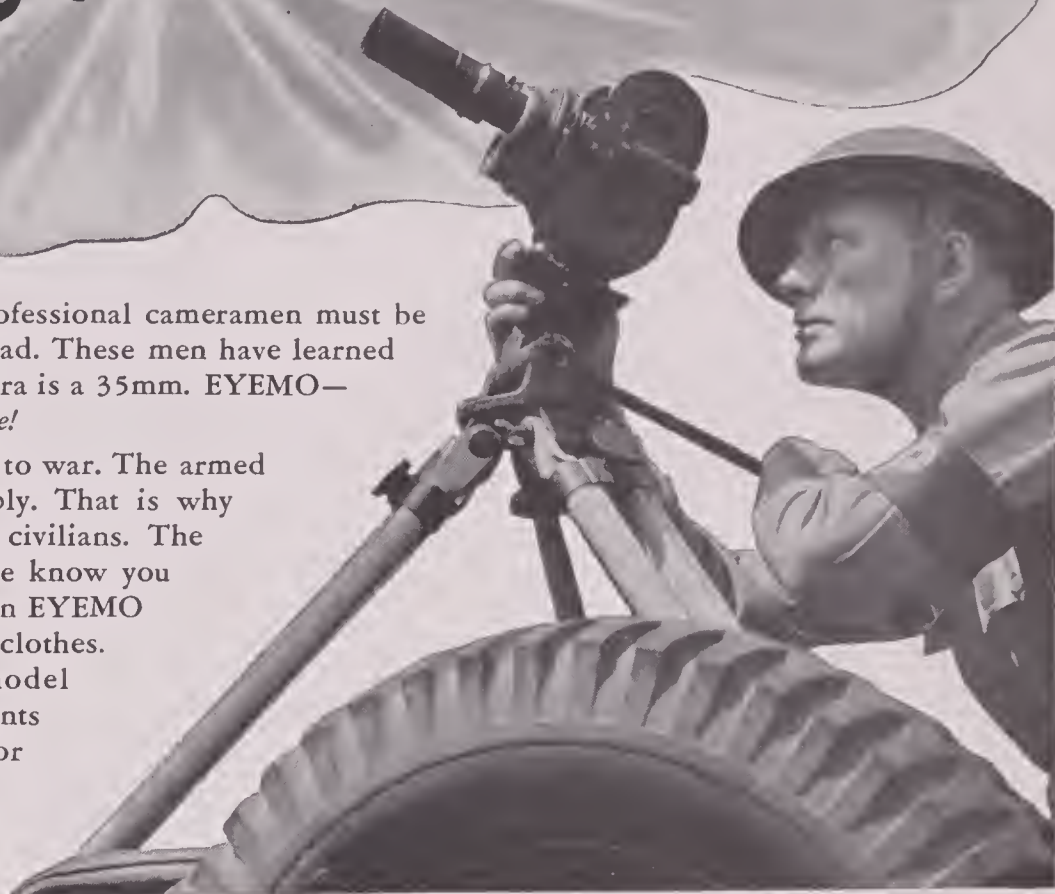
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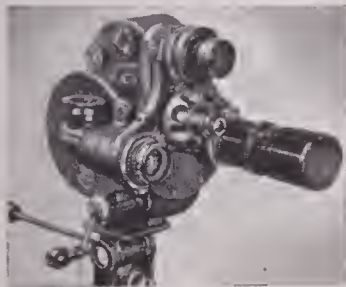
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

JUNE, 1943

NO. 6

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The Front Cover

This month's cover shows Harry Wild, A.S.C. (to right of camera, wearing hat), shooting a reverse-angle "reaction shot" while Gypsy Rose Lee does her "Star and Garter" strip-tease for Sol Lesser's "Stage Door Canteen." Note "flags" used to shield camera from lamps, and "barn door" on the baby keg at right.



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Left: the author at work on location. Note use of reflectors to control lighting and produce result similar to center picture. Right: Cameramen on military combat and training films seldom have a chance to employ such studio refinements as reflectors. Note also that in a shot like this the use of filters would distort color-rendition of camouflaged "Raider" uniforms.

Hints On Outdoor Camerawork For Army Combat And Training Films

By RUSSELL HARLAN, A. S. C.

AT an A.S.C. meeting the other night the Editor manoeuvred me into a corner and waved this editorial black-jack at me: "Russ," he said, "We get a lot of letters from Army cameramen asking us advice about camerawork in the field. Now you've shot close to fifty of Harry Sherman's 'Hopalong Cassidy' Westerns, and a number of Army Training Films besides, so why don't you sit down and give the boys some of the benefit of your experience in exterior camerawork?"

Well, I don't know just how much "benefit" there is to be gained from anything I might say on the subject, for shooting studio exteriors—even on Westerns—is quite a different matter from shooting an Army Training Film, and even more different from combat camerawork under fire. In an entertainment picture, your camerawork has to center on the story and the players. In a training film, the "star" of your production is the gun, or tank, or hand-grenade the use of which film is supposed to teach. In a combat film, as I understand it, your main job is to get an accurate photographic record of what happens and how and where. And of course in making studio exteriors, we have the advantage of being able to control our photographic effects a lot with reflectors, booster-lights, scrims, and so on.

But I suppose that Bill is right, for there are certain basic fundamentals that all three types of exterior camerawork have in common.

One of the first of these is one I haven't seen stressed near often enough in any discussions of either dramatic or military camerawork. It is the necessity of absolute simplicity in your camerawork. Whether you're trying to "sell" a story, a piece of necessary military information, or an actual battle, any photographic trickery that calls attention to itself—and so diverts at-

tention from the main purpose of the picture—is bad.

Filtering is one of these tricks that is best forgotten except in very unusual instances. Whether you're shooting Bill Boyd and his pals galloping across the foothills of Mt. Whitney, or the prosaic operation of unlimbering a 155mm. gun, or real "for keeps" action in Africa or New Guinea, you want the scenes you put on the screen to look real, and the action to be clearly distinguishable.

And one of the easiest ways to "louse up" an exterior scene is to try and improve on it by using a filter. Ninety-nine times out of a hundred you'll make it worse, instead of better—and the hundredth time is open to question, too.

First of all, you see, a filter tends to distort the color-rendition of whatever you're photographing. This may not be so objectionable in an entertainment picture if it is only a mild distortion, but in a picture for any military purposes it's murderous. For example, suppose you're shooting a training film with soldiers in summer khaki uniforms. Suppose you use a yellow-orange filter like the G or the 21, or a red filter: you're going to make those already light tan uniforms whiten out like a freshly-laundered Navy "whites." And unless the background has been summer-burned to almost exactly the same shade of tan, your filtering is going to make those soldiers stand out in front of it much more prominently than they actually do to the eye. If the background is normal greenery, they'll stand out as prominently as so many snowballs in a coal-scuttle.

In the same way if you're shooting men in camouflaged outfits like those the Marine Raiders and similar units wear, any filtering will give an untrue rendition of the coloring of their camouflage and its relation to the background. By careless filtering you can give an absolutely erroneous impression of the

way a camouflaged soldier or a camouflaged gun-position blends or does not blend with its surroundings. Either way you're off the beam, for the staff officers who study such films want to know precisely how things are, rather than what you can reveal or conceal with photographic phenagling.

Moreover, most filters—even gelatin ones—tend to make the image softer optically. In plainer words, they cut down definition—when definition is one of the prime requisites of most outdoor photography, whether it's on Westerns, or on military films of any kind. In either case, the people who will see the films are more interested in knowing exactly what is happening than in how "arty" a cameraman you may be.

Of course there are always exceptions which prove the rule. In shooting exterior night-effects for studio films, or in some types of reconnaissance and mapping photography where you have to penetrate haze to accomplish your end, you may have to use filters, and sometimes Infra-Red film. But in that case your distortion of color-rendition is done deliberately, and you can expect the folks who study your pictures to understand that, and make allowances for it.

But otherwise, my sincere advice to the military cameraman would be to forget that filters were ever invented, and do all his work without them. In that, I've really expert confirmation in a comment made to us recently by the A.S.C.'s newest Honorary Member, Lt.-Col. David MacDonald, of the British Army Film and Photo Unit, who told us that very early in the game out there in the African Desert he found what a handicap filters could be to battle camerawork, and issued an order to all his men to throw away their filters!

Next comes the question of exposure. This has to be right on the bean, not only to get the best print out of your negative, but to get the most accurate tonal value and the best definition. Now exposure has to be keyed to the normal processing of the laboratory that handles your negative, so I'd say that the first thing would be to find out what that is, and then, if necessary, correct all your experience and meter film-speed settings to conform to it.

Some professionals like to read their



Above: a shot where your exposure-meter can fool you unless you make it read on the area most important to your picture. Center: note careless use of exposure-meter; reading would be much more accurate if the meter were shielded from sun and scattered light by user's hands. Right: Camera-angles are important. Note how upper picture, with tanks approaching, shows much more detail than lower picture where they are moving in opposite direction and half hidden by dust-cloud.

exposure by the illumination on the ground glass of the camera—assuming, of course, that it's a studio-type camera that has a ground glass. But with today's fast films, that's a pretty deceptive thing, as several of us have found out to our sorrow at one time or another, so the really safest thing is to use a meter. I don't much care what kind, so long as it is accurate and dependable, and you really know how to use it.

And let me tell you, there is a definite trick to using a meter properly. With a reflected-light meter like the Weston and most others, there's a lot more to taking a meter-reading than just standing up and pointing it in the general direction of your subject. Doing it that way, you can not only get miles off the beam, but you can kid the meter into giving almost any reading you think is right!

Perhaps the biggest margin for error in the way most people take meter-readings outdoors is that if you just hold the meter and point it at your subject, the meter is not only likely to "see" a different area from what your camera is covering, but in particular to "see" much more sky than your lens takes in. That sky is pretty highly reflective, and even if the meter reads only on the actual sky-area of your shot, that excess light is likely to boost your reading higher than the correct exposure for the part of the shot in which you're really interested.

The first step in getting around this is to make it a practice always to point the meter downward—at about a 30° angle—so that you deliberately include more of the usually darker foreground, and less of the sky. This in itself will give you more consistently accurate meter-readings.

But there's another step, a little trick that makes the reading even more effective, and about which surprisingly few, even of the professionals, know. Most photographers know that to get really good pictures, uninfluenced by the scattered light from all around the subject-area, and which does not play any part in making the actual picture, you've got to have a good, tight sunshade on your lens.

The same thing applies to exposure-meters, too. The same scattered light reflected from outside the picture field—from the sky, and from almost every object to one side and the other of your actual field—kicks into the meter's photocell and naturally tends to boost your reading. If you want a really accurate reading, you'll have to shield you meter's "eye" from this unwanted light.

The simplest way I've found is to make it a habit when taking meter-readings to fold your hands over the meter so that the palms of the hands, projecting at each side, and the fingers, at the top, make a little sunshade for your meter. I've known of a few people who have even made neat little matte-boxes for their meters; and when you use a studio camera, you can often place the meter's cell directly behind the camera's matte-box, and use that for a sunshade for your meter. The rear opening on the wider-angled lenses (from 35mm. down to 24mm.) is usually almost exactly the size of the "eye" of a Weston meter, so if you use a camera like that, there's a useful tip. But—you always have your hands, and I've found that little trick of using your palms and fingers for a sunshade is usually quite enough in most cases to give a perfectly accurate reading.

It's a good thing to remember, too, that by manipulating the speed-setting, you can place the exposure on any desired portion of your film's characteristic curve. If you want to favor the shadows—and especially in shots where for any reason (including bullets) you can't get in to take an actual reading on those shadows—you can do so by simply using a film-speed one, two, or even three or more points slower than you'd use under normal circumstances. Just how much slower a setting to use will depend on the density of the shadows, and particularly on what proportion of the total picture-area they form. In general, if the action you're interested in occurs in the shadows, you won't go wrong exposing by the old photographic formula of "expose for the shadows, and the highlights will take care of themselves." I've made pictures among California's "big trees"—the Sequoias and Redwoods—and I've found nobody complained if, when the action was mainly in the heavy shade under those trees, I exposed for that and let the sunlit part "burn up" if I had to. I suppose it's the same shooting Army films in the jungles of New Guinea.



I've often been asked about the matter of controlling exposure where you have some very "hot" highlight extremes, as on a brilliantly sunlit, sandy desert, or at the beach, and so on, where your normal exposure-reading is likely to be close to the top of the meter's scale, and probably at or below the smallest stop on your lens. Some people advocate using Neutral Density filters to control exposures in such conditions, but personally, I steer clear of the Neutrals, for while they do cut down the exposure, they also tend to flatten out your picture. And as a rule, you don't want any flattening when you're striving for the best and crispest definition.

Instead, I prefer to cut the aperture of my shutter. This is possible with studio-type cameras, though not with Eyemo and DeVry hand-cameras, and it can be done all right in 16mm. if you're using a Cine-Kodak Special or a Bolex, both of which have adjustable shutters.

And speaking of 16mm., which because of its compactness and the very surprising results you can now get enlarging 16mm. Kodachrome to 35mm. in either black-and-white or Technicolor, seems to be coming more and more into use for combat camerawork, most of the things I've said about 35mm. black-and-white apply just as well to 16mm. and Kodachrome. Exposure, for instance, has to be right on the old button if you want the best results in color-rendition and definition. There's one exception, though: if you know your Kodachrome is to be used as an original only, give the correct, "rule-book" exposure; if you know it is going to be duped or enlarged to 35mm., it's a good idea to give an exposure (outdoors) based on a speed of Weston 6 or even 5, to soften the contrasts and get better into the shadows, so that there will

(Continued on Page 237)

Russia's Newsreel Cameramen At The Front

By ROMAN KARMEN*

FOR a number of years Soviet newsreel cameramen had been accustomed to film the peaceful life of our country. Documentary film and Soviet newsreel mirrored the onward march, the happy life, the constructive and joyful labour of millions of people.

But there came the day when Hitler flung his divisions against our towns and villages. Upon the country and the people that was giving an example of the actual realization of the great march of humanity toward democracy and social justice, there descended the full force of the Hitlerite hordes. And the Soviet people entered into battle—everyone to the last man rose up to wage a sacred patriotic war. We took upon ourselves the brunt of the blow. And for the first time in the present war the march of Hitler's hordes across the territories of the countries of Europe was halted—by the Red Army.

And on the very day of the outbreak of the war, newsreel cameramen left for the Front.

Today, when eighteen months of war are behind us, we can sum up certain results of our front line work. Scores of thousands of feet of film have been taken. Each of us has run great risks and been not infrequently bombed, trench-mortared and shelled by the Germans. Many of our comrades have perished at their post, camera in hand, and many have been wounded, returning to active work immediately on recovery. Digging into the earth they have been subjected to fierce enemy bombardment, together with plucky sharpshooters they have lain in wait for the enemy, suffering trials and hardships. We have all grown unused to the feel of civilian clothes and have learned to appreciate the supreme law of the soldier's front line comradeship, which is "Help one another."

Cameraman Pechul charged into the attack side by side with his Red Army comrades, rifle and grenade in hand. The detachment broke through the encirclement. In this action Pechul died a hero's death.

Another cameraman, Slavin, was twice wounded and twice came back to the front immediately he recovered.

Cameraman Boris Sher spent ten weeks with a guerilla detachment that wrought panic among the Germans in an unnamed district near the Valdai Hills.

*This account of the heroic work of Russia's newsreel cameramen at the front comes to us through the courtesy of "The Cine-Technician," the official organ of Britain's Association of Cine-Technicians. The author, Roman Karmen, is a young ace newsreel cameraman who shared the Stalin Art Prize for his part in making "One Day in Soviet Russia," and "Moscow Strikes Back." He later was one of the cameramen on "Leningrad Fights." Before the war he and his camera served in Madrid (1936) and China (1937) and in the Arctic Circle during night flights over the Pole in search of the lost Soviet airman Levanevsky. He also acted as a war-correspondent for "Pravda" at home and abroad. ED.

When he had amassed sufficient material covering the activity of this detachment and planned to make his way back across the enemy lines, the guerillas did not want to part with this plucky young man. They had come to consider him as belonging to their ranks and he had won their strong affection—the affection of grim and courageous men who look death in the face every minute of the day. The guerillas sent a letter to the studio from which we learned much in regard to which our comrade had modestly kept silent. They wrote that Boris Sher had participated in several daring and dangerous operations as a guerilla trooper. At night time when filming was impossible he would take up a rifle and accompany the detachment into battle. Boris Sher, like many another front-line cameraman, now wears the Order of the Red Banner and continues his newsreel work.

Cameraman Mark Troyanovsky was among the last batch of Red Army men to leave Odessa—that same Mark Troyanovsky who accompanied Papanin on his flight to the North Pole. (His film was shown in England under the title *Conquerors of the North*). Troyanovsky filmed scenes of the heroic defense of Odessa and the exploits of its defenders.

Till the very last hour Cameraman Vladick Mikosha stuck to his post filming the glorious defense of Sevastopol, which will go down in history as one of the most heroic pages in the struggle of progressive mankind against bloody Hitlerism. In the last days of the defense of Sevastopol, Mikosha was badly shell-shocked but he kept on working.

The work of the cameramen filming in besieged Leningrad deserves special mention. Cameramen Uchitel, Fomin, Stradin and others did not cease filming for a minute. In rigorous frosts, under fierce bombing, and incessant shelling, under conditions of blockade and hunger, they created for future history truly priceless cine-documents of the life and struggle of the hero-city. Like all Leningraders, the cameramen received a meagre ration of bread, they were emaciated and could hardly walk, but each day they plodded to the city carrying heavy tins of film and kept constantly taking shots. We are grateful to them for having preserved for us the inimitable features of proud, indomitable and plucky Leningrad, for having perpetuated the unforgettable scenes of the winter of 1941-42. They filmed in the factories, on the streets and in the advanced front lines. The episodes they filmed now show the whole world what the Soviet people are capable of, cherishing deep faith in their victory and profound hatred of the enemy, and, in the name of this faith

and hatred, ready for all privations and exploits.

At Stalingrad, too, cameramen worked filming the fierce battles wherein the glorious city's defenders mauled the German divisions, and where, for every foot, for every inch of soil, Hitler paid with the lives of thousands of his soldiers. *Stalingrad* will shortly be shown in Britain.

One Day of the Soviet War depicts an ordinary day in this country which at the call of their great leader, Stalin, the whole Soviet people have turned into one mighty war camp. That day, from sunrise to sunset, 160 cameramen filmed numerous episodes both at the fronts and in the interior. This film has recently been shown in Britain, and in America through "The March of Time."

Soviet film workers engaged at the front know that each foot of film taken in battle is of historical value. It will afford an edifying narrative for future generations. Humanity's future is being born in today's battle, let our descendants know the great cost of their happiness, which is today being won for them by the Red Army men defending Stalingrad, by the Cossacks of the Kuban, Terek and Don, by the sailors of the Baltic.

We have seen some splendid pictures made by gallant English cameramen, filming battles in the air, in the Libyan desert and on the Atlantic Ocean, we have seen newsreels about brave R.A.F. men making death-dealing raids deep behind the enemy's lines. We applauded the work of the heroic cameraman, Tom Tanner, who filmed the Malta convoy. A while ago we saw a new newsreel about Malta and admired the skill and gallantry of the cameramen filming the plucky fight of the island's residents, A.A. men, R.A.F. men and sailors.

We Soviet cameramen are proud that in these grim days we wear trench-muddied military uniform. And on behalf of all Soviet newsreel cameramen, in giving greetings to our British and American colleagues, I should like to say with all my voice: "Friends! It is with blood and tears, children, brothers, fathers and mothers that the Soviet people pays for your having not yet suffered all the horrors of an enemy invasion of your country. But hatching dreams of world domination, man-eating Hitler also wants his killers and marauders to lay their bloody trail of rapine and conflagrations across your country too.

"About 200 cameramen work on various sectors of our front. A further 1,000 directors, assistants, editors, laboratory workers, cutters are engaged in producing newsreel issues that appear

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Shooting The War In New Guinea

An Interview With FRANK PRIST

By WILMA MADDEN

MAKING pictures in the South Pacific theater of war is certainly a hazardous and difficult proposition, but it's all in a day's work, according to Frank Prist, and he should know. Frank is one of Acme Newspictures war photographers and the first American civilian to return after our soldiers took over the major role in pushing the Japanese across the mountains and jungles of New Guinea and down to the sea at Buna.

Blond, blue-eyed and beamingly spic-and-span in his War Correspondent's Army officer's uniform, Frank spoke cheerfully of dirt, discomfort and disaster.

Bullets whizzed! There were near misses. Treks through jungle swamps where the going was so hard, and time so limited, that there was little time for rest, and none for sleep.

I turned to Mrs. Prist. "It must be hard for you to realize those awful things really happened to Frank. I can hardly believe such things take place even with the war news."

Frank answered for her. "I know how it must sound to you, because although I was in the thick of it just a short time ago, even to me, it seems like a crazy kind of nightmare. Everything is so much the same here at home. Seems hard to believe it's still going on down there!"

Frank spent eleven months "down under." Seven months of the time he was stationed at Port Moresby, New Guinea. From this base he made many trips overland on foot, by canoe, and plane to obtain his pictures. More than three weeks were spent in the front lines when the "Battle for Buna" was at its peak.

The enemy bombed Port Moresby constantly. Many of the 200 houses which comprise the city were wrecked during the bombing raids, which added to the scene of desolation surrounding the evacuated town. Port Moresby was the springboard for our successful drive on the Japanese, and many thousands of

American and Australian boys who arrived at this little port will never forget it.

Among them is the little company of writers and photographers who keep us informed on the progress of the war. Frank Prist made the photographs of Vern Haugland when General MacArthur presented him with the Silver Star for bravery. Vern, an Associated Press correspondent who once covered Hollywood, bailed out of a damaged plane, and spent forty-two terrible days in the jungle.

"The morale of our soldiers is magnificent! The war correspondents stacked up pretty well, too. Every man's a hero down there, though they'd hate to admit it. Sometimes after hours in a slit trench, or when dreaming over Mother's cooking, there was a little good-natured griping, but that seemed to be mostly for the fun of thinking up wisecracks."

When at the front a correspondent must carry along the full equipment of a soldier—except for weapons—as well as his photographic equipment. Soldier equipment consists of half a shelter tent, mosquito netting, blanket, toilet articles, water canteen, and "C rations."

Frank said they saved "C rations"—which consist of tinned pork and beans,

vegetable, meat and hash,—for special occasions, usually eating the front-line rations of bully beef and hard-tack.

Every two or three months Frank would fly back to Australia, on business. When on these trips he enjoyed the cleanly comfort of the "War Correspondents Convalescents' Home."

This establishment was maintained by all the war correspondents from the States. The boys rented a beautiful home in the suburbs of Melbourne, hired a cook, and painted a large sign in the above manner. Every correspondent or visitor of their profession was given a pair of crutches and photographed by the sign, but the boys were afraid to send these pictures home for fear friends and relatives wouldn't believe they were only spoofing. A few days at the "Home" was something to look forward to during the hard days at the front.

Frank was enthusiastic over the cooperative spirit evidenced by all men at the front.

"Shooting the pictures was not so much of a problem. There is no red tape at the front, and every one is ready to cooperate from buck privates to high-ranking officers. Weather conditions, and lack of equipment for processing presented the major difficulties."

The war photographer is his own boss. He decides what to shoot, and writes his own captions. Frank organized many of his shots so as to make a picture story of war operations.

"We sailed Feb. 17, 1942. I made pictures of the convoy on the way down. These were processed in Australia. When we arrived I made a great many pictures of General MacArthur, his family, and many other pictures of the Army personnel. This was interesting work. These pictures were also processed in Melbourne.

"At Darwin my troubles began. Film could not be processed for several reasons. The Army's supply of chemicals had been ruined by the bombings, and

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At top of page, left: Newsmen Prist's quarters in New Guinea; Center, Prist Leicaphotos a friendly "fuzzy-wuzzy"; Right: Shooting native belles—with a compact 16mm. camera. Above, Frank Prist with weapons, helmets and flag which are no longer of use to their original Jap owners.



Unseen Camera-Aces

I:

Maximilian Fabian, A. S. C.

By WALTER BLANCHARD

Some of Hollywood's finest cinematographers are virtually unknown to the world at large . . . sometimes even to people in the industry but not associated with the same studios. In some instances, they may perhaps receive screen credit under some appellation so vague it conceals rather than reveals their contribution to the picture. In others, they work anonymously, with never a line on the screen to direct credit toward a job well done. And they are almost never publicized, for the studio chiefs have the opinion that to do so would disillusion the public—as if that could be done in this universally camera-minded age.

Yet without these men and their quiet contributions to production, modern production would be impossible. It is with great pride, therefore, that we commence what we hope will be a lengthy series of articles on the screen's unsung heroes—the special-effects cinematographers. THE EDITOR.

IF YOU met him at the Camera Table of the MGM Commissary, you would hardly notice him if he weren't perpetually on the receiving end of friendly ribbing from his fellow-cinematographers, (which, by the way, he quietly enjoys) this shy little man with the greying hair and the sensitive face of an

artist. If you were a stranger, and introductions were in order, you would respond at once to such other names as Joe Ruttenberg, Bob Planck, George Folsy, Len Smith, and the others. But when your host introduced Maximilian Fabian, A.S.C., your mental reaction would be the equivalent of a blank stare,

for it has been something over eighteen years since he received screen credit.

Yet without his patient, tireless efforts many of MGM's biggest and finest productions could never have reached the screen. Remember that memorable scene in "Mrs. Miniver"—to many minds the emotional climax of the whole film—in which that hardy little fleet of motorboats assembled by night along sleepy British rivers to plough fearlessly into the Hell which was Dunkirk, to rescue an army—? His camera made it possible. Do you remember those thrilling scenes of naval battle in "Stand By For Action," which made the rest of the film endurable—? They came to the screen through his skill and patience. Do you remember that memorable scene of the interminable lines of trucks carrying soldiers to a World War I front in "The Big Parade" eighteen years ago—? His camera did it! Do you remember the earthquake in "San Francisco"—? It came to you through his lens and lighting!

For Max Fabian is a specialist in that most difficult of arts—photographing miniatures, and doing it so that even the camera-minded in the audience are unaware that they're not looking at the real thing. Perhaps the finest tribute he has ever received was when a gold-braided admiral in Washington remarked, after seeing "Stand By For Action," that he hadn't realized the West Coast Naval Forces had enough strength to spare from wartime duties to cooperate so fully with the motion picture industry. Those destroyers and battleships—the entire convoy, for that matter—were miniatures manipulated before Max's magic camera.

He didn't start out with the deliberate intention of becoming a miniature specialist. His first film job was, in fact, as far removed as possible from trick-camerawork, for he began as a projectionist in the old Garrick theatre in Los Angeles, some twenty-five years ago. But as he peered through his little porthole to watch the pictures unwind on the screen, some latent artistic instinct told this young Polish boy that he *must* get into a position where he, too, could create such visual beauty.

Inquiry told him that the stepping-stone to camerawork in those days was through the laboratory. So he got a job in the old Pacific Laboratory, and learned photography from the wet end. He learned quickly, too, for before long he was considered qualified to go out on a camera, and rose quickly to the position of First Cameraman. That was long before today's era of strict specialization; but he became what we would consider an ace production cameraman, photographing for John M. Stahl and other top-ranking directors of the day, and working for Fox, Metro, and others of the best studios of two decades ago.

Between pictures one day at Metro, he received a sudden call to go to one of the stages to attend to a little job that had to be done. When he got there, he found it was the task of photographing a

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Left and center: Two of art director Roland Anderson's preliminary scene-sketches for "The Story of Dr. Wassell." You won't see these scenes in the picture, as they were eliminated before the sets were built. Right: actual shooting is the easiest part, agree the author (left) and Cecil De Mille, as they line up for a well-prepared take.

Preparation Pays A Profit

By VICTOR MILNER, A.S.C.

FOR years a comparatively small group of us within the industry have been arguing that a system of more completely detailed preparation not only of scripts, but of all the physical details of production, in which the director of photography, the special-effects specialists, the art director, costumers, and others could work closely with the director and producer before actual production starts, would give us not only better pictures, but much more efficient production. The majority of the industry, however—including most directors and producers—have taken what they like to term the "practical" viewpoint: that such a system would be too Utopian to be practical, and that the potential economies, anyway, were vastly overrated.

Yet at the same time, these "practical" men of production have wondered how it was that Cecil De Mille could turn out the big, spectacular productions he does, and so economically. They've wondered even more how he could bring those productions in so consistently ahead of schedule, and often below budget, as well.

The answer is that De Mille utilizes to the full that same principle of exhaustive, cooperative pre-production planning which the "practical" men of the industry dismiss as visionary. He realizes that the really heavy costs of production are incurred only during the period of actual shooting. During this period, any loose planning or lack of coordination between the members of his key production staff will be reflected in mistakes and delays on the set. And with modern production costs mounting up at the rate of from \$15,000 to \$20,000 or more per shooting day, an avoidable delay of even a few minutes is prohibitively costly.

Therefore De Mille prepares for each production as carefully as a good general would prepare for the opening of a second front. He and his production staff—the director of photography, the art director, the costumer, the first assistant director, the special-effects experts, and others—literally live with the picture for months before the camera turns on

the first take. Once the picture goes actually into production, everyone concerned knows precisely what each scene and set-up is and—equally important—just when, where and how each is to be filmed.

For this reason there is almost no lost motion on a De Mille set, and virtually every inch of film included in the OK.'d takes go into the final cut of the picture. There are no retakes: in nine years' association with Mr. De Mille, I can remember retaking only a single scene.

With such coordinated staff-work there should be less surprise that his productions are brought to completion so quickly and economically. To name only two recent instances, "North West Mounted" was finished a full 14 days under schedule, and "Reap the Wild Wind," for all its technical difficulties, 12 days ahead of time. With a little figuring you'll see that this in itself resulted in a direct saving of something in the neighborhood of a quarter of a million dollars on each production. To this add the additional savings brought about by the fact that the surplus scenes, "protection-shots," and the like usually considered as part of the inevitable wastage of normal production are never made for a De Mille production. The sets for them are never built; the players never engaged; the shooting time and effort never expended, for they have been eliminated from the script weeks or months before shooting started.

As a specific example of how this method of pre-production planning works, let's consider the case history to date of De Mille's forthcoming production, "The Story of Dr. Wassell." It's scheduled to go before the camera about June 15th; but the script-writers started their work on it last July. As soon as the first draft of the script began to jell—some time in August—De Mille's assistant, Eddie Salven, started his phase of the planning. In September, art director Roland Anderson, costume-designer Natalie Visart, and I, as director of photography, joined the staff conferences on the picture. Transparency expert Farciot

Edouart, A.S.C., special-effects specialist Gordon Jennings, A.S.C., and Camera Department Chief C. Roy Hunter were not far behind us.

For the seven months since September, then, we have all participated in the many budget and story conferences which are such important parts of the business of getting a big picture ready for production. At many of these meetings, nothing directly affecting one's own phase of production may come up . . . but when such questions do arise—and sometimes they do with unexpected suddenness—De Mille wants to get an authoritative answer to it immediately.

In this connection, I'd like to mention for the benefit of those who do not know Cecil De Mille, that in spite of all the publicity about his being constantly surrounded by "yes-men," he will accept a well-founded "no" better than many another producer or director. But you must be prepared to back it up with cold facts! if you do, he will defer to your judgment. But woe betide the man who gives him a "yes" for politeness when the answer really should be "no" or—worse yet—takes refuge in an evasive "maybe"! Polite answers like that beforehand are usually forerunners of unnecessary mistakes and delays on the set. And these can't be tolerated . . . especially with production costs increased over 100% in the last year.

As the story and its treatment begin to solidify, several things begin to happen simultaneously. The first of these is research—especially on the part of Salven, art director Anderson, costume-designer Visart, and the studio's research staff. De Mille has always been a stickler for absolute technical accuracy in his pictures, and this is no exception. All concerned have delved deeply into everything available concerning the locations (China and Java) of the historical events the picture chronicles, and into the events themselves. In addition to the personal collaboration of Commander Wassel himself, every conceivable source of printed reference material, including eyewitness accounts and innumerable photographs, have been consulted. As many individuals who actu-

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Aces of the Camera XXIX:

Sol Polito, A. S. C.

By WALTER BLANCHARD

THE TERM "Director of Photography" owes its origin in no small part to Sol Polito, A.S.C., for it was he who, back in the early-Vitaphone days of sound-films, convinced the executives of Warner Bros.' studio that the cinematographer in charge of photographing a picture could be more valuable in a supervising or directorial capacity than he could while actually operating his own camera.

"Back in those days," he tells us, "the First Cinematographer on a production actually operated his own camera. If there was such a thing as a Second Cameraman with the troupe, he was there simply to operate an additional camera.

"Then came sound . . . and in those early days they didn't think they could cut the sound-track as flexibly as they cut the picture-film. This was particularly true at Warner Bros., where the sound was at first recorded on disc instead of film; but it applied equally throughout the industry, regardless of the method of recording. In order to avoid having to cut the sound-track (or disc record, in our case) we had to shoot every cut and angle of a whole sequence at one take. This meant using six or eight cameras, shooting from all angles at once, getting close-ups, long-shots, medium-shots, and everything else simultaneously. And in those

days there were no camera blimps: the camera and its operator were locked together in a big soundproof booth about the size of a grocery-store frigidaire. There they stayed until the scene was shot.

"Planning lightings and compositions for six or eight cameras, shooting from as many different angles, was a real problem. Doing that really well, and at the same time operating one's own camera too, proved impossible. So finally I went to the front-office executives, explained my problem, and asked that I be relieved of the task of running my own camera, so that I could more efficiently direct the work of the crews manning the other cameras.

"My request was granted. In practice, it worked out so successfully that the idea spread quickly throughout the industry. And though in time we all of us learned to cut the sound and picture with the same facility we had known in silent-picture production, the idea of the Operative Cameraman and the Director of Photography held on, to the great benefit of cinematographers and cinematography."

Since that time, too, Polito has carried on as one of the foremost members of the camera profession. This year marks his thirtieth anniversary as a cinematographer. During the last fifteen years he has been responsible for the camerawork of some of the industry's biggest and best productions: every year since the inception of the Academy Awards he has had a picture placed high among the list of nominees for the Photography Award, and sometimes for the Color Award as well. He has pioneered in many important innovations and developments, including the making of big exterior scenes on an indoor stage (which, by the way, has saved his studio tens of thousands of dollars on many a picture), and in the development of the wave and ripple machine which made possible the filming of marine exteriors indoors, without the use of process-backgrounds.

How did he get his start in the industry? Let him tell it: "My first job in the picture business was back in 1912, when I got a card as a duly licensed projectionist—I still have it, by the way—and with it a job grinding the projector in that now forgotten little Nickelodeon. And I do mean grinding: those were the days when the projectors, even in the most deLuxe-equipped houses, were operated solely by hand power.

"It didn't take very long watching the pictures I ground through my projector to make me decide I wanted to become a cameraman, and create the pictures, rather than just run them. So I began to cast around to find a way to get into the production end of the business, and especially to find a way to learn all the things I knew I would have to learn before I could be a real cameraman.

"That opportunity came when I met Tony Gaudio, A.S.C., who was then the Chief Cameraman for Carl Laemmle's

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THROUGH the EDITOR'S FINDER

WHILE we were sitting in a major-studio camera department the other day, the phone rang. After several minutes of conversation, the camera-chief turned to us and remarked, a bit wearily, "That was my opposite number at the so-and-so studio. This morning he called and asked if we could loan him four lenses he needed urgently. We loaned them to him, first having our shop check them carefully to make sure they'd fit any standard mount. Now he calls to tell us that though he uses the same kind of cameras we do, three out of the four lenses won't fit into his mounts . . . and he swears his mounts are 'standard,' too. Why hasn't somebody set up real, industry-wide standards on these pieces of equipment we all use—?"

This isn't an isolated occurrence. It happens almost every day, and in every studio, major and independent alike. It happens with every conceivable kind of photographic equipment and accessories.

Suppose one studio is at a production peak, and wants to borrow a camera from another where production is momentarily slack. The question immediately arises, will the camera from studio A fit into the blimps used by studio B? Assuming a blimp, too, is needed, will the blimps from one studio fit onto the tripod boom and dolly heads of the other? For that matter, would the borrowed camera and blimp combination meet the borrowing studio's standards for silent operation? We could name several studios—even using the same sound system—where the answer would be a decided "No."

Then, even if all these hurdles were adequately cleared, there's the problem of driving motors. Chances are that the motor on the borrowed camera might not operate on the other lot: it might be the wrong type of motor . . . the current frequencies in the two plants might be different . . . or the systems of synchronizing, or power distribution. And leaving aside the question of availability of a spare motor in the second studio (which would be doubtful, at best, if all that studio's "production" cameras were tied up) it is very probable that a motor built to coordinate with studio number two's cameras and sound or process synchronizing systems actually could not be physically applied to a camera from studio number one. We've known, too, of instances where a rented process projector had to undergo what amounted virtually to a major rebuild before it could be operated satisfactorily under the standards of another studio.

Before the war, this might not have a matter of particular importance. As regards photographic equipment, most major studios, at least, were pretty well self-sufficient. There was some lending and renting of big camera-booms and similar unusual equipment, but for

basic equipment—cameras, lenses, motors and the like—most studios had enough and to spare, even for times of unusual peak production. If any emergency need rose, well, new equipment wasn't particularly hard to get, and the emergency might well serve as an excuse to add something lastingly useful and charge it to the production's budget, rather than the camera department's!

But those days are gone "for duration." It would probably be letting a military secret out of the bag (even if we knew the exact figure—which we don't!) to say just how many camera outfits and lenses Hollywood's studios have supplied to the Armed Services. But it is a known fact that major studio camera equipment has been pared uncomfortably close to a bare minimum. And of course the purchase of new equipment is an impossibility for obvious reasons.

Therefore the borrowing and renting of camera equipment between different major studios, and even between major and independent studios, has increased to an amazing extent. And we are finding out what industry-wide standardization for such equipment would be worth—if we had it.

Talking about rectifying this situation now may seem like suggesting locking the stable after the horse has been stolen . . . and so it is, if you are thinking about complete standardization of every detail, small and large. But it seems to us that a great deal can be done in this direction right now, in the studios' own camera machine-shops, through simply correcting and standardizing such minor details as can be managed under today's conditions, and providing, of course, that the industry's camera, special-effects and sound experts can sit down together and face the questions realistically, without too much prejudice in favor of the individual studio or executive preferences which were the original cause of most of this lack of standardization.

And in view of present experience, isn't the thought of achieving real-industry-wide standardization of photographic equipment a tempting one to put down as the number one "must" for post-war planning—?



HAVE you ever noticed—whether in a world-famous professional organization like the A.S.C., or in the smallest of amateur movie clubs—that it's the members who don't often bother to show up at meetings who put up the biggest howl about how little they're getting out of the organization, while those who pitch in hardest to help make the meetings work seem to get the greatest pleasure out of their club's activities, and feel they're getting the most out of it—?

AS we begin to get into the period when the various studios are announcing their production programs for the coming season, it's gratifying to note that there is a very general tendency among most of them toward producing fewer pictures, but allotting bigger budgets and presumably longer shooting schedules to those they do make. A paramount reason for this change is that while all pictures are making money today, productions given the extra time and money which makes them more than just ordinarily adequate ones can command sufficient additional playing time in the theatres so that a comparatively few genuine "A's" can earn a larger total profit than the conventional program of a few "A's" and a larger number of cheaper "B's."

A very important by-product of this policy—though one perhaps not immediately foreseen by the front-office executives—is that it should almost guarantee better photography on such pictures as are made. Very likely, as this policy begins to take hold, executives in every studio will look at the rushes with the comment, "Migosh! What's got into that cameraman that he becomes a genius overnight?"

The answer will be simple. The longer schedule has simply given him an opportunity to do things he always knew how to do, but was never given time to put into practice. On the average "B-picture" schedule, which may range from ten days to three weeks, your cameraman has inevitably had to sacrifice quality to speed. With from twenty to fifty or more set-ups to be photographed each working day, he daren't do anything else. If it's a choice between using unimaginative (but safe and quick) compositions or lightings, and taking the few extra minutes on each set-up necessary for getting a better composition—perhaps by juggling some props, or moving a wild wall, or changing to a different camera-position—or for polishing the lighting more carefully, adding a lamp here to cast a decorative shadow, or rearranging a couple of others to get a more perfect effect—he'll find himself forced to take the safe "B-picture" course.

But give that same man those few additional minutes per set-up represented by a few added days or a week or two in the schedule, and he'll delightedly make use of it to give his picture better photography. The benefit of those few minutes per set-up may not turn a Joe Doakes into a Gregg Toland—but you can bet your last dollar they'll improve his camerawork as much as though the producer had called in a cameraman whose salary was a couple of hundred dollars a week higher!

A.S.C. on Parade

A very special salute from all of us goes this month to Capt. Ray Fernstrom, U.S.A.C., first of the 43 A.S.C.-members now in service to be wounded in action. We've just received two V-Mail letters from him which are well worth reading. The first, dated April 23rd (Good Friday) says, "Dear Bill and Fellow Members—Into the second year of Army life, and I'm really enjoying it. Tent living is healthy and I eat like a wolf, for our food is really good. Grand opportunities for movies, and I hope you'll see them all. I still have my old luck and am riding it hard. Yes, as you have noticed, I'm in the Air Corps now with wings, ribbon and double bars, which gives me a chance to use all my varied camera experience. I really feel 'on the beam' at last and am trying hard to do a good job of it. Drop in, Bill, on my brother Carl at Technicolor, and give my best to Dr. Kalmus, Mrs. Kalmus, Jerry, Rackett, George Cave, Bob Riley and the boys. Say hello to Cinecolor and all our old Hollywood pals. Drop me a line V-Mail. As ever, Ray." The second letter, written three days later, reads, "Good Friday came along. I was busy as usual—in the air—good movies—and got them—over the German lines. But my left leg where the thigh muscle is the hardest and deepest caught a hunk of steel from one of their anti-aircraft shells that popped close enough for the lens but too close for my leg. So now it's time out for a week or so in a grand British field hospital, where we have fresh eggs for breakfast, tea at ten and four, and a ration of whiskey each evening. These British X-rays and field stations, their immediate anesthetic with no after-effects, and their skilled, tireless surgeons positively astound me. I can never live long enough to sing enough praise of the British I have learned to know well. Regards to all, Ray."

The sincerest sympathies of the A.S.C. and its members go out to James C. Van Trees, A.S.C., upon the death of his younger son, Lt. Don Van Trees, who was killed in line of duty while serving with the Army.

Our sympathies, too, to Robert C. Bruce, A.S.C., on the recent passing of his wife.

Out best wishes, likewise, to Dan Clark, A.S.C., reported as convalescing satisfactorily from a recent operation.

At that last A.S.C. meeting—Archie Stout, A.S.C., happily back in town to stay after disposing of his tungsten mine, and beaming over a visit from his son, Junius, on leave from Navy service.



Months ago, when Henry Freulich, A.S.C., had just entered the Marine Corps as a buck private, we asked him for a picture. Since then, Henry has been busy going through Officers' Training and getting out into active service. But the other day Henry's uncle, the dependable Roman Freulich, sent us this picture of Capt. Henry Freulich, A.S.C., U.S.M.C. As Henry puts it, he's gotten rid of that Stage 4 pallor, and loves the life of a leatherneck.

Nick Musuraca, A.S.C., gets the effect-lighting assignment on RKO's chiller, "The Seventh Victim."

What well-known director of photography is so fond of gambling that he daily matches nickels with the waitress at a very major studio commissary to see whether or not he pays for his lunch—? And what Marine Corps Captain took him for five bucks by the same route the other day—?

Even in Washington THE AMERICAN CINEMATOGRAPHER and its staff are well known. A letter from Reed N. Haythorne, A.S.C., encloses an envelope addressed simply "Reed N. Haythorne, A.S.C., Staff Correspondent, AMERICAN CINEMATOGRAPHER, Washington, D. C." And it got to him all right! The contents, he tells us, was a letter from Carl Pryer, A.S.C., who, it seems to us, is overdue for another article for these pages.

And over at Warners, Sol Polito, A.S.C., after Technicoloring the stage numbers for "This Is The Army," switches over to complete the story part of the pic, as well.



The other day United Artists Producer Harry Sherman held a big celebration over the starting of his 50th "Hopalong Cassidy" western. Above you see Russell Harlan, A.S.C., expressing surprise on receiving a trophy for his outstanding work photographing all fifty of them.

Tony Gaudio, A.S.C., as soon as he finishes "Corvette K225" for Universal, moves over to RKO for "Revenge," their big Russian epic. Meanwhile, Vern Walker, A.S.C., hurries to Utah to get snow scenes for the same pic while the snow is available.

WILLIAM C. MARSHALL, A.S.C.

We regret to have to chronicle the passing of another of the profession's pioneers, the well-liked veteran William C. (Billy) Marshall, A.S.C., who died recently at the age of 58, after a long period of ill health.

Billy Marshall was a veteran of the industry, with innumerable notable achievements to his credit. He was one of the first, if not actually the first American cameraman employed by Pathé Frères when they opened their American studio in 1912. He photographed the first production made by the Fox Film Company, and was for more than a decade the ace cameraman for Adolph Zukor's Famous Players Company, later Famous Players-Lasky and now Paramount. During this period he photographed virtually all of the foremost stars of the early period, including Mary Pickford, Wallace Reid, and Rudolph Valentino, whose most famous picture, "The Sheik," Marshall photographed. During his many years of studio activity, Marshall not only lived through the period when cinematographic history was being made, but helped make a great deal of it himself.

During recent years, Marshall had been comparatively inactive professionally, due to injuries received in an automobile accident en route to location. But his friendly presence at A.S.C. meetings will be missed by all who knew him. The sincerest sympathy of the A.S.C. and its members goes out to his wife and friends.

PHOTOGRAPHY OF THE MONTH

PRELUDE TO WAR

Produced by the Special Service Division,
U. S. Army.

Distributed by The Motion Picture Industry.

This is the first of a series of "orientation" pictures being prepared by Col. Frank Capra, originally strictly for Army use, but now to be released theatrically to the American public. It should be a "must" on everyone's list, for it shows in unforgettable visual form just why we are at war.

The picture is made up almost entirely of authentic newsreel shots of the events leading up to the war, with a sparse sprinkling of staged inserts and close-ups to tie the action together. There are authentic shots of ten- and twelve-year-old Axis youngsters engaging in military manoeuvres with guns, gas-masks and gas which alone are enough to make any sane-minded viewer burn to wipe totalitarianism from the earth. There are intimate shots of Hitler, of the clownish Mussolini, and the bloated Jap warlords which speak volumes about the kind of insanity our world is fighting against.

Technically, the picture is of surprisingly good newsreel quality, and the most magnificent job of editing this country has yet produced. Capra employs filmic rhythm to build emotional effects in a way we thought only the Russians, and a few Englishmen like Lt.-Col. MacDonald's British Army Film and Photo Unit, understood. It is by long odds America's most powerful documentary.

ACTION IN THE NORTH ATLANTIC

Warner Bros. Production.

Director of Photography: Capt. Ted McCord, A.S.C., U.S.A.A.F.

Special-effects cinematography by Edwin B. DuPar, A.S.C.

"Action in The North Atlantic" is one of the season's best war films, and a distinguished credit to those cinematographers publicly credited. They have achieved greatly. But "Action In The North Atlantic" neglects crediting the one man who really deserves the most credit for what is one of the outstanding cinematic achievements of the year: Byron Haskin, A.S.C., who served as virtually the uncredited producer-director-editor of the film's most spectacular portions. As head of the Special-effects Department, Haskin personally directed and edited what we would estimate as roughly two-thirds of the production. From what we personally observed on the set and in the cutting-room, his work went far beyond conventional special-effects scenes: he dealt with whole sequences, which included the principals and spectacular special-effects. These sequences make the picture—and in them direction, photography and editing reach

peaks far above the rest of the production. Put this down as one of the "must-see" pictures of the year.

LADY OF BURLESQUE

Hunt Stromberg production; United Artists Release.

Director of Photography: Robert de Grasse, A.S.C.

Opinions may differ as to the entertainment and dramatic merits of this murder-mystery in its back-stage setting, but there can be no doubt that Robert de Grasse, A.S.C., has given it a vitally interesting photographic mounting. Sometimes, perhaps, it may be felt that he slightly overplays his camera through his use of unusual angles and arresting compositions and lightings, but all told, his treatment of the picture makes it vibrantly unconventional. His treatment of the players is, as always, smoothly flattering, in spite of the crisp treatment and melodramatic lightings he employs. All told, "Lady of Burlesque" is a picture which should entitle him to an even firmer hold on his acknowledged place as one of the rising generation of masters of the camera.

FIVE GRAVES TO CAIRO

Paramount Production.

Director of Photography: John F. Seitz, A.S.C.

This highly topical production marks another upward step on the path of cinematographer Seitz on his way back to the heights after several years of being buried on unimportant pictures. It is, in its harshly realistic treatment, quite a departure from his usual pictorial style, but from start to finish you can see the hand of a master behind every scene and set-up. His camerawork and lightings are beautifully attuned to the moods of the action and, as we've remarked on other occasions, Seitz seems to have an inimitable technique for projecting tropical heat visually, without ever seeming consciously to do so.

MISSION TO MOSCOW

Warner Bros. Production.

Director of Photography: Bert Glennon, A.S.C.

Special-effects cinematography by Hans F. Koenekamp, A.S.C.

Thanks to its subject-matter, this is a picture everyone will want to see, regardless of how he stands in his opinion of Soviet Russia. To what degree the picture answers the average American's questions about Russia, only our readers in Russia can answer; but the documentary quality in the edirection and general treatment of the production make it a notable departure in American entertainment films.

Photographically, "Mission to Moscow" is rather on the disappointing side.

Almost wholly lacking—except in the newsreel stock-shots generously intercut with the dramatic action scenes—is the documentary photographic quality needed to complete the air of authenticity imparted by Michael Curtiz' direction and the excellent writing and performances. In addition, Glennon repeatedly resorts to his characteristic trick in effect-lighted long-shots, of highlighting the middle distance and background, but putting just too much front-light on the foreground plane to let it be silhouetted, yet not nearly enough to be an honestly balanced filler-light in its relation to the background. The result is distressingly wishy-washy . . . the more distressing because it seems to be the only weak touch in the otherwise forthright and vigorous treatment of the dramatic aspects of the production.

DU BARRY WAS A LADY

MGM production (Technicolor)

Director of Photography: Karl Freund, A.S.C.

This picture is what the publicists would call "gloriously Technicolored"—but why, we can't understand. In a few sequences—notably Gene Kelly's spectacular solo dance number, and the "Black Inn" sequence—Freund's Technicolor artistry is afforded real opportunity, and rises to the artistic heights of which he is capable. The bulk of the rest of the production he has had to handle in routine fashion, which he does well enough, though after viewing what his camera has recorded, we still wonder why so much good film was wasted on indifferent material . . . especially with film rationed as it is today.

CABIN IN THE SKY

MGM Production.

Director of Photography: Sidney Wagner, A.S.C.

This is one of the best pictorial opportunities that Sid Wagner, A.S.C., has had in many a day, and he rises excellently to it. He invests this all-negro fantasy with excellent pictorial quality, and his personal lightings—particularly of Ethel Waters—add greatly to the dramatic values of the production. As entertainment, too, we found it enjoyable, though the musical aspects were a severe disappointment.

DR. GILLESPIE'S NEW ASSISTANT

MGM Production.

Director of Photography: George Folsey, A.S.C.

Here's a little program production which is a gem of photographic pictorialism, as might be expected in anything from George Folsey's camera. We can strongly recommend it as a first-class study in decorative lighting, and in Folsey's facile interpretation of the film's varying dramatic moods.



Left, a well-attended joint meeting of the Philadelphia Cinema Club (wearing identification buttons) and the Norristown Cinema Club. Right, the author, who for five years planned the Philadelphia club's programs.

Planning Club Programs

By FRANCIS M. HIRST *

Philadelphia Cinema Club

“WHY should we keep our movie club going; why not discontinue for the duration? It is difficult to obtain film, and if you are able to buy it you can't use your car or take trips to make movies. Where are you going to get speakers? Where are you going to get people to put on interesting demonstrations or anything else to hold a club together?”

“I'm surprised to hear a fellow like you say such things. Don't you know that movie clubs are a great booster of morale? Where else can one spend such a pleasant evening with so little effort? Don't you think it would be an awful let-down for any of the fellows to come home on leave and find the club doors closed? By the way, I don't recall having seen any of your films at the club. You must have some to show.”

“Well, I guess I do have some from the last trip I took, but I don't go in for it as seriously as you fellows do. I only use my camera to make a record of my trip. My films are still on the reels that came back from the processing station. I don't have any titles and I don't bother to cut anything out. That was our trip—so why throw part of it away?”

“I can't say that I agree with you on that score. Why not bring your film to the next meeting of the club? We can view it and offer constructive criticism. We can go further than that. I will bring a splicer and, with your permission, we can start to edit right at the meeting. This will give everyone an opportunity to see how it is done, and that which we do not complete at the meeting, you can finish at home. We can also give suggestions for titles

which you can shoot and add to the film, and I think that you will be pleasantly surprised at the result. You see we have planned a complete meeting with very little effort.”

It is not necessary to have guest speakers. Undoubtedly you have hidden talent among your own club members. How many times have you heard an argument between club members on the correct way to expose film? Surely the man who can give a good argument is capable of expressing his ideas at some meeting. Pick at random any phase of movie-making, and undoubtedly someone in the club will be versed sufficiently on the subject to give a talk—and somebody else, equally expert, can disagree with him and build up a very instructive pro-and-con technical program.

I would like to bet that any club could start these talks right now and they would continue long after the war has ended. I could also guarantee that each talk would hold the interest of the members to such an extent that the meetings would increase in attendance. All this worry about guest speakers is needless.

Our club has held two quiz contests between eights and sixteens, and another would be apropos. It is surprising how easy it is to find interesting questions to ask. Have each member turn in a question for a contest. On the night of the meeting, ask for volunteers—about four 8mm. fans and four 16mm. fans. Make your own rules in advance and have someone act as quiz master. You will find that a lot of humor develops spontaneously, and everyone benefits by the knowledge gained and fun created. I suggest that 32 questions be used. This will give each contestant four questions to answer, taking in all from 30 to 45 minutes.

One of the most interesting problems of movie-making is titling. So few of us really get down to this indoor part of the sport because of some little quirk in our nature that says it is too difficult, or that it takes too much time or even

that the train of thought doesn't run along that track.

Bosh! You need only to make the start to become fascinated with this part of the hobby. There are no set rules, for each film must be treated individually. Why not have three or four members who are adept at making titles collaborate and give a discussion at one of the meetings? Each could show his own film and explain how he went about making his titles.

One learns more quickly by doing rather than by seeing or hearing, so it would be well to have one or two titlers at the meeting. The opportunity of being able to assemble and shoot titles will overcome the chief obstacle in title-making, namely, the start. When one is convinced of the ease and simplicity of this operation, better films will result. It may be arranged for those who have never made titles to bring their cameras to the meeting and shoot some.

At the present time our club is running a series of educational films, obtained from the Harmon Foundation, entitled “You Can Make Good Movies.” Each film covers a specific phase of movie-making and shows in detail the many problems facing movie-makers, and how they are solved. One of these films could be shown in conjunction with your title meeting. Follow through with a prepared talk on this subject, and you will find that one of the most interesting meetings of the club has ended enthusiastically.

Do you have members who cut their own records? We have at our club, and several demonstrations have been given. To be more precise, at one of our former meetings a member spoke into a microphone, adding narration as his film was shown on the screen. Immediately the film was shown again and the recorded voice played back. The ease with which this was accomplished surprised and delighted the club.

Of course, hours of work are required to make a complete musical accompaniment for a film, selecting the proper music and sound-effects and the correct narration. Here again, as in making titles, each film must be treated individually, for records must be carefully chosen to complement the mood of the film. It is not my purpose to discuss the method of dubbing in music and sound effects, but I think it sufficient to show the possibilities for a club meeting.

Some time ago our club was in need of a new screen. One school of thought favored the beaded screen, while the other considered the halftone most desirable. To settle all arguments, two screens were procured, one beaded and the other halftone. A film was selected and shown, first on one screen and then on the other. We then butted the screens, side by side, and projected the film again. A white light was next played

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* The author of this article writes on the subject of planning club programs from a basis of practical experience—not theory. For more than five years he has served as Program Chairman of the very active Philadelphia Cinema Club with results which require only a glance at reports of P.C.C. activities as published in our “Among the Movie Clubs” page to speak eloquently for themselves. Often in reading these reports prior to publication, we've wished we could be in Philadelphia and participate too.—The Editor.

Rudy Maté, A.S.C. (standing at left in lower picture) making two of the angle-shots he discusses from "Pride of the Yankees."



"CHEATING" ON CAMERA-ANGLES

By RUDY MATÉ, A. S. C.

ONE evening, not long ago, one of my friends who is a 16mm. amateur said to me, "Rudy, I wonder if you professionals realize how we amateurs envy you, and the resources you have to work with? Take the matter of angle-shots, for instance. When you professionals want to make a shot from an unusually low camera-angle, you think nothing of calling in a couple of carpenters and tearing a hole in the floor big enough so you can get your lens right down to floor-level. If you want to make a straight-down shot from a high angle, you've got big camera-booms, and special tripods and heads that permit you to point the lens straight downward. We amateurs can't do that. Unless we try to get by with a hand-held shot—which are just as bad form in serious amateur circles as they are among professionals—we're restricted by the fact our tripods will only go so low, or so high, and that our tiltheads have a very restricted vertical arc."

This surprised me, for as I told him, most professionals feel the shoe is on the other foot. We rather envy some of the characteristics of 16mm. and 8mm. cine-cameras, such as the extreme focal depth of substandard lenses, which give the amateur "pan-focus" possibilities 35mm. can't even approach, and the compact handiness of even the larger amateur 16mm. cameras which let them get into positions from which you couldn't work a studio camera.

Besides, the amateur, even today, can get or build several little accessories which will give him, at very small cost, the equivalent of the "high hats" and other special gadgets we use when the script calls for getting unusually low or high angles with our big Mitchells.

For example, suppose one wants some

shots from a very low camera position. Do you know those little, round metal mounts, not much larger or thicker than a pancake, and fitted with a standard tripod-screw, which dealers use for displaying home movie cameras in their showcases? Well, get yourself one of those. It will prove more easily obtainable, I've no doubt, now that your dealer has so few cameras to display on them! And if you detach the tilthead from your tripod and screw it onto this base, you'll have a very excellent low-angle mount or "high hat" for your camera.

If your camera doesn't balance properly on this mount when you've tilted it to the upward extreme, you can usually cure this by nailing or screwing the flat display base to a pair of crossed 1x4's long enough to extend about a foot beyond the base. Sometimes these bases have holes already drilled in them through which you can put your nails or screws (the bases of "Dinky Inkie" do), but if they haven't, a few minutes' work with a small metal drill will correct the omission.

If you want to mount your camera at "baby tripod" height—say one or two feet above the floor, but lower than your regular tripod will go—you can make use of the same principle, but use a thicker block like a section of 4x4 or 6x6 under the display base.

At this point my friend interrupted to remark that in extreme low set-ups the handle of most amateur tripod-heads might strike the floor and interfere with getting the maximum tilt. Well, I don't believe there is any law saying you can't use a shorter handle—and you can make one (or a longer one, too) by simply buying a screwdriver with a shank the right size to fit your tilthead, cutting off its blade to the approximate

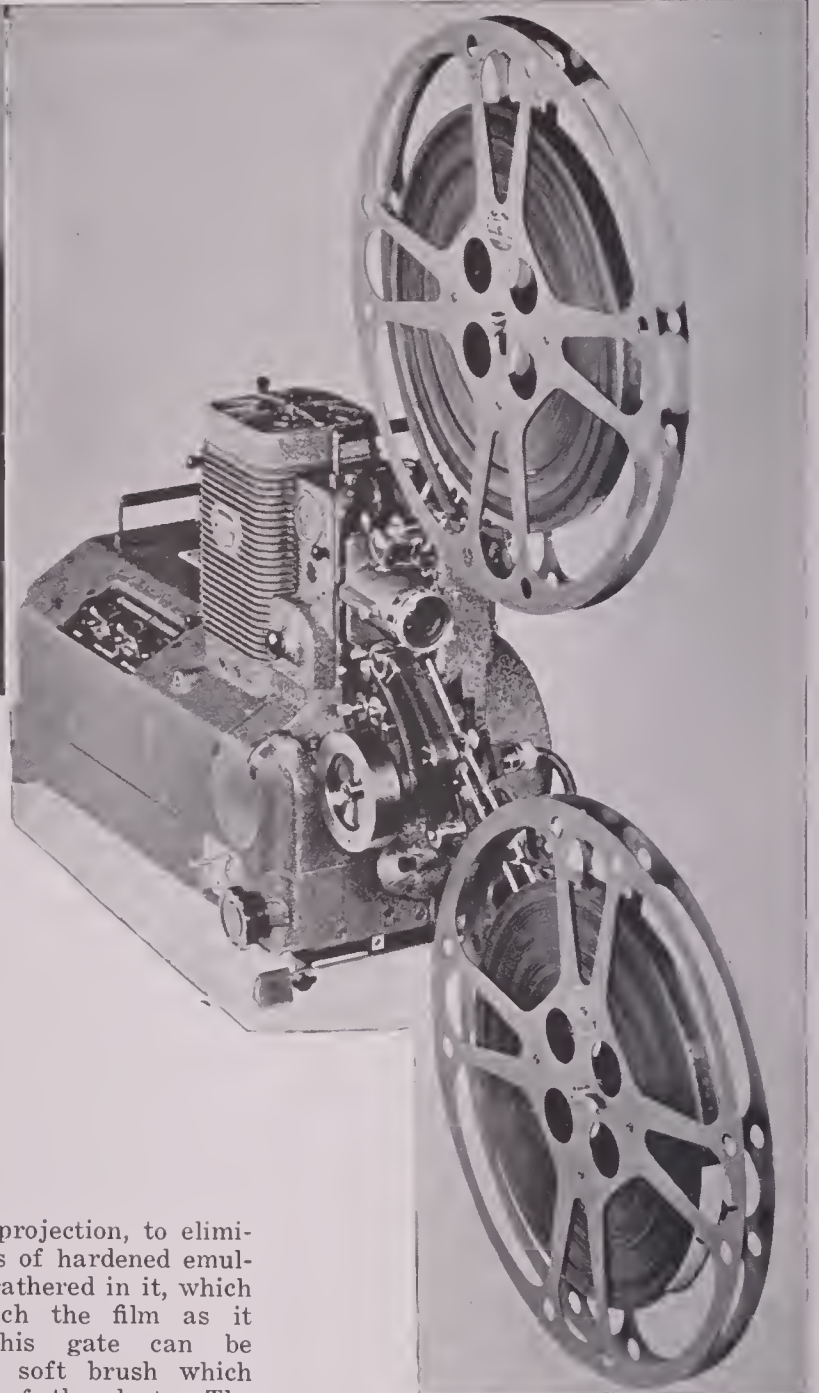
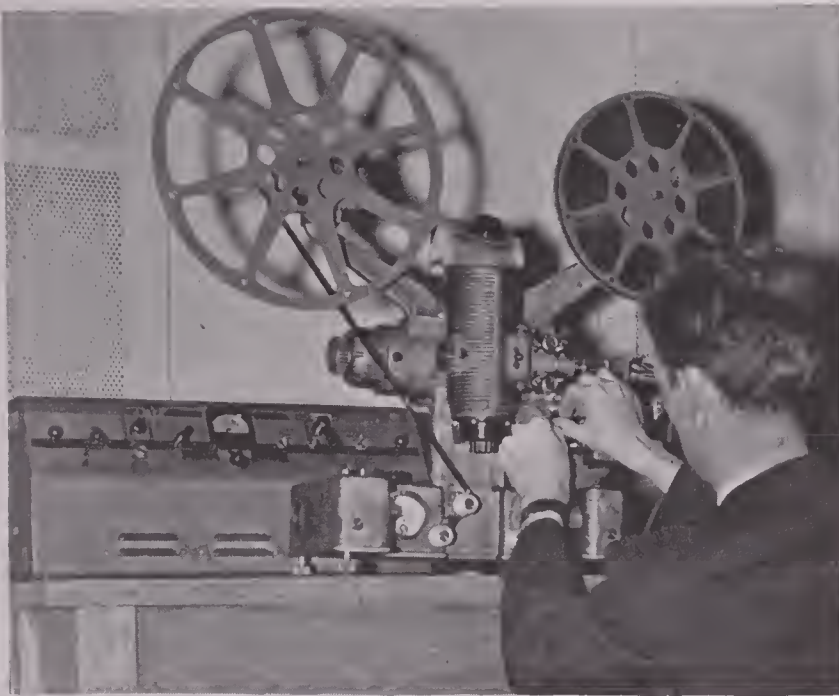


length, and threading the shank with the correct screw thread to fit your tripod.

As for higher shots, with the lens pointing vertically downward, that is also easy. They make quite a variety of tiltheads for still-cameras; you've probably seen them in your dealer's shop . . . wooden or metal affairs which can be screwed to any tripod, and which are hinged so as to permit the camera 90° up or down, locking in place with a slotted brace and a knurled-headed screw. The commercial types don't cost much, or if you're handy with tools you can make your own. Replace your regular tilthead with one of these and you will find little trouble in making most vertical shots.

If your shot demands more height than your tripod will afford, or if your lens-angle is such that you would be likely to include the front legs of the tripod in your scene, there is a little trick you can borrow from professional practice. First, plan your shot so it can be shot in or very close to a door. Then mount your tilthead, by means of one of those

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Care and Operation of 16mm. Sound Projectors

By D. LISLE CONWAY

President, Syracuse Movie Makers Association

SIXTEEN millimeter motion picture sound-projectors, like any other precision-made instruments, must be handled carefully and given good attention. If they are abused by being banged around, allowed to become dirty or grimy, and are not lubricated properly they will set up the most ungodly noise in a room-full of quiet people that can be imagined. Sometimes, they will just simply lay down on the job without a moment's notice and refuse to function, leaving a very red-faced projectionist and a disappointed audience. Then, too, there are certain parts of a projector that need frequent checking and sometimes replacements. These are the projector's lamps and amplifier tubes. A few simple rules will help to avert most of this and assure trouble-free projection.

Keep your projector clean! As with films, cleanliness is also a paramount rule with projection equipment. The lens should be cleaned periodically, or whenever dust or fingerprints appear of its surfaces, with lens-tissue or better yet, with cotton moistened with lens-cleaning fluid. Both the fluid and the tissue may be obtained from almost any optical house or optician. Avoid using harsh cloths for lens-cleaning purposes as these will scratch the polished glass surfaces and eventually affect the sharpness of the picture on the screen.

The projector picture gate should be

cleaned before each projection, to eliminate any dust or bits of hardened emulsion that may have gathered in it, which will, in turn, scratch the film as it passes through. This gate can be cleaned by using a soft brush which will take out most of the dust. The edges of the picture aperture may be carefully scraped with a piece of bone or an orange stick. Never use a piece of metal in doing this as you are liable to scratch the surface of the gate.

If the gate becomes gummy from a collection of oil or grease, a strip of lintless cloth, moistened slightly in alcohol or film cleaner and rubbed up and down over the deposit lightly, will dissolve and remove it. The claw aperture should also be cleaned by the same method as it, too, will collect dust, oil, and dirt particles.

The sound gate of the projector must also be cleaned at regular intervals, as dirt and oil collecting in it will not only lower the volume of the sound but will also distort the quality of the sound heard from the speaker. Dirty sound gates not only affect the quality of the sound, but will in time scratch the sound tracks of the films passing through it so that the sound will become crackly, noisy, hissy and unintelligible, even when played on perfect projectors.

Some sound drums, as on the Victor projectors, may be readily detached for

cleaning purposes, by means of a thumb-screw. Others using the ERPI-type gates, such as the Holmes, are opened up and cleaned in a different manner. Consult your instruction manual for information as to this. Make sure that all sprockets and external points are kept free from oil or grease so that they will not dirty the film.

Most projectors need only a little oil, but they do need it, and at regular intervals, too. *This is most important!* Correct lubrication of moving parts in all mechanisms is essential if the mechanism is to run smoothly and quietly. Over-oiling can do as much damage as under-oiling in many instances, so consult the lubrication chart of your projector and follow its instructions religiously. When oiling, be careful not to get any oil on the belts, picture gate or sound drum. Again let me stress that the lubrication of your projector is most important—learn to do it right, and when necessary.

Projection bulbs are becoming in-

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Better Pictures With Less Film

By HAL HALL

WITH vacation time just around the corner, for those who will have vacations, many amateur movie enthusiasts are now worrying over their film supply for filming of those summer vacation movies. Curtailment of film for civilian use has put quite a crimp in home movie making, with little hope for relief in sight.

However, the film shortage really should not cause a great deal of worry on the part of intelligent users of 8-mm. and 16mm. cameras. As a matter of fact, the wartime film-shortage might well prove a blessing to many amateur movie makers, for it will tend to make them more careful and perhaps prove to them that in years past they have wasted many hundreds of feet of film on unnecessary shooting.

From my own experience I can sincerely say that it is possible for any amateur to come up with just as much *edited* footage during this year's vacation period, but with only one-half the usual amount of film actually exposed as in prewar years. If the home movie maker will adopt the slogan, "more finished picture on less film," he will not only come back from his vacation with better pictures, but also at considerably less cost.

The secret of getting plenty of excellent pictures with less film lies wholly in careful planning. The ordinary vacationer starts on his trip with no thought of what he is going to film. In prewar days he went to his photographic dealer, bought a vast amount of film and started out prepared to shoot anything and everything that suited his fancy; he would come upon a beautiful and breathtaking vista: out would come the camera and he would grind and grind and grind, with no thought of footage. Around the next turn of the road he would stumble across another scene still more gorgeous, and again he would over-shoot. Throughout his entire vacation he would expose endless feet of film whenever he turned his lens upon an interesting subject.

Vacation over, our cameraman would then set to work editing his film. Then, and only then he would discover that he had to throw away hundreds of feet of film or else have a slow, dragging, boring film to show his friends.

My suggestion is to edit your pictures before you shoot them. If you do that you will find you will not need half the film you have used in the past. It is a simple thing to do if you make up your mind to it. And it will save you money.

A good way to set about this is to write down on paper the things you want to include in your vacation film. You should have a general idea of where you are going and what you are likely

to see, so it should not be difficult to roughly lay out your "scenario" or plan. Next, decide the length you think you will want your completed film to run. Get all this definitely in mind before you start out.

Then, when you discover a bit of scenic beauty you want to shoot decide how much footage you will want of it in your edited picture before you start shooting. If you decide on fifteen feet, ten feet or twenty-five feet, shoot just that and no more.

If you happen to be planning to attend a rodeo on your trip, plan carefully and watch your footage, for in the excitement of the occasion you are likely to overshoot greatly. Most amateurs at such an event are prone to shoot too much long-shot material. Most of the long-shots are eventually thrown on the cutting room floor—so why shoot them?

At a rodeo I would suggest you check up on the events ahead of time. Decide which you think will be the most interesting. Then prepare your shooting outline somewhat like this: 15-foot pan shot showing the crowd. 10-foot medium-close shot of horses in corral. Eight-foot medium-close shot of riders sitting on corral fence. If you see small child peeking through the fence, get a 4-foot close-up of him for human interest. If there is a particularly ferocious bull pawing up dirt and snorting in a corral, try to get about 10 feet of him as close as possible. If you can't get close, don't shoot it. Get close to the chute out of which the horses come into the arena and make five to 10-foot action shots as they start into their first and wildest bucking.

If you see a rider is fairly good, hold your shooting until the horse really gets into action. Then train your camera on him and get about ten to fifteen feet of that action. Usually the rider will be thrown in that length of time—if you wait for the horse to really get seriously bucking. Don't start shooting from the time the horse and rider appear until it is all over. Be ready for accidents, and if a rider is down and about to be trampled swing your camera and get that, but don't keep on shooting after he is rescued.

In all of your shooting, whether scenic or action, cut down on your long-shots and get more close and medium-close shots. You should long ago have noticed that in the making of professional films, long-shots are only used to establish the action or locale, after which the cutter "moves in" to closer angles. Follow the same procedure in making your films.

That it is very feasible to determine the length of each shot before shooting is being proven every day among the smaller independent film producers of



A sequence like this tells its story of a chuck-wagon lunch perfectly—and with a little planning, you can shoot it without wasting an inch of film!

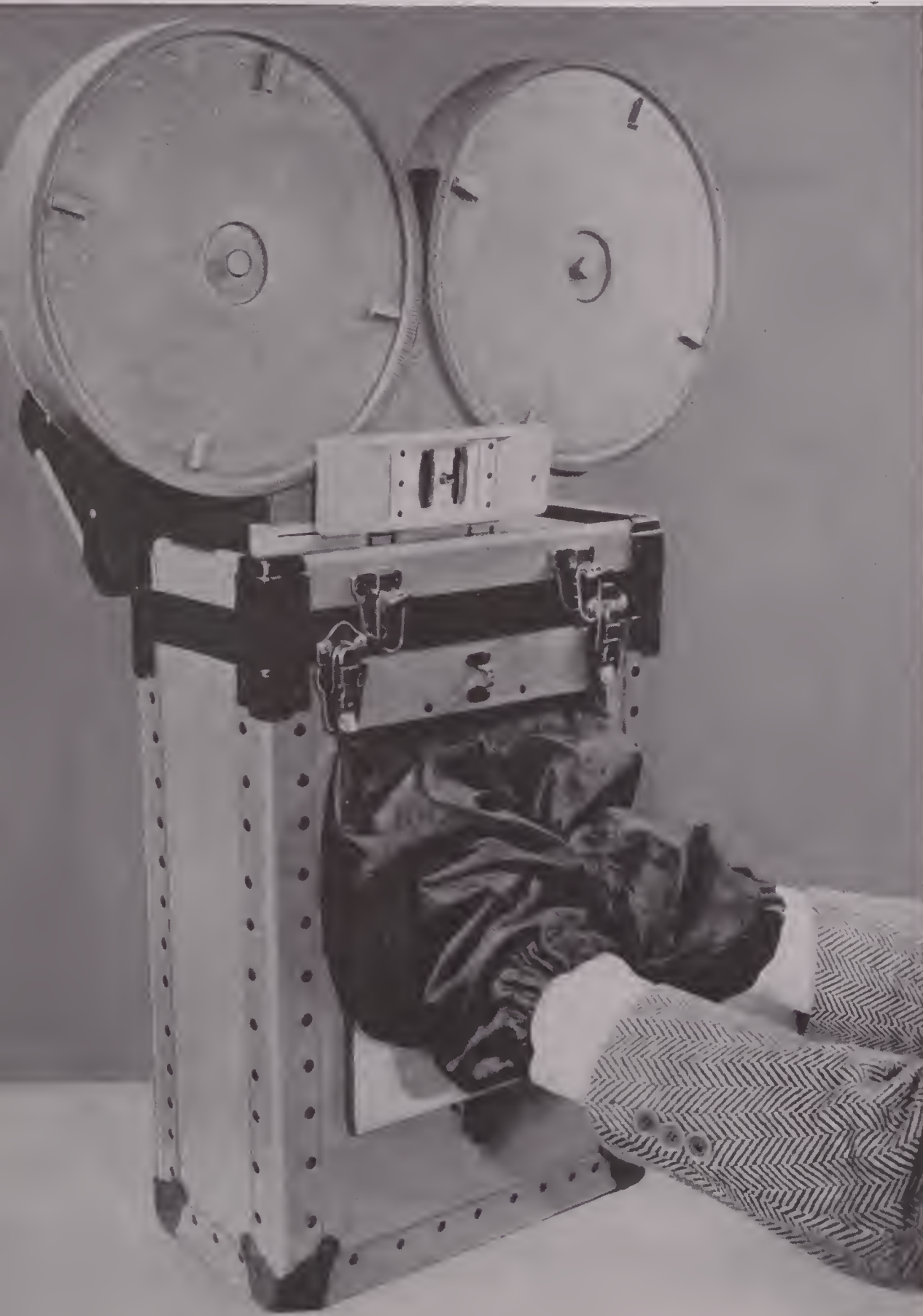
Hollywood who are compelled to make their pictures on a small budget. This writer, away back in 1926, first had occasion to use this system in directing a series of one-reel pictures that were released by the then well-known Tiffany Company. We were using the old two-color Technicolor process, and were making the pictures on almost a shoestring.

In those days the negative was hypersensitized in Hollywood and had to be shipped in iced containers to wherever it was to be used. The *negative cost fifty cents a foot*, which was considerable. On a limited budget you had to figure to the foot, almost, or you would lose money. You ordered just what amount you needed. If you had any left over it stood a good chance of spoiling unless you kept it packed in ice all the time.

When I prepared to make the first of
(Continued on Page 230)

CAMERA EQUIPMENT COMPANY

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The New Type Removable Head

★ The new removable head features the "Professional Jr." Tripod. It is now possible to remove the head from the tripod legs base by simply loosening a nut. The tripod head can then be mounted on a separate base for low setups.

The friction type head gives super-smooth movement and 80° tilt. A generous sized pin and thread lock nut. "Spread-leg" design affords utmost rigidity. A "T" level is built into this super-precision tripod. Available in 16mm E.K. Cine Special, with or without motor, and with or without alignment. Conditionally guaranteed 5 years. More information on the With Removable Head is contained in

The Field Developing Kit

★ The kit serves as a portable darkroom for developing motion picture film in the field or on location. It holds up to 1000 ft. Mitchell, Bell & Howell and other film available for Cineflex magazines. The kit includes two size thermos bottles for developer, hypodermic syring and data will be sent upon request.

"Professional Jr." Tripods, Developing Kit and Field Developing Kit are used by the Camera Equipment Co. are used by the Strategic Services and other Gov't Agencies and 35mm motion picture producers.



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e tripod. The top-plate can be set for
otor; 35mm DeVry and B & H Eyemo
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Shooting Kit

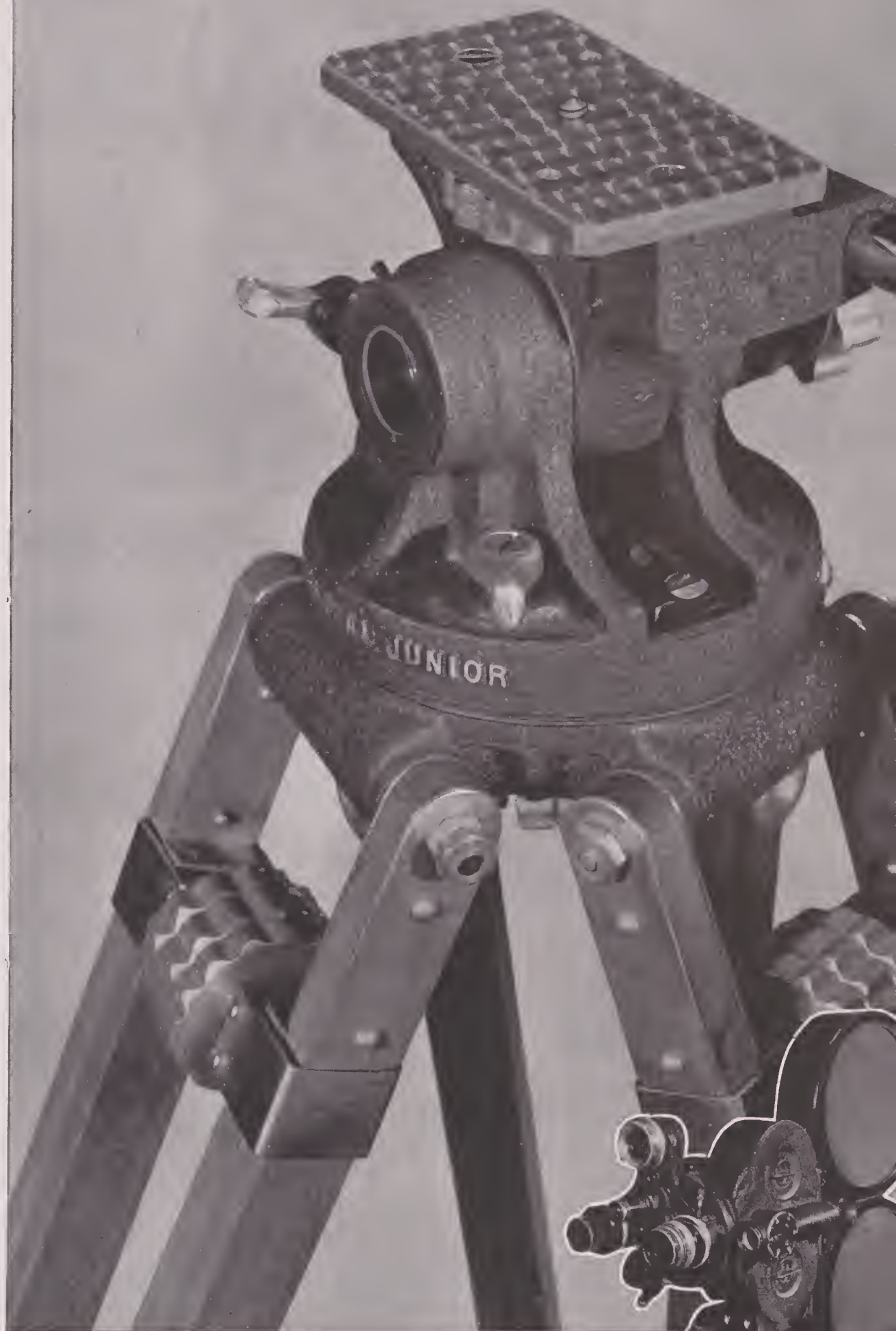
for developing hand tests of 35mm
n. The kit is equipped to take 400 ft.
all magazines. A special adaptor is
shooting kit is furnished with 3 special
and water. More complete descriptive

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"Hi-Hat" and Shiftover Alignment Gauge

★ Illustrated is the B & H Eyemo camera mounted on the Shiftover Alignment Gauge and "Hi-Hat" low-base adaptor. The "Hi-Hat" low-base adaptor takes the "Professional Jr." tripod head for setups where the tripod legs cannot be used. The Shiftover device (designed by Camera Equipment Co. and patent applied for), is the finest, lightest and most efficient available for parallax correction for the Eyemo Spider Turret prismatic focusing type camera. The male of the Shiftover attaches to the camera base permanently and permits using the regular camera handle if desired. Further data about the "Hi-Hat" and Shiftover will be sent upon request.



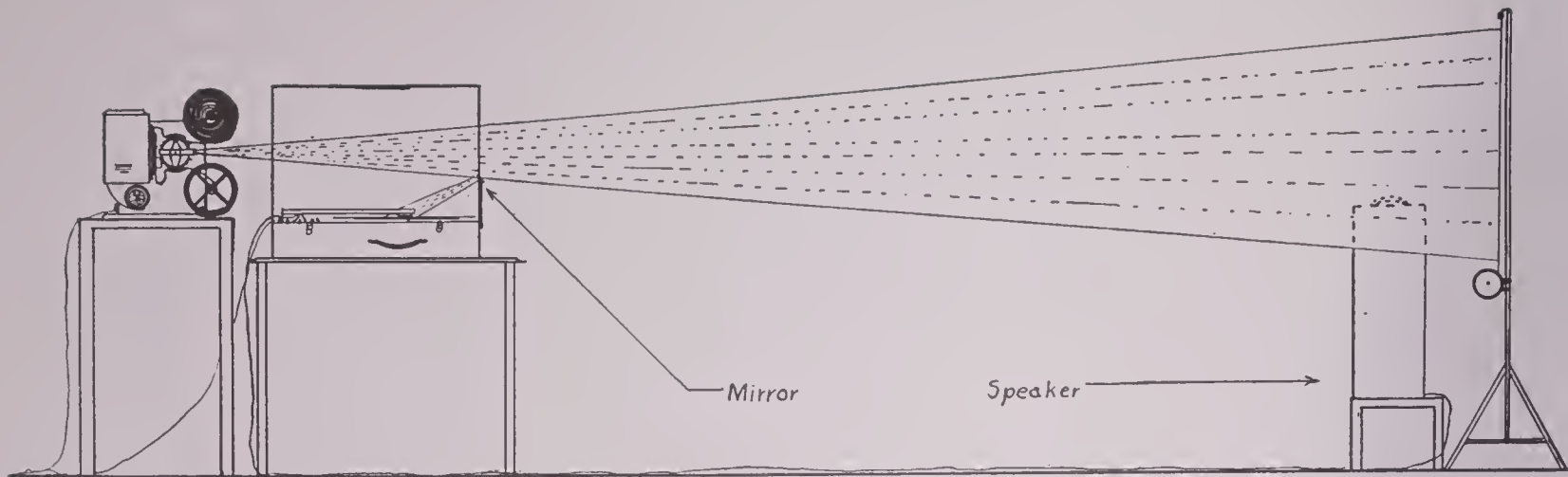


Illustration showing equipment setup for light reflection on stroboscope.

More About "Strobo-Sync"

By S. JEPSON,

Secretary Amateur Cine Society of India

IN recent issues of THE AMERICAN CINEMATOGRAPHER I have read articles by D. Lisle Conway and others regarding the stroboscopic method of synchronizing 16mm. and 8mm. films with sound-on-disc. These interested me very much, as we out here in Bombay have done quite a bit of successful work with this easiest and least expensive method of adding sound to silent amateur films. And since Mr. Conway asked for any further information on the subjects from other amateurs who have investigated this system, here are a few practical tips from our experience which may help other amateurs overcome their difficulties.

For example, with some of the lighter recorders put up in portable form, there is a difference between the recording and play-back times. This is obviously due to the fact that during recording the steel needle is cutting, but when playing, the needle is, of course, merely riding in the groove. I have found this cutting lag (shall we call it?) to vary as much as 10% to 20% over the play-back timings. There is also a slight variation between the lag on the outside and inside of the disc, though for practical purposes this may be disregarded, provided you do not cut right into the middle of the disc near the label.

I have therefore found it desirable to take time with a stop-watch when cutting with a strobo-synced disc. The play-back time is then noted, and I keep an assortment of strobo-discs and can work out mathematically from the lag what disc will be required for synchronization in playing.

This sounds a little complicated, but in reality it is not, and will enable exact synchronization to be achieved even when there is this irritating difference

between cutting and play-back time. I have found that a difference of three bars in the play-back stroboscope will meet the case, and if, for instance, I cut with a 39-bar strobe I can play-back on 36 bars to the circle. I had an artist make me up a set of master strobe discs ranging from 35 to 42 bars, and made negatives of these so that I can make photographic prints either by contact or enlargement to stick onto the records. If you don't want to go to the trouble of photographing the drawing, you can have it made with India ink on tracing-paper, which can be used as a negative for printing.

Another method of compensation is to cut at 80 r.p.m. and play back at, say, 76 r.p.m. by having a spare pulley for the friction drive of the recorder transmission below the plate. I have arrived at this method and find that if I cut at 80 r.p.m. I get a correct pitch of voice. If the voice seems too high, the play-back time is too fast, of course. When using two turntable-speeds in this way, one of course keeps the same strobe disc.

Another uncertain factor is that after playing some scores of times the play-back time increases with these soft acetate discs. Therefore it is necessary to put the original play-back time on the label, and check it after some months. All one has to do then is to fit a strobo-disc which permits a slightly slower rate of playing for synchronization.

I imagine this difference is due to the fact that the grooves become polished by the needle. I have had some discs over a year and played them hundreds of times (they are still very good except where scratched with side-slipping) and after I have altered the strobe for this wear-and-tear adjustment I have not found it necessary to do so a second time.

The weight of the pick-up head is important, because if it is too heavy the needle will not travel on these discs, or may damage the grooves, while the wear on the disc will almost certainly be increased. This weight may be reduced either by a small spring at the end of the pick-up arm, or by a counterpoise weight to lighten the weight of the pick-up end of the arm. Trailer needles, which have a bend in the middle, will track on heavier pick-ups without trouble. Thorn or cactus needles are good for drawing-room work, but lack the volume of metal needles for large halls. The thorn must also be of the right shape, and not too finely pointed or it will break.

Mr. Conway illuminates his strobo by a mirror near the projector's gate. If the light spilled from the gate does not come through the shutter movement, then this idea will not work. And in some projectors in which the shutter is placed in front of, rather than behind the gate, the light is spilled from the gate, but not through the shutter. (The old Eastman "Model A" is an example of this.)

A better idea is to place a piece of optical glass (an old negative, perfectly clean) in front of the lens. The picture can then go through to the screen, while an image reflected from the front of the glass can be thrown onto the turntable, providing sufficient light for lighting the disc. If the optical quality of the glass is good, the focus of the projected picture should not be affected (most theatres project through a glass window, you know) and there should not be any noticeable loss of light in the projected image. If the focus or illumination should be affected, this glass can be so placed that it can be removed, or merely placed in position now and again to test synchronization or to resynchronize if the speed has been altered to make up lost time through picture and record getting out of step. This method is simple and very effective, and the phonograph turntable can even be placed at the side.

In a small room the turntable can be illuminated from screen flicker itself, and can thus be placed near the screen.

(Continued on Page 228)

There may be
Fewer Pictures
and
Better Pictures

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The Better Pictures
are photographed with
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NEGATIVES

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AMONG THE MOVIE CLUBS



7 Clubs Meet Jointly in L. A.

On Tuesday evening, May 11th, the Los Angeles 8mm. Club held a joint meeting with the Water & Power Camera Club, a group composed entirely of employees of the Los Angeles Dept. of Water & Power. The spacious Southern California Edison Auditorium had been donated for the evening and invitations extended to neighboring clubs, including the L. A. Cinema Club, the Cine Club of Glendale, the La Casa Moviemakers of Alhambra, the Southwest 8mm. Club, and the Long Beach Cinema Club, all of which sent sizeable delegations, resulted in a packed house.

The meeting opened with the singing of our National Anthem. Hereupon followed the screening of visiting fellow members prize winning films. Shown were: "South Sea Island Fever" by Newell Tune; "American Indians" by Mrs. Mildred Zimmerman; "Ten Gallons of Gas" by Leo Caloia; all members of the Los Angeles Cinema Club. "Utah—Land of Enchantment" by D. A. Powell, of the La Casa Movie Club of Alhambra; "Mr. X" by Norman L. Brown, President of the Cine Club of Glendale; "Calumet's Xmas Contest" by Mrs. Jean Holbrook of the Southwest 8mm. Club.

The program wound up with the showing of two professional 16mm. sound films in Kodachrome: "Railroadin'," a thrilling picture on the railroads of the nation, produced by Jack Boland, who was introduced, and "Curves of Color," by General Electric, depicting the latest development in the matching and recording of color graphically.

A. W. APEL,
Secretary-Treasurer.

Philly, Norristown, Exchange Honors

The old adage "Variety is the Spice of Life" works for movie club programs. To add variety to a neighboring club's program is not as difficult as the sug-

gestion seems. Last month the Philadelphia Cinema Club arranged a program for our neighboring club in Norristown.

The Cinema Club of Norristown reciprocated with a program at the May meeting of the P.C.C. Highlighting the evening's entertainment were "Nassau," 8mm., by Pres. Julian W. Barnard; "This Is Florida," 16mm., by Vice-Pres. and Mrs. Oscar Rahn; "Christmas," 8mm., by Merrill Bean, and "Scenes of Pennsylvania," 16mm., by Linford Umstead.

The fine films shown at our meeting justify the pride which Norristown has in her amateur movie group. This inter-club co-operation has resulted in a program for each club with the minimum of effort, better club relations, new friendships formed and above all, an interesting meeting which will long be remembered and perhaps become an event to look forward to annually.

One of the problems which faces all movie clubs is that of obtaining members' films to show at meetings. Most members seem to have the same obsession—fear of criticism. A member may say, "I would like your criticism of my film." The sad part of it is that he wants your help but receives instead a hurt to his pride. A solution to this problem may be found in a film rating sheet, wherein a member receives an average and will try for a better score on his next film. The technical committee could use this sheet in an informative manner to aid the filmer in improving his work.

The Philadelphia Cinema Club has such a sheet that has worked out quite well for our club and we would be happy to co-operate in standardizing a film rating plan among all movie clubs. If interested, please contact: George Pittman, 1808 E. Tulpehocken St., Philadelphia, Pa.

FRANCIS M. HIRST

Prize Films in Syracuse

The May 4th meeting of the Syracuse



Left: Long Beach Cinema Club officials christen the first sound-projector owned by an American amateur club. Left to right, President Claude Evans, "Assistant-secretary" Pat Smith, Clarence Aldrich, Treasurer A. W. Nash, Vice-President Mildred Caldwell, and Secretary Lorin Smith; photo by Cliff Lothrop. Right, above, officers of the Norristown Cinema Club who conducted the May meeting of the Philadelphia Cinema Club. Left to right: Vice-Pres. Oscar Rahn; President John W. Barnard, and Secretary-Treasurer Wilbur Harris. Below, P. C. C. officials. Standing, Francis M. Hirst, Publications; Dr. Robert Haentze, Technical; Adolph Pemsel, Program; William Brink and Wilmer Coles, Executive, and Herbert E. Moore, Membership. Seated: Secretary James R. Maucher; President George Pittman; Vice-Pres. Arthur Hurth, and Treas. Herbert L. Tindall; photo by H. E. Moore.

Movie Makers' Assn. was featured by a comparison of members' cameras, tabulating the good and bad features of each type in the same way projectors were compared and tabulated at a recent meeting. At the May 18th meeting, three films from the library of THE AMERICAN CINEMATOGRAPHER were screened. These were "Solar Pelexus," "Ritual of the Dead," and "To the Ships of Sydney," all International Prize-winners from A.S.C. amateur contests. The Club, by the way, is also launching its own publication, a 4-page mimeographed journal, "The Viewfinder," announcing and chronicling club activities.

HARRIS RUSSELL

Right and Wrong in Indianapolis

Dr. Wm. E. Gabe was host at the April 21st meeting of the Indianapolis Amateur Movie Club. He showed several of his clever films, including "Right and Wrong," an 800-ft. Kodachrome (16mm.) showing all the wrong things to do in exposing Kodachrome, followed by the right way to do the same scene; "Potpourri," a clever and very interesting film showing what can be done with odds and ends of film such as all amateurs accumulate; and "Spring Mill Park," a beautiful job of photographing



Still in Hollywood

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Final victory and the peace which follows will find us carrying on with the same service to our friends and clients.

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Movie Clubs

(Continued from Page 224)

one of Indiana's most photogenic parks, showing it isn't necessary to travel long distances to get a picture with audience appeal. Also shown was the new 16mm. sound-film, "A Day at War in Russia."

ELMER M. CULBERTSON,
Corresponding Secretary.

Pie and Ice in Pittsburgh

The April meetings of the North End Cinema Club of Pittsburgh were featured by Jerry Miller and William Hager.

Jerry Miller presented an interesting program on care of your equipment. Mr. Miller's program was timely since we must take care of our cameras and projectors more than ever during these times.

"The Ice Follies of 1943" was William Hager's presentation. A picture in 16mm. Kodachrome in which he collaborated with another member, Frank Rimolt. Mr. Hager also showed his hilarious comedy, "The Modern Pieneer," a black and white film on "How not to bake a pie." A baker by trade, he should know, and has put it very nicely on film.

Several of the club members are making "Victory Garden" pictures and Jerry Miller has consented to write a script.

GUS WOLFF

Sol Polito

(Continued from Page 212)

old Victor Company, which was a subsidiary of his Universal. There were no such things as Assistant Cameramen back in those days, but Tony was generous enough to take an ambitious young Italian boy like me under his wing as a sort of combination protégé-apprentice, and teach him the camera business.

"Don't imagine from that, though, that I had any official standing with the company! I didn't. If I wanted to come along with Tony and help him "for free," while I learned what I could about camerawork, that was all right. But as for paying me a salary, or even giving me any official consideration from the company, that was another thing entirely.

"Most of the pictures were made outdoors, on location, in those days. And as I wasn't a regular member of the troupe, there naturally wasn't any place for me in the company cars that drove the troupe to the day's location. Sometimes, when I was very lucky, I might perhaps be permitted standing-room on the running-board. Much more often, I paid my own way to the location by trolley-car, and supplied my own box-lunch into the bargain. Sometimes I even hitch-hiked.

"But I learned! And it wasn't so very long before I had learned enough so that—by the easy-going standards of 1913, at least—I was a fully-qualified cameraman.

"Then I got my first pay job, as a cameraman for the IMP (Independent Motion Picture) Company, which was the producing branch of the Universal organization. Andre Barlatier, A.S.C., was the company's Chief Cameraman, and I stayed there for about a year.

"The reason for my leaving the IMP Studio sounds funny today, but it was deadly serious then. We had been making our interiors with Cooper-Hewitt mercury-vapor floodlights. Then some of the first arcs were introduced—the old 'Aristo' overhead arc floodlights, and some of the pioneer arc spotlights. On one scene I decided to try what we would now call an effect-lighting. That is, I used one of the arcs to cast strong shadows on the set. When the rushes came through, the executive were furious . . . the shadows, they said, distracted attention from the actors, and ruined the scene! The upshot of it was that I was fired. Yet today it's traditional among cinematographers that they're paid more for the shadows they create than for the highlights!

"But if IMP didn't want me, Biograph—then the foremost of those early-day producing organizations—did. I stayed there for some time and a very pleasant association it was.

"When Biograph moved to the Coast, I stayed in New York, joining the World Film Co., founded by David O. Selznick's father, the late Lewis J. Selznick. Among the interesting experiences I had there was photographing a picture starring Lillian Russell.

"After a while, though—I think it was about 1918 or 1919—I decided to come out to Hollywood, as the more and more of studios were beginning to move to the coast. My first job after reaching Hollywood was a little ten-day 'quickie' starring Lew Cody. It really was a twenty-day picture made in ten, for we worked day and night, trying to get out with the picture in time to 'beat' a rather sensational divorce trial then monopolizing the headlines, and upon which the picture was based.

"I was nearly a wreck when that picture was finished . . . but the hard work proved profitable, for Jack Pickford saw the picture and decided that if I could do that well on a ten-day 'quikie,' I could certainly do much better on the longer schedules his pictures offered. So my first major job on the coast was, oddly enough, with the First National Company, which is now a part of the Warner Brothers' organization, and through which Jack's pictures were released.

"The next few years after this we spent free-lancing, like many another cameraman. I worked a while at the old Metro studio . . . then spent several years with Edwin Carewe, who released through First National . . . then more free-lancing on both big pictures and little ones, until I made a connection with Hunt Stromberg, who had just started producing on a very thin shoestring. After a while Stromberg was joined by Charles R. Rogers, and our organization became more stable.

"In due time, the Rogers producing

unit moved over to First National, and when, after a time, he left First National, I stayed on there, doing all kinds of pictures, big and little. Among them were a number of westerns with Ken Maynard, who was one of First National's top boxoffice stars. The experience I gained in making those pictures was to come in handy nearly twenty years later, when I made such deLuxe super-modern westerns as 'Dodge City' and 'Gold Is Where You Find It' for Warners, in Technicolor, and other similar pictures in black-and-white with Errol Flynn.

"As time went on, sound came in, and then Warner Brothers absorbed First National—and still I've remained on the same lot. All told, since I came to First National with Jack Pickford, I've been just twenty-three years with First National and Warner Bros., which I believe comes pretty close to a record for staying at one studio. It's interesting to look back on those old pictures I did twenty years ago, and on the still earlier 'flickers' I did with IMP and Biograph, and compare them with a big, modern picture like 'Sergeant York' or 'This Is the Army,' which I'm now photographing in Technicolor. Things have certainly changed—and I think that we cinematographers have, on the whole, managed to keep pace with those changes as well as, or maybe even a bit better than any other group in the industry.

"For example, while quite a few of the men who had been front-rank cinematographers in silent pictures dropped back professionally when sound came in, and a proportionate number of new camera talent came to the top as a result of the change, I think that cameramen, as a class, suffered less by this transition than did the actors, directors, writers and others. And certainly we all agree today that the foresight and courage the Warner brothers showed in championing sound as they did lifted the entire industry out of the doldrums, both artistically and as a medium of entertainment. You have only to try and visualize how empty any of today's pictures would be if the element of sound were removed, to realize how much sound has meant to the motion picture.

"But at the time of transition, it was a hard and bitter dose to swallow, for it meant un-learning a lot of what we thought was unchangeably basic technique, and learning a lot of new and strange facts and methods of working. In some ways, this change was hardest for the cinematographers, for they had to accustom themselves not only to the medium of sound itself, but to new types of film, new lamps, new methods of lighting, and, in fact, an entire new system of camerawork.

"I'm convinced that a very important part in this has been played by the various organizations through which cinematographers have been brought together to interchange ideas and technical information, and to establish professional and technical standards of

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achievement. I was a member of the old Cinema Camera Club in New York—the pioneer organization which first attempted to bring the cameramen from the different studios together to develop professional fellowship. When I came to California, well, I can't lay claim to having been one of the Charter Members of the A.S.C., but I am proud that I was admitted to membership very soon after, in the summer of 1919, and I have been a member ever since. I know my own work is the better for what I've learned from my fellow cinematographers at A.S.C. meetings, and for the improvements in equipment and materials which have resulted directly or indirectly from the forward-pushing influence of the Society and its members. And after more than twenty-four years, I think that influence is only just beginning to bear its full fruit, for there are greater problems to be met, and greater improvements to be made, than ever before. END.

Preparation

(Continued from Page 211)

ally went through the evacuation of Java as were available have been interviewed personally; cineamateurs will probably be interested to know that even 8mm. Kodachrome movies of Java (including some scenes of the evacuation) shot by a Dutch merchant marine captain, have been repeatedly studied.

All told, an incredible number of detailed files on every possible phase of the entire subject have been painstakingly built up, analyzed and broken down by Salven to provide the rest of us with the most authentic data possible concerning every detail of the picture.

Meantime, art director Anderson and costume-designer Visart have also been studying the data concerning their specialties. Anderson, for example, had to master a detailed knowledge of the Chinese and Javanese locations—towns, roadsides, docks, homes, and even ships—While Miss Visart studied not only the costumes of the natives, the Dutch and other civilians and the American military and naval personnel who participated, but even the precise, clinical details of the bandages worn by the wounded under Dr. Wassell's care. Few people other than doctors and nurses will probably notice it on the screen, but as the actors who play the parts of wounded sailors and civilians progress through their parts, they will appear in surgically correct reproductions of the bandages real wounded men would wear at the same stage of their progress from field dressing-station to field hospital to base hospital, and thence through the various stages of convalescence and recovery.

At the same time, working closely with Mr. De Mille, Anderson, Salven and I begin breaking each scene and sequence of the script into its component camera set-ups. Anderson first draws a master sketch of the scene—usually embracing the basic long-shot angle. Then he breaks this down into the component

closer angles. These sketches are smaller, but quite detailed. Arranged in their proper order, they show the entire visual progression of the sequence; in the case of boom or dolly shots, of course, only the start and finish, and perhaps a few key intermediate positions are sketched out. These form what might be called a rough working blueprint of the scene as it will appear on the screen. They are not followed slavishly, of course: perhaps actual, physical conditions on the set may lead to minor deviations from the planned sketch. An actor cast for a certain part may be taller or shorter than we had visualized when we made the final sketch, or it may be more convenient or dramatically better to place him or the camera a bit differently from the way we had planned to. But in general, those sketches serve as a remarkably accurate guide to what all of us will do on the set—where Mr. De Mille will play his action, and how, and what basic angles and compositions I will use, and so on.

This method permits us all to study the picture in advance, and in the many conferences which thresh out each scene and set-up in detail, we can and do eliminate unnecessary scenes, sets and action—sometimes eliminating them entirely, and sometimes telescoping that action into parts of other scenes. All this long before the sets are actually built.

When actual construction starts, Anderson knows how I am planning to light and photograph each scene and set-up, while I know to a nicety just what sort of a set I am going to be working on. Thus we can coordinate our efforts. We have one sequence, for example, played in a Dutch hospital. It probably won't be shot for a month or so yet, but already we know just how it will be treated. Anderson knows from what directions my basic lighting will come, and how I plan to orient my closer shots. On my part, I know there will be open windows and skylights here, and opaque walls there. I know that at certain points Anderson is providing removable ceiling-panels, to facilitate my lighting. I know that certain of the walls will be solid, and others will be "wild," and probably of fabric, to facilitate removing them. We know that in one set-up, I will have to shoot at an extremely low angle, from underneath a cot. The three-film Technicolor camera is pretty big, so we've provided a special cot with telescoping extension legs, so that it can be raised to clear the bulky camera. By removing a couple of pins the cot separates into two pieces, so that we can dolly right up to and past it without waiting for special modifications on the set.

These sketches, by the way, are made not only in color, but in precisely the colors of the actual sets and props. This is naturally important on a Technicolor picture, but we do it when working in black-and-white, too. De Mille wants to know just how everything will look on the actual set—and he turns to me constantly with the question, "How will this photograph?" whether we're working in monochrome or color. Under this system,

there are no waits on the set while this detail or that are spray-painted while the overhead mounts merrily up.

At the same time, Roy Hunter and I are working out the strictly phototechnical problems. For instance, we have some low-angle shots for which the lens must be lowered to the floor than is usually possible with a Technicolor outfit. Therefore a special underslung boom-head is being obtained. In another scene, we have a regular Gregg Toland "pan-focus" shot to be done on an extremely big set, with the necessity of obtaining sharp definition in a close shot of Gary Cooper—less than eight feet from the lens—and carrying equally sharp definition to action around a huge Buddha more than sixty feet from the lens. In black-and-white this might be done by over-lighting and stopping down a short-focus lens until the desired depth was obtained. In Technicolor, with its slower emulsions, this can't be done. The nature of the scene prohibits split-screen double-exposure. So we are designing a special bifocal lens—on precisely the same principle as a pair of bifocal spectacles—in which the lower segment will be comparatively long-focus objective—say a 3-inch—to give us the big-head shot of Cooper in the foreground, while the upper segment will be a shorter-focus lens focused on the background. The position and shape of the blend between the two will be suited, of course, to the nature of the scene's action.

All told, this preparation makes the actual shooting of the picture perhaps the easiest part of the job, for every day we—and everyone else on the set—know precisely what each set-up is to be, how it is to be treated, and when it will be photographed. As Salven points out, ordinarily a lot of valuable production time is wasted because, in making one shot, a lot of unused lamps, furniture, props, and the like from the previous set-up may be piled indiscriminately to one side—and then, on the very next set-up, it is found that they must be moved again as either action or camera may have to occupy that spot! On a De Mille set, that never happens, for everyone from "C. B." himself down to the lowest member of the stage crew knows precisely what shot is going to be made next throughout the day.

Small wonder, then, that De Mille and his crew so consistently surprise the "practical men" of the industry with their all-around efficiency on big productions. The real wonder is that more directors and executives haven't learned from his example of the practical profits preparation can pay! END.

"Strobo-Sync"

(Continued from Page 222)

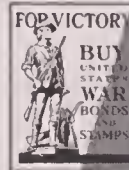
though it is not desirable as it involves a second person to look after the phonograph, and some means of signalling to the man at the projector.

The best method of all is a blinking electric light through a commutator

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couldn't make
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fitted near the shutter of the projector, and a small neon bulb fixed in a cigarette tin hanging over the disc. This means the record-player can be anywhere—even behind the projector, which is a very good place for it. I find this electric method simple and satisfactory.

In spite of the advantages of being able to show one reel and play one 33 1/3 r.p.m. record with it, I think most amateurs will prefer the standard phonographs of 78 r.p.m. and two turntables played through one amplifier. (Especially as 78 r.p.m. turntables, though hard to get, are more easily obtained than 33 1/3 r.p.m. ones! Ed.) This is perfectly simple. All you do is switch over from one turntable to the next when the sync-mark flashes onto the screen. In this way I have given shows in Bombay—sometimes to several hundred people—and with two projectors running one can carry on quite comfortably, while many in the audience think they are listening to sound-on-film. END.

Better Pictures—Less Film

Continued from Page 219

those pictures I very carefully went over the shooting script and figured the exact footage for each scene. In other words, I cut the picture before shooting. If I figured I wanted only six feet for a close-up, I shot only *seven* feet, giving a foot over for cutting waste. When I had figured the footage we telegraphed for that amount of film, *and no more*. Then

the picture *had* to be shot at that length.

The Technicolor cameraman who arrived in New York to photograph the picture had just finished shooting the Technicolor sequences in Cecil B. De Mille's spectacle "The King of Kings" in which footage knew no bounds. So, you can imagine his look of wonderment, almost dismay, when I told him how our picture was to be shot. He shook his head and said that pictures weren't shot that way. I told him ours would be. Well, when the shooting was done the picture was already edited. All that was necessary was to splice in the silent titles of those days.

I recall one of those films which received much favorable reaction from critics all over the country. It was a picture called "Memories." In it was a beautiful young girl named Anita Fremault. She is now known to picture lovers as Anita Louise. When we had finished making the final shot on that picture we had exactly **THREE** feet of negative left over. The system must have been all right, for "Memories" played one week at the New York Paramount theatre and, to my personal amazement, was praised by the film critics of the New York papers ahead of the feature picture. It then ran 12 consecutive weeks with a Harold Lloyd picture in New York, and did its 14th week in Times Square at Loew's.

Why not try this system of pre-shooting editing and save work, film, time and money—and remove the worries of wartime film shortage. END.

Projector Care

Continued from Page 218

creasingly hard to get now, and, in many parts of the country your old bulb must be turned in if you want to receive a new one. This means that it is most important that we lengthen the lives of these lamps as much as possible. A little understanding of them will do much to extend their useful service quite a bit.

First, do not operate a projection lamp beyond its rated voltage. For instance, if a 750-Watt lamp is rated or marked from 100 to 105 to 110 Volts, it should not be burned at 120 Volts. To do so will materially cut down on its life. Today, it is better to sacrifice a little light on the screen and have it last longer. If you operate your projector in a factory district or where electrical voltages are liable to be irregular due to the starting and stopping of large electric motors, then it is a good idea to put into your projector a 120-Volt bulb for use on the 110-Volt line. This will cut down on the light efficiency a bit maybe, but at the same time any sudden surges caused by the operation of large electrical motors which might be transmitted to your projector will not have such a straining effect on the lamp. Some projectors have voltage control rheostats built into them, so that the voltage to the lamp can be lowered. These are very helpful in prolonging the life of the lamp.

Second, if your projector is equipped with separate motor and light switches, always switch your motor on first, and then your light. This will lessen the effect of the peak voltage surge that the lamp's filament would have to bear due to the extra power needed to start the motor.

Third, do not try to over-power your projector. If the projector is supposed to take a 500 or 750 Watt lamp, do not try to use a 1000 Watt lamp to get extra light. The cooling capacity of the projector probably isn't sufficient to cool this larger lamp and the overheated globe will probably die an early death. The extra heat as the film passes the lamp will also injure the film—especially Kodachrome.

Fourth, handle your projection lamps carefully. If your projector is to be transported over long distances or over bad roads where it is liable to be bounced, remove the lamp first and put it into a box lined with some soft material so that the filament will not be damaged. The same applies to the amplifier's tubes and the exciter-lamp.

Remember, there is a definite shortage of projection bulbs and amplifier tubes. Treat yours carefully, and keep a spare lamp with your projector at all times, just in case it burns out while you are showing a picture. Even with the best of care they *do* burn out, and usually at the most inopportune time.

The exciter-lamp of your projector furnishes the light which is passed through the sound-track to the photo-electric cell. Inasmuch as this bulb is

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also subject to occasional burning out it is wise to keep a replacement with the machine as standard equipment.

The adjustment of the voltage on the photoelectric cell should be such that with the volume control half-way open the sound from the loud speaker at the screen should be about normal. If it is too loud or too soft at this point the voltage adjustment should be changed so that normal volume can be heard with the volume control half-way open. This will allow extra power for additional speakers if needed and yet keep the quality of the sound normal in respect to the frequency response. Consult your manual as to where this adjustment should be made.

Whenever the sound drum is removed and the exciter lamp is open to cleaning, clean its surface of any dust or dirt that may have collected on it. At the same time remove the cover of the photoelectric cell and clean the surface of this bulb also. With an ERPI-type gate the lens that focuses the light from the exciter-lamp onto the sound-track should also be occasionally cleaned and checked for proper focus. Your instruction manual will give you directions as to how to do this. It is important with any type of sound optical system that the optical unit be focused sharply on the sound-track at all times, otherwise the sound is liable to be fuzzy and indistinct. On some projectors there is an adjustment to compensate the sound pick-up's focus for reversal originals and 35mm. reductions, in which the emulsion-side runs facing the lens, and for reversal dupes (including Kodachrome), in which the emulsion is away from the lens. For the best sound quality, be sure to use this adjustment if your machine has it.

Through age the photoelectric cell may lose its output gradually. A spare should always be kept on hand so that this essential unit may be replaced.

By all means keep a spare projection lamp and a spare exciter lamp with the projector at all times. If either of these burn out, the light on the screen or the sound from the speaker will cease and the show will have to be stopped until a replacement can be located.

The sound amplifier of your projector uses tubes similar to those used by radios and public-address systems. Consequently they should be checked about once every six to eight months by a competent radio service man or dealer to make sure that they are giving the performance that they should. Inasmuch as a number of these tubes are no longer made, due to the war, a complete set of spares should be obtained. If your radio dealer does not have them or cannot get them for you, order them direct from the manufacturer of your projection equipment; he may still be able to obtain them or locate some for you, or suggest substitute types which are obtainable.

Amplifier troubles are usually indicated by a sudden loss of volume, crackling in and out of volume levels,

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severe distortion, hum, hiss, etc. When this occurs, or the sound ceases entirely, check over your entire system, making sure that the exciter lamp is not burned out, the photoelectric voltage is being supplied to the photoelectric cell, the amplifier fuse is not burned out, and that the path of light between the exciter lamp and photoelectric cell is not blocked. Also check the wiring connections to amplifier and speaker to be sure that they have not pulled loose.

If you are operating your projector out of town, check to be sure that the voltage supplied to your projector is correct and that it is 60 cycle alternating current for your amplifier, unless your equipment is built for other frequencies

(i. e. 50 or 30 cycle; AC-DC; or other). More on this later. If the sound still cannot be properly heard, have your tubes checked and try replacing the photoelectric cell with a spare. Sometimes parts in an amplifier break down. Your radio service-man will be able to replace these. Your photo-supply dealer maintains a service to check anything wrong internally; consult him about your troubles. He will advise you what to do—maybe send the machine back to the factory, or he will be able to refer you to a reliable radio service-man who will be able to help you.

A word about fuses. Fuses are the safety valves of your projector's electri-

cal system. If they blow, something is wrong somewhere. You may have made a misconnection or plugged into the wrong voltage outlet. Most modern 16 mm. sound-projectors have universal AC-DC motors; that is, they will operate on either direct or alternating current. However, the amplifier units of these projectors have to have AC or alternating current of the 60-cycle type, unless otherwise specified when ordered.

By the same token, most power companies supply 110-Volt 60-cycle current as standard. Occasionally in small towns 110-Volt, 30-cycle or 50-cycle current is supplied. Also occasionally, such as in hospitals and other institutions that manufacture their own power, 110-Volt DC, or direct current, is supplied.

Amplifiers rated to operate on 110-Volt 60-cycle current will *not* operate as a rule on either 30 or 50-cycle AC or direct current—or voltages other than that for which they are rated. The result of trying to use your amplifier or projector on other than rated voltage values and types will be a blown fuse—or possibly a burned-out amplifier and motor. Therefore, if your fuse blows when you plug into an electric outlet and turn on the switch, check as to the rating and type voltage supplied to your projection and sound equipment.

It is a very wise idea to contact your power company about the power supplied to various institutions and outlying communities that you might have to visit, if you have any doubt in your mind about them. Always carry an extra fuse with you in your equipment. If your second fuse blows after you've ascertained that the cause of the first one blowing was not due to wrong voltage values or a misconnection, do not try to operate your equipment, but see your photo dealer or repair-man about it. Chances are that something is wrong internally.

Whenever you have a showing scheduled, try, if time permits, to have your equipment set up and completely checked through in respect both to the picture on the screen and the volume of the sound before your audience arrives. Load the film into your projector and run off a few feet so that the picture can be properly focused and the sound and tone levels be predetermined.

Some projectors have to warm up thoroughly several minutes before they are used so that they will run steadily. If they are taken in, set up, and started with the picture immediately without a warm-up period, they will "wow" or waver in tone, and the music, if any, will sound "sour" as it comes from the screen. Then, too, the speech may be abnormally low and slow. Allow time to warm up if your projector happens to do this. Most amplifier tubes also have to be warmed up for half a minute or so before they will transmit sound.

Try to place the loudspeaker of your equipment high and to the side of the screen, so that the sound from it will carry to all parts of your audience. If you place the speaker on the floor, the bodies of your audience will absorb a

great deal of the volume, so that you will have to use a volume-setting higher than is really necessary. Never place the speaker behind the screen unless the screen you are using is a specially perforated sound screen. Regular amateur screens will cut off all the high-frequency sounds and make the speech muffled and indistinct if the speaker is placed behind it.

If you have the opportunity of selecting the room in which you are to show your films, try and choose a room that is "dead" or will not reverberate and echo sounds. Rooms with flat, hard, bare walls, smoothly finished, are liable to be very "live" and thus give the sound a very boomy effect, making it hard for the audience to understand. In addition there may be dead spots where sound echoes tend to cancel one another out and the volume will appear to be very weak at these points. The converse of this is also true. If you are compelled to show sound-films in a room of this type, set your tone control so that as much bass is removed from the sound as is needed to make the speech clearly understandable.

Quite often what appears to be loud enough volume at the projector, is really too loud for the audience. The sound from the speaker has to compete with the noise from the projector and this sometimes results in the operator setting the volume-control high enough so that he can understand the speech beside the projector. However, the speaker's sound may be too loud for those away from the projector and it thus will become objectionable. You cannot accurately pre-set your volume by listening before your audience is seated, for their bodies will absorb quite a bit of the sound, so that a volume setting which is right for an empty room may be too low for one that is filled with people. Therefore, after your show is started, quietly walk around the back of your audience and check on the volume. The sound should be heard distinctly, but not blarey; let the picture on the screen carry the main interest and the sound supplement it. In addition, loud sounds are more likely to set up objectionable echoes resulting in a distortion of what is heard.

If you have to show your films in a large hall or auditorium, plan to use two speakers. Most amplifiers make provision for the use of additional speakers and you will find that the quality and clearness of the speech will be better if you use two or more of them. One speaker cannot carry much of a load and when forced to do so will distort the sounds and may even cause internal injuries to itself, necessitating expensive repairs.

SUMMARY

In summing up the foregoing, certain definite rules might be restated as follows:

Films

- 1—Keep them clean.
- 2—Repair any broken perforations or splices as soon as possible.
- 3—Keep your films in dust-proof cans only.

- 4—Store them in a cool, dry place.
- 5—Handle them only by the edges, never by the picture area.
- 6—Never pull the film tight on the reel by hand.
- 7—Provide a long enough leader (six feet) and test the threading of your projector on it.

Projectors and Amplifiers

- 1—Keep them clean.
- 2—Lubricate them according to the manufacturers instructions.
- 3—Clean the picture gate before each projection.
- 4—Keep the sound gate and lens clean.
- 5—Do not attempt to overvolt your projection lamp.
- 6—Do not try to use a lamp of greater power (Wattage) than specified for your projector.
- 7—Keep a spare projection lamp, exciter lamp and extra fuses with your equipment at all times.
- 8—Keep a spare photoelectric cell and a spare set of amplifier tubes on hand.
- 9—Do not try to operate your equipment on the wrong current frequency or voltage.
- 10—Try to have your equipment completely set up, focused, and checked for sound volume and tone before arrival of your audience.

If you will observe these simple rules, you will do much towards eliminating many embarrassing stoppages or breakdowns in your performances. END.

"Cheating"

Continued from Page 217

display bases, on a good, sturdy plank—about a 1x4 unless you've a very heavy camera—long enough to span the opening of the door. Next, borrow a pair of large C-clamps from your friend whose hobby is woodworking, and use these clamps to hold your board across the opening of the door, at the required height. In some instances it may be a good precaution to add a vertical brace made from a 2x2, running from the floor straight up to your board-mount at a point just under the camera. It can be nailed, or held in place with a smaller C-clamp. Either way, it is an added safeguard and will give greater rigidity.

Again my friend interrupted. "This was all very well for most shots," said he, "but how about angles like some of those in your picture 'Pride of the Yankees?' I remember one sequence where Gary Cooper and Teresa Wright, as Lou Gehrig and his bride, engaged in a friendly little scuffle, wrestling all over the floor and ending up with Mrs. Gehrig pinning her husband's shoulders to the mat. There were some angles there, where you shot past Cooper's head and shoulders, looking upward at Miss Wright, that you couldn't have gotten without dropping the camera into a pit in the floor—and which even an 8mm. amateur couldn't have gotten by the means you suggested."

That was accomplished by "cheating." We put the camera as low as we could get it on a "high hat" surmounted by the regular tilthead. Of course this put the lens two or three feet above floor-level.

So we simply built our action up to the necessary height for our shot. Instead of being actually on the floor, Cooper lay on some planks, supported by stout boxes, which brought his head and shoulders to a point where we could get them in the foreground of our shot. Miss Wright—also on the planks—went through her action, pinning his shoulders to the planks, rather than to the floor.

On the screen, the result was exactly the same as though we had put the camera's lens at or below the actual floor-level, and shot the scene that way. It was intercut with other shots that showed the couple actually wrestling around on the floor, so the audience accepted this particular cut as showing them still on the floor. But from our point of view, the scene was much easier to stage as we played it. Similar scenes should be just as easy for amateurs who use the same method of "cheating."

I don't recall at the moment whether the composition in that particular shot made it necessary to include in the background portions of any tall furniture, like the cabinet in which Gehrig kept his baseball trophies. If it did, we probably "cheated" with that, too, raising the cabinet to the necessary height by putting blocks under the legs.

This type of "cheating" is carried out every day in the studios. Suppose, for instance, we have a medium close-shot of a man sitting at a desk, and want the desk to figure prominently in the foreground, but yet don't want to drop the camera as low as would ordinarily be necessary for this effect. Well, we simply put the desk on block "lifts" of the desired thickness, and there is our effect, very easily obtained, and without distorting the perspective on the actor.

In the same way, if we have a player seated in a chair in a scene where he is playing a sequence in fairly close-angle shots with another player, cutting from one to the other in reverse-angles, with the player being spoken to in the foreground or background of each shot, we often raise the chair in which the player is sitting by means of these little "lift" blocks, which of course do not show in the close shots, and which are naturally removed for the long-shots. You can, by the way, study an excellent example of this if you'll look at the cover of the March issue of this magazine.

Remember, too, that in a sequence of this sort one can very frequently play one actor or the other in a position several feet to one side or the other of the position he occupied in the establishing long-shot, if it is necessary for compositional or dramatic reasons.

In fact, the whole subject of "cheating" with camera-angles can be summed up by saying that once you've established a basic relationship between the players and the set in your long-shots,

you can move them about to a quite unreal-seeming degree in making the closer angles, for the audience never sees what is outside of the camera's field, and takes it for granted that a relationship or position established in the long-shot angles continues throughout the closer ones. Remember this, and you will find it easy to add a very pleasing variety of camera-angles to your pictures—with much less difficulty than you anticipate! END.

Planning Programs

Continued from Page 216

on both screens, and we measured the reflected light with a luminosity meter.

I am telling of this incident because of the interest it created, and the time consumed in the discussion filled in most of the meeting. The members were continually moving about the room, viewing the pictures from all angles and receiving an education about screens and their light-reflecting properties. This should prove an interesting experiment for any other club.

Have you ever discussed the principles of composition? In most movie groups there are some members who are artists or who have had art training. All that is needed is a blackboard and a piece of chalk—and let your artist go to work with simple line drawings. A demonstration of this kind will hold the interest of the whole club. It is very practical and need not be too elaborate to prove its effectiveness. The pointers learned in a simple demonstration of grouping in the form of triangles, rectangles, etc., will help all who see it to select better compositions and angles for their future pictures.

While we are on the subject of composition from an art angle, a follow-up meeting on color would be in order. Color exerts such a strong influence on our daily lives that we dare not overlook this important subject. Picture, if you can, a colorless world, and how drab it would be! The food we eat, the clothes we wear, our immediate surroundings, trees, flowers, sky, water—all that we see—is distinguishable by virtue of its color. Here is food for thought and good material for a lecture—color harmony in its simplified form, how it can be applied to our movie making, what constitutes good color composition and how we may attain more perfect color balance in our films. The majority of us use color film, and a meeting devoted to this especially interesting subject should be a "must" on all movie club programs.

In the past we were often extended the courtesy of lectures by the various manufacturers of light meters. These very educational talks were the incentive which led many of us to purchase these very useful instruments. It would be a splendid idea for some of the members who have these various makes and styles of meters to get together and plan a discussion. Here is a piece of movie-making equipment with which the

user develops his own style of handling. There is nothing mysterious about this, neither can it be said that one person has more ability than another. Some photographers are able to achieve better results, however, than others. Surely the experience of the various members in the use of their own pet meters would be valuable to the club as a whole. The more we talk about our hobby, the more proficient we become. Don't hide your light (meter) under a bushel. Bring it to the fore in a helpful discussion.

Did it ever occur to you that each time a contest is held, many very fine films are shown and that we very seldom see them afterwards? Why not have a revival of these prize-winning pictures? Those who were unable to be present at the various contests would more than welcome the opportunity of seeing these splendid films. Those who have seen them would hardly be averse to seeing them again, for all of us can bring to mind some beautiful picture we have seen in the past and hope that it might be shown again. Why not a contest to select the best of the contest films of yesterday?

I have heard remarks, while pictures were being shown, that this or that shot was made by a telephoto lens. "You can usually pick them out for they seem to be overexposed," some folks say—and are often proved wrong. No matter which lens is used, there should be no difference in the quality of the picture.

Here is another subject which can be discussed for the enlightenment of our club members. Why not ascertain the different types of lenses there are in the possession of your members? Have them displayed on a table for all to see and examine. There are members in all clubs who are well experienced in the

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use of all kinds of lenses and who could talk intelligently on the subject.

I think that a vivid illustration of the result of these various objectives could be easily shown by projecting a still picture on the screen. Mask off areas indicating the use of various lenses. This can be accomplished by cut-out masks placed in front of the projection lens. By simply moving the projector farther back and filling the screen with each masked area, the startling results of the use of each lens is quickly and dramatically brought to the screen. In this manner, the lecturer could illustrate the use of each lens as he talks about it. The possibilities of developing this into a full and interesting meeting need no further explanation.

The foregoing is a suggestion of what can be done in your own club. A little thought and planning may turn any number of movie-making problems into material for a club meeting. By all means keep up the activities of your

club. Create enthusiasm by member-participation. Why search further when you have "acres of diamonds" in your own back yard? **END.**

Shooting in New Guinea

Continued from Page 209

the water was so hot it was impossible to do anything with it.

"Water was brought overland 40 miles through a steel pipe. The hot sun beating down on that pipe was better than an electric heater, and a shower would literally cook a person.

"Drinking water was obtained by sinking a large metal container (about the size of a large garbage can) in deep holes in the ground and covering it over. In two or three days the water was quite cool and pleasant to drink.

"The water in the pipe began to cool off after dark, and about two or three A.M. the boys would roll out for a shower.

"At best the temperature was never much less than 80°, and as about 70° is the maximum for safe negative development, I didn't process. There was no ice-machine available, or I would have tried using ice to cool the water. The one machine in use could hardly make enough ice for the hospital.

"For three and one half months I had no idea how my pictures were coming out. I didn't know how my film was holding up (it was not tropical pack), or if my cameras were in adjustment.

"I would wrap up the day's take, and look for a plane bound for GHQ in Australia. There the film was inspected and re-wrapped for shipment to Washington, D.C., where the film was developed.

"Finally, I was able to make a test. I located a makeshift darkroom, in a basement, and was able to prove, to my great satisfaction, that my pictures were coming out all right.

"When I left the States, I took along a 4x5 Speed Graphic with a 5¼-in f:4.5 lens. (The leather cover went bad, but the bellows stood up O.K.) I also had a Rolleicord with an f:3.5 lens, and a Leica with 6-in. lens. For all around work I found this equipment very satisfactory.

"I also took along three cases—30 doz. to the case—of 4x5 cut film, (East-

man) and 48 rolls of No. 120 rollfilm (all Eastman Super-XX). Two dozen film-packs—12 exposures in each pack—and 5 rolls of 35mm. film. All this film was regular pack. I had no tropical pack until six weeks before I left the South Seas."

Frank told of one unusual experience in New Guinea with a roll of Super-XX roll film. He had exposed the film and placed it in a canvas duffle-bag which was accidentally dumped in the water where a stream emptied into the Pacific Ocean. He made a quick dive to rescue his precious bag . . . and was told later that particular stream was infested with crocodiles! Back at base camp in Port Moresby, Frank decided to develop the film, just for fun. He was sure it had been ruined by the salt water, but to his surprise all twelve negatives were in excellent condition.

"When I arrived at Port Moresby, our base camp on New Guinea, the working conditions were somewhat better than they were at Darwin. All civilians had been evacuated, and we had the best house in town for our quarters. Rain-water was collected in a huge vat for piped to the house. There I was able to do some processing.

"Then one fine day the Signal Corps set up portable darkroom equipment, and an ice-making machine to keep the solutions cool, and I had no more trouble processing my negatives.

"I sent out my negatives whenever possible. Sometimes I had only two or three ready. Other times I sent out as many as 200."

"In the jungle I shot most of my pictures at 1/25 to 1/10 of a second wide open. All the pictures I shot at Port Moresby were made with K-2 filter. This was possible because there were fewer trees than in the jungle country, and the air was drier. In the jungle it was not feasible to use filter because they fogged over. Sometimes on aerial shots (when shooting from a plane) I used a dark red filter to cut through the haze and boost the contrast.

"The extreme humidity created the worst problems. I had the most trouble with the film-packs. The safety paper between the films would respire, causing the films and paper to stick together. I also had a great deal of trouble with cut film. Because of the moisture in the air, perspiration does not evaporate, and as a result one's hands are always damp. The closed space in the changing bag makes the hands perspire more than ever, and in working with the film damp hands leave finger-prints.

"The main problem with light was not due to the light itself, but from the lens fogging over, because of the humidity. It was difficult getting good pictures in the jungle, but that was due to a deficiency of light, not a deficiency of the film. If you can imagine going out to take pictures in a tunnel without flash-bulbs, you can visualize the problem of shooting pictures in the jungle. We were unable to use flash-bulbs because that would advise the



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Japs of our position. Then, too, there was a question of weight. One travels very light in the jungle. On account of the hard going, every unessential ounce of weight and every inch of bulk has to be eliminated.

"I soon learned how to make the best use of my equipment under the conditions down there. The Speed Graphic was good for layouts and pictures I could plan at least slightly in advance. The Leica came in handy for shooting bombing planes, and other long distance shots, and on the actual fighting front I used the Rolleicord most of the time.

"This camera gave excellent service for a number of reasons. It was small in weight, easy to carry and handle, and valuable when it was necessary to make a number of quick pictures before taking time out to change films. The Rolleicord can also be used as an aerial camera by closing the Reflex hood and using the frame viewfinder.

"I didn't spend much time sitting around base camp, but exercised my prerogative as a war correspondent to move from camp to camp, meeting the men, and making pictures of their activities. When you do this you really learn what is meant by 'living under field conditions.'

"To make a bed in the jungle, for instance, you cut a couple of six-inch poles, then lay branches and twigs across them to keep you off the soupy ground. With half a shelter tent strung above, you achieve a slight protection from the rains, but this isn't good enough for your camera. The best way I found to protect my equipment in such a situation, was to wrap it in my rain coat, and suspend the bundle by rope from a tree. That kept it a good deal drier than I usually was!

"When the Japanese, last fall, pushed to within 35 airline miles of Port Moresby, we all waited impatiently for marching orders. There was plenty to do around the port, which was teeming with activity. Supplies had to be unloaded and distributed. Our men had to be trained to adapt themselves to the mountain jungle conditions they were so soon to meet.

"The natives of New Guinea helped greatly; unloading supplies, etc. Most of the native women, and children had been evacuated inland, but there were a few around Port Moresby. The natives lived in a little village on stilts at the

water's edge, just outside of the town.

"The women were mostly remarkable for their lack of clothes. They wear an unattractive, bulky grass skirt, and many of them are tattooed. The men go in for sarongs, and fancy hair ornaments of flowers, or shell and bone. For state occasions they daub themselves in fancy patterns with some sort of sticky yellow substance.

"They do themselves up in this swanky manner to greet new arrivals . . . but these same sport-model darkies were very useful in leading our men through the jungles.

"Getting lost in the jungle is very simple. Just step off the trail, and it is accomplished. One day I was twenty feet from the trail and hopelessly lost.

"Jap air raids were a daily occurrence. On land the Australians were driving them back-trail and over the mountains. Meanwhile, our U. S. Engineers were building roads through the jungles to our jumping-off place. Many of our Engineers are Negroes, and I often marvelled over their good humor and ready courtesy. Cutting jeep trails through the virgin jungle is extremely hard work, and the workers were constantly besieged by mosquitos, flies, ants and other insects, as well as having to contend with incessant rains and oppressive heat, but those Negro boys sang and laughed, and kidded the jungle in a way that was truly admirable. They were always ready to stop, and help with heavy loads, free a bogged jeep, or help in any way required of them.

"Finally we received our marching orders, and at the jumping-off place we had to struggle with the jungle in a hand-to-hand battle that was no small thing in itself. The jungle is a slimy, dank dark-green hell of it's own without the menace of the Nips. Every foot of the way had to be hacked out on our overland trip to the front.

"The Fuzzie-Wuzzies were a great help. Some of them showed great bravery, and were dependable guides and leaders. Many of our soldiers who made that first trek across the island from Port Moresby to Buna were saved from probable death when the natives took over their heavy packs during the worst of the trip. More than once when I thought I could not take another step, a native would trot up and take my camera and field pack into camp.

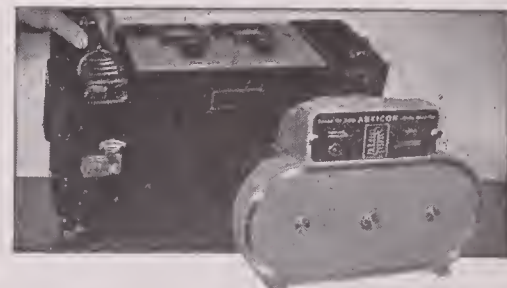
"These boys are crazy about American

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cigarettes, and a single smoke, or candy bar is considered sufficient reward for very considerable services.

"That first trip to the front was something to remember. Men hacked and chopped through the matted vines and heavy underbrush. Sometimes we struggled through thick, sharp Kunai grass, seven or eight feet high, which disagreeably stings the face and hands. We pushed through dangerous, foul-smelling swamps, and crossed crocodile-infested rivers. A mile in two hours was making good time. At the start, we were given 10 minute rest periods out of every 60. That was soon changed to 10 minutes' rest out of every 30, and that still wasn't enough.

"On the last advance up coast, our contingent got lost in the jungle. We forded one river fifteen times, and the going was extraordinarily tough. We were down to 'C rations,' and they eventually gave out. Finally we solved our problem by following the river down to the sea. At a small mission we found another unit who gave us our first meal in three days.

"We were now close to Buna. We had licked the jungle, and were ready for the Japs. So far, our advance had not been detected by the enemy.

"At the advance post we were greeted festively by the Fuzzie-Wuzzies who had donned their best yellow paint to greet us. Chanting happily, they helped us stack and cover supplies.

"I made a quick trip back to Port Moresby by plane to process my pictures and get them under way then I flew back to the front in a plane that was hauling badly needed supplies. Heavy winds tumbled the storm clouds which obliterated the Owen Stanley Mountains. After several attempts, the pilot decided to 'blind' fly it. That was quite a moment! We hit raging winds over the ridge, but we made it and wound up in a little place only a few miles from the front lines. We soon advanced to within two miles of Buna. The jungle hid us, fortunately, for we were not far from the main body of Japanese troops.

"Our bombers were giving the Japs a heavy pounding to 'soften' them up before the final drive for Buna. The Australians joined our air attack, and I saw plenty of Zeros crash into the sea. Only a few minutes later the Japs drew blood at our position. Time after

time the Zeroes circled, low, firing at our men. By that time we were all pretty good at digging slit trenches.

"One morning the Japs gave us our worst bombing. They came in from the sea, 30 strong, circled our position, then out again to swoop down to sea level where they could mark our position under the trees, then the bombing began.

"They would circle low, and we would get a rain of machine-gun bullets. I was flattened in a slit trench. Bombs burst closer and closer. My back was covered with dirt, sand and mud. Finally, a bomb exploded near enough to throw me completely out of my slit trench.

"We dug our trenches, 'New Guinea Coffins,' we called them, with our mess kits and helmets. I have seen our boys lie in them for 24 hours at a stretch, unable to smoke, soaked with mud and rain, just waiting for a chance to advance.

"After our successful battle for Buna I came back to the States on leave. I'll be shipping out again soon. Where? I won't know that until I'm on my way."

To anyone who expects to be shooting pictures in the South Pacific area, Frank suggests taking the same equipment he carried.

The Speed Graphic and supplies should be left at base camp, for pictures that can be planned in advance. For active work at the front, take the Rolleicord with its regular f:3.5 lens and the Leica with a 6-in. lens. And be sure and take along lots of rollfilm . . . tropical pack preferred.

When asked about the problems confronting a motion picture cameraman, Frank told this little story.

"A motion picture photographer for March of Time (an Englishman) had just finished shooting a planned picture—a short on the alertness of pilots on the field—when we got a real alert. When the fellow realized that the real thing was going on, he made for the top of a hill to take pictures of the bombing. He reached the top of the hill in time to get some good pictures but realized he was out of film when he started shooting. By the time he re-loaded all the bombs had been dropped!

Had he obtained the pictures, they would have been among the most spectacular of any bombing in Port Moresby."

It seems that the 35mm. camera is too large and difficult to handle, and it is almost impossible to carry an adequate amount of film.

"I traveled at the front with Martin Barnett, of Paramount News, and I saw some of the problems he had to contend with regarding movies. He carried a 35mm. Eyemo camera. I believe his lenses were a 2-in. and a 6-in. focal length, and he would take along about 2,000 feet of 35mm. negative. But while actually shooting at the fighting front he could take along only four or five hundred feet.

"Now if he had been equipped with

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16mm., his camera-outfit would have been rather less than half as big and half as light. With the lighter and more compact 16mm. film, he could have carried enough footage to give him five times the screen time of the bulkier 35mm. stock he carried—say enough to give him the equivalent in screen time of 1500 to 2500 feet of 35mm. And of course using Kodachrome he could have gotten 35mm. enlargements that would compare very favorably with anything he could shoot with 35mm. under field conditions. In a word, he could go farther from his base, and stay longer, and bring back much more in actual picture using 16mm. than could be possible with 35mm.

"And I think that both the official war films and the commercial short-subjects made in 16mm. Kodachrome and released in 35mm. blow-ups, whether black-and-white or Technicolor, have pretty well proved that 16mm. is just as good as the man behind the camera. In the hands of a capable, cool-headed professional like the newsreel crowd and the A.S.C.-members who are now in the military and naval photographic services, 16mm. can pay big dividends when compared to 35mm. for front-line camerawork."

Summarizing what his experience in New Guinea had taught him, Frank reiterated this important advice. "*Take the best possible care of all equipment!* Remember that new equipment is not easily obtained—especially if you're 6,000 miles from your home office—and if you want to keep on making pictures, you've got to 'make do' with the outfits you start out with.

"*Lightweight equipment is essential!* When you get out to the real front, you'll have to carry it yourself. That's bad enough in itself when the going gets tough—but it's a thousand times worse when you have to dodge bullets too. Compact, lightweight equipment is a good deal easier to protect, too, when weather

conditions get bad, as they always do at the front. And—remember that a man trying to use a big camera of any kind in the field makes a lot bigger target than the same man using a smaller, lighter camera!" END.

At the Front

Continued from Page 208

regularly every three days, including war news shots. Aeroplanes, trains and dusty khaki-colored bullet-punctured front line lorries daily deliver to the Central Newsreel Studio in Moscow their tins of films. One winter morning a car containing tins of film drove up as usual to the Central Studio. Inside the vehicle lay the dead body of our colleague, cameraman Pavlov. He had been filming the Red Army taking a town in the front line and had been killed by shrapnel. At the precise moment at which this heroic cameraman was being buried, the studio was mixing the sound track for its next newsreel issue, which showed the actual scenes of our troops retaking Malo-Yaroslavets, the very same battle in which Pavlov had met his death.

"The war of the Soviet people against Hitler's hordes knows many instances of sublime heroism and valour. It would be difficult today to say where Soviet newsreelmen could not be found filming this war throughout the vast expanse of the front stretching from the Black Sea to the Arctic Ocean.

"These cameramen ascend in war-planes and their cameras travel deep into the enemy's rear where Soviet aircraft hurl their cargo of bombs; they descend deep underwater aboard Soviet submarines; they will always be found at their posts in infantry units even in the most strenuous moments of enemy charges; they film guerilla action far behind the enemy's lines. The cameraman often becomes the Red Army man, laying aside his camera and taking up a machine-gun or tommy-gun.

"I should very much like to bet you, my friends, cameramen of Great Britain and America, that we shall meet you working and fighting hand in hand with us when the Second Front is at last opened.

"Then, firmly gripping each other in a handshake, in close creative co-operation, we shall film the final shots and make the great historic film of the decisive battle and victory of freedom-loving, progressive mankind." END.

Outdoor Camerawork

Continued from Page 207

be less increase in both visual and lighting contrasts in the dupe or enlargement.

In Kodachrome, too, there's very little to be done in filtering, with the exception of the filters made to correct Type A Kodachrome for exterior use, and occasionally to penetrate haze in extreme long-shots. In the first in-

stance, you've simply got to use a filter. In the second, you can use either the Eastman "Kodachrome Haze Filter" or—and I think this is better—a Pola-Screen. The Haze-filter frequently tends to distort color-rendition in the distance. The Pola-Screen gets through distant haze just as well, and has the advantage of keeping the background color-rendition unaffected. For that matter, I've found the Pola-Screen useful at times in 35mm. black-and-white, not only to eliminate unwanted glare or reflections, but also to "pull down" the sky without affecting the color-rendition elsewhere. So if you feel you simply must go into action armed with at least one filter, I'd recommend making that one a Pola-Screen, and forgetting the rest. END.

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Max Fabian

(Continued from Page 210)

miniature battlefield for a relatively unimportant little program picture being directed by King Vidor and photographed by John Arnold, A.S.C. . . . it was called "The Big Parade."

As he tells it now, "That assignment was something of a surprise to me; I had never photographed a miniature before, and I'll confess I wasn't at all sure I knew how to go about it! But somehow I managed to get the shot filmed, and everyone was very surprisingly pleased with my efforts. So I kept on doing miniatures, which were then just beginning to come into general use.

"Oh, in between, I'd do a production now and then—went over to Fox for some of them—but all the time Metro kept calling me back to do more miniatures. So finally I just stuck to it . . . and they've kept me busy at it ever since.

"I'm not sorry, either. Once you get into it, there's a strange fascination about making miniatures look real on the screen. Besides, now that production camerawork has become more complicated and more nerve-racking, I figure I get out of a lot of headaches letting the other boys handle the production work.

"As we work it out here at MGM, I have a pretty free hand. I work in friendly, cooperative fashion with the directors and art directors of the miniature department, but in the actual shooting, I'm pretty much on my own. They may provide the set, and indicate how they want the action played, but it's my 'know how' that puts the shot on the screen. And I'm not always harried—as production men are—by unit managers urging one to hurry and get the overhead over with. Several times recently I've turned down chances to take a fling at production camerawork. I'm quite content to be the biggest photographic frog in my own small puddle.

"Besides, I like miniature work. Every shot is different, and has its own challenging problems. Sometimes, my miniatures are for a big picture, and I have weeks of time and a six-figure budget to do them with . . . so that I can use large-scale, three-dimensional miniatures, and take my time getting the best possible results. At other times, usually for less important shots or pictures, I have to work comparatively fast, and with the sketchiest of materials. Then I'll use cut-outs, and play around with lighting, perspective and camera-speeds to create the illusion I'm after.

"But don't look down on cut-outs just

because they're simple and comparatively cheap. Those 'Miniver' miniatures were cut-outs, and so, I understand, were the shots of the Jap fleet in 'Wake Island.' But if you can make them look real, it doesn't matter what they may actually be.

"That's the big thing about shooting miniatures or any other kind of special-effects shot: make it look real. Once you've done that, bend every effort to making your composition and lighting artistic. And with that combination, you've the whole sum and substance of successful miniature work.

"In all of it, none of us today are trying to fool the public. Instead, we're trying to put on the screen something necessary to the story, but which can't be done by conventional, straightforward methods. If the average audience doesn't notice our work as such, we can feel we've really succeeded." END.

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A very complete new kit of 336 aircraft identification silhouettes in 2" x 2" miniature slides, recently prepared by "Flying" magazine is now being distributed exclusively through the Society for Visual Education, Inc. The kit has been tested with excellent results in approximately 150 aircraft identification courses in high schools, colleges, and among various units of the Armed Forces.

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The kit includes an indexed case, slides, and an instructor's manual. Each slide is accurately keyed to the master-index on the cover of the case, which lists the guide number and type of aircraft. The instructor's manual includes an alphabetical index of aircraft types and provides suggestions concerning the proper use of the slides. The standard kit is available at \$35.00 in cardboard Eezeemounts and a De Luxe Kit, with silhouettes mounted between glass in S.V.E. Slide Binders, will sell at \$55.00.

Smaller units of supplementary slides will be made available by the Society for Visual Education, Inc., as rapidly as the staff of "Flying" magazine may secure detailed information concerning new types of military aircraft and prepare new drawings. It is also likely much of this same material, including the original kit, will be made available on slide-films, for the benefit of those who do not have projectors for miniature slides. Complete information covering these new and effective training aids may be secured from the Society for Visual Education, Inc., 100 East Ohio Street, Chicago, upon request.

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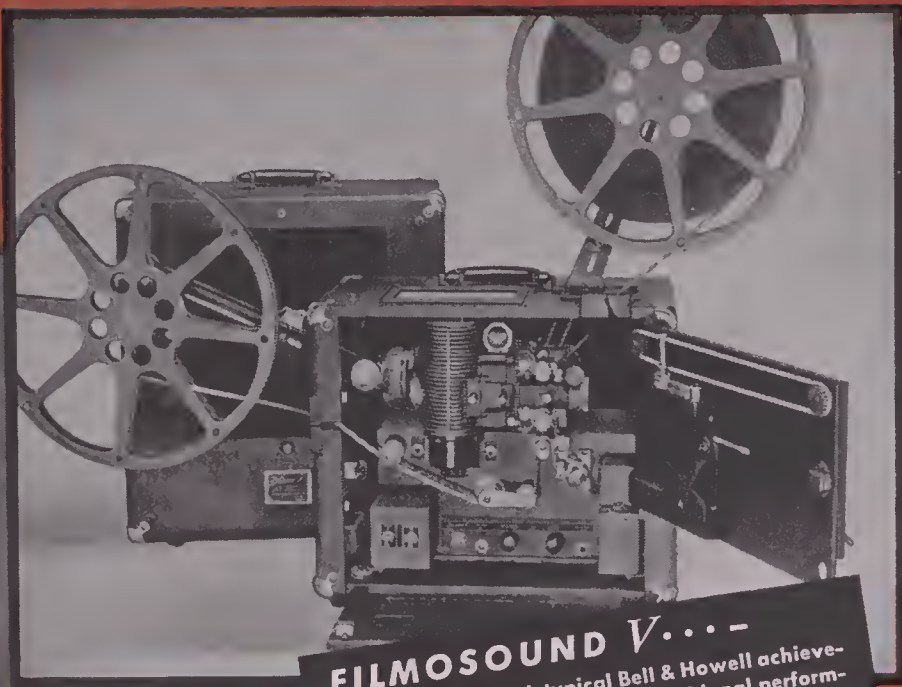
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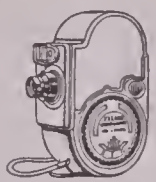
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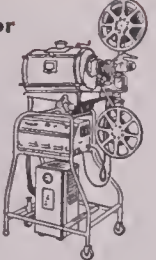
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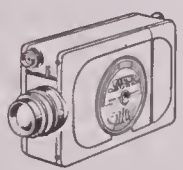
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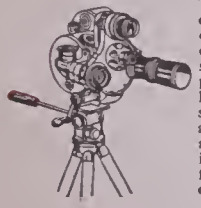
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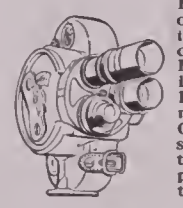
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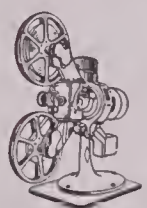
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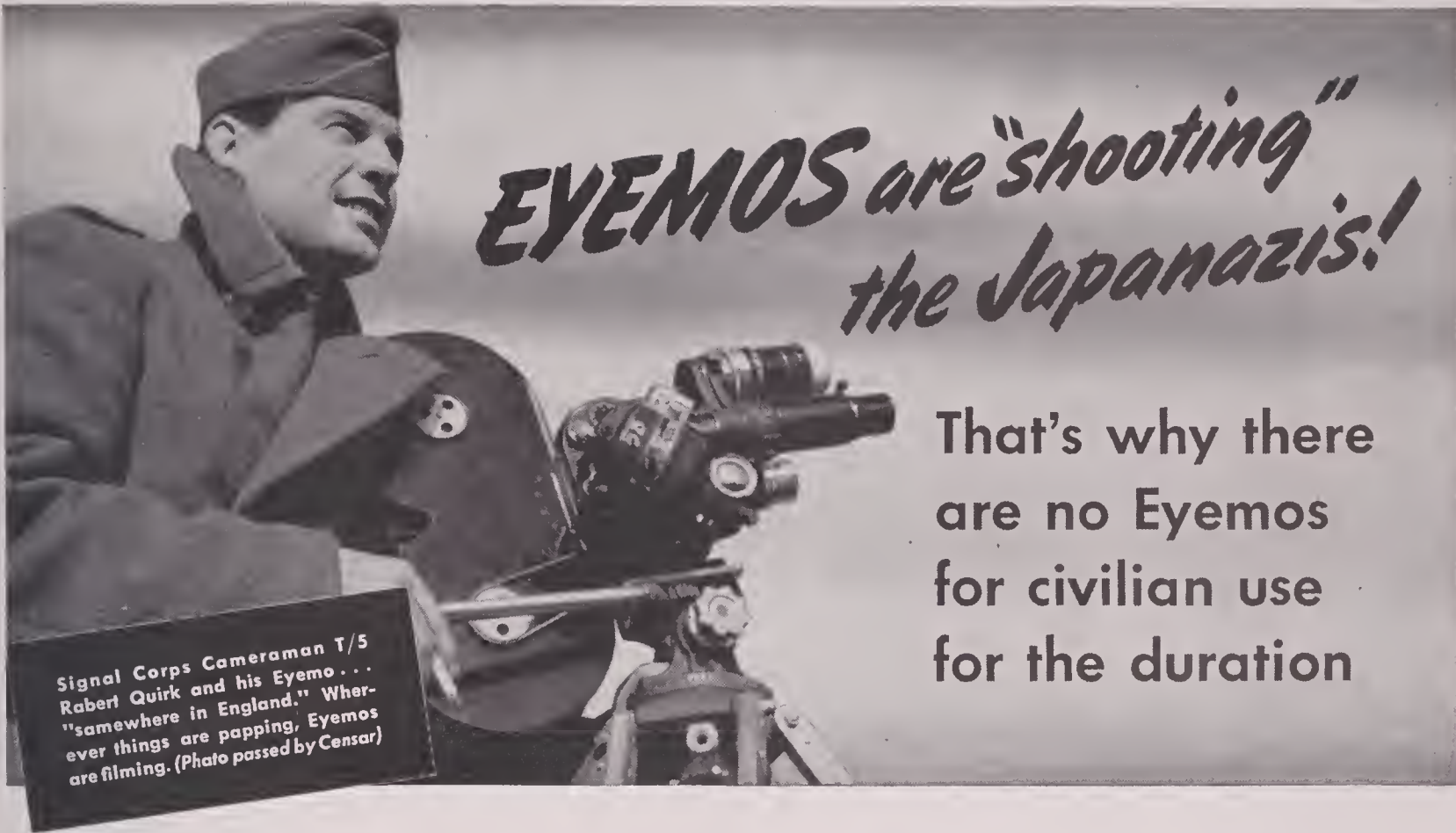
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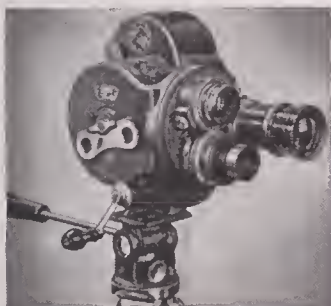
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

JULY, 1943

NO. 7

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The Front Cover

This month's cover shows a unit from Canada's Associated Screen Studios filming a French-language short, "Un de Vingt-deuxieme," for the Canadian Film Board. Behind the camera (with earphones) is the late Lucien Roy, recently killed in line of duty. Note use of newsreel-type Wall single-system sound-camera, and microphone concealed behind the gate.

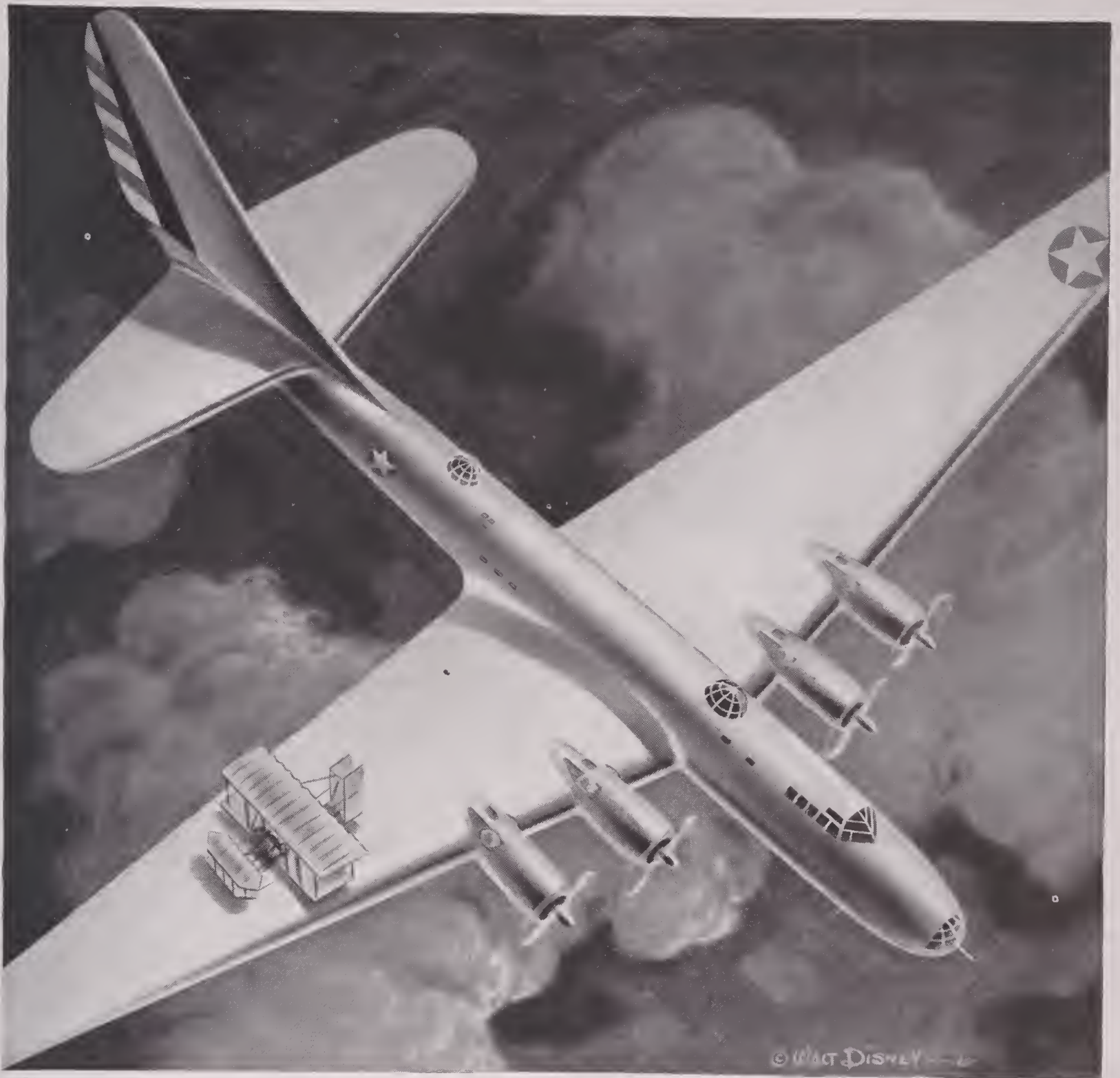


Illustration from the Walt Disney Feature, "VICTORY THROUGH AIR POWER," Major Alexander P. de Seversky's best-selling book.

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Making A Documentary Film At Sea

By EDUARD BUCKMAN

AFTER our shooting was over and we were in Halifax on our way back to the studios of the National Film Board in Ottawa, something happened that reflected our whole experience while making documentary films on East Coast fishing in Canada. Cinematographer Sinclair had to buy a pair of shorts. I went into the store with him. When we came out, he'd found not only shorts, but a suit and a sport jacket, and I'd gotten a top-coat. That was just the way with our films. We'd come expecting to find one thing—something quite ordinary like shorts — and we'd run across something unique — like Bond Street clothes.

It had happened before on our documentary expeditions. No one without first-hand knowledge of a section can sit miles away and expect to write a script about the section which will be correct. Research never seems to turn up just those things which bring a film to life. For instance, we went up to the James Bay area to do a film on trapping with the expectation that there were white trappers and kindly, bearded Hudson's Bay company factors.* What we found were Indian trappers and a Scotsman in a business suit who, as *post manager* (not factor), prided himself that his

store was as up-to-date as any city establishment.

When, last summer and fall, we were assigned to the Nova Scotia fishing front, our ideas were as mixed. We were to feature the fishing co-operatives, "marvels," we were told, of communal achievement, where the humble fisherfolk, banding together in the face of the depression and the oppression of industrial magnates, had literally pulled themselves up to prosperity by their own sea-boot straps! Another member of the Film Board staff had done the preliminary research; and when it was decided that the Sinclair-Buckman Unit, because of its experience in the "roughing-it" type of location, was best qualified to make the film, his files were turned over to us. Of his tentative scripts, one, we later found, was almost a word-for-word transcription of a chronological account of a day on a fishing boat as set forth, for children, in a Nova Scotian grade-school textbook (published, if we recall aright, in 1912).

All of this has only reinforced the attitude Douglas Sinclair and myself have always had about making documentary films. You have to go to the section in question, live among the people, gain their confidence and then report photographically what is there, not what you wanted or hoped to find, if the film is to have validity and truth.

I intentionally write *validity and truth*.

They do not necessarily mean that the documentary will, *as a film*, be good or interesting. Had we conscientiously done the co-operatives, our film, if true, would have been depressing. Our survey showed the co-operatives to be such in name only: a few fishermen with a little capital and encouraged by a religious organization with a government grant, had, in a given community, set up businesses and were themselves—not the community as a whole—receiving such meager profits as there were. In Little Dover (where it was suggested we work because sociological sermonizers had cited it, in book after book, as Nova Scotia's finest co-operative effort), we found that, three months after the inhabitants had built and operated their own lobster-canning factory, over ninety percent of the families were again on relief! Such conditions, if re-enacted for documentary purposes, might provide good propaganda, but wouldn't make good publicity. And our films, however documentary in intent, were designed to show Canada favorably on educational screens outside the Dominion.

I write "documentary in intent" without scruple or reservation. Having, as a unit, produced four films for the National Film Board, Douglas Sinclair and myself certainly have the right to call ourselves documentary film makers. But although we were trained in the school under John Grierson, the dynamic Scotsman who personally promoted the documentary from a sporadic and unrecognized occurrence to its present established place on the screens of the world, neither of us are able to define exactly what a documentary is. To those who grew up in the Grierson school in England, documentary undoubtedly suggests propaganda. But to those of us who grew up in a new country like Canada, it is impossible to place old-world ideas upon new-world realities. So when the two of us were faced with tangible realities, like the North or the Nova Scotian fishing scene, we just had to discard preconceived ideas and go to work on what we found about us.

What we finally found about us in Nova Scotia was Lunenburg. In our survey of the co-operative ground we'd driven through the town and been entranced with its photographic possibilities. Further, as it was the most important fishing center in the area and as, after all, our film was to treat the fishing industry, we decided to make our picture there.

With a town like Lunenburg, which is a Scandinavian dream come to roost on North American soil—every ornate gable, dormer, roof-tree of the wooden houses brilliant with paint (Lunenburg County is said to use as much as all the rest of the province!); with the waterfront a floating forest of tall, spare spars, against which fishermen in sea-clothes shoulder great bundles of sails, carry them past the patient oxen hitched to the carts of dried fish before loading platforms; with the schooners themselves, each a world of its own, a community going by itself far out into the

* (See "The Indians Had a Word for Us," AMERICAN CINEMATOGRAPHER, August, 1942, p. 350.)

Atlantic; with many of the fishermen coming from adjacent villages where tiny houses vividly dot the rugged grey-blue rolling rocks washed by the green-blue sea: with all these things, is it any wonder that, as documentary film makers, we hardly knew on what to focus our cameras?

Besides, we were working in Kodachrome. And color, in a way, is a handicap to documentary treatment. It itself can create effects likely to take the spectator's attention away from the ideas behind the picture. To make a propaganda documentary in color anywhere is decidedly difficult. It appeared an impossibility in Lunenburg where the rigged ships, the fishermen, the ox-carts, all seemed to belong to another age, to have no connection with the effect World War II had on Canadian fishing (the revised theme of our film).

However, the guiding principle behind any documentary was what actually made our decision for us: *feature the most important thing*. That, of course, was fishing. But it was a pretty all-inclusive subject, for there were the little in-shore boats which worked the waters a few miles off-shore, and there were the schooners which went a couple of hundred miles out to the Banks. And there was the human side, too: the way the fishermen lived in the villages and aboard the vessels. We drew up a tentative outline script, calculated to show a little of the life in a typical village—we chose Blue Rocks, photographically ideal—then follow its men, first the in-shore fishermen, then those who did the deep-sea fishing on the schooners.

Now any documentary film-maker has to beware of delusions of grandeur. I'm not speaking in the color sense. I mean he is definitely limited as to the amount of material he can hope to include in a two-reeler. With Kodachrome the price it was (and is more so now), anything longer than two reels isn't acceptable to the average budget of a 16mm. film library. But the more we saw of the life about us, the more we wanted to include in our film. Besides, there literally seemed no end to the color possibilities, and the more we saw the warmth of these, the farther away went the cold counsel we'd received about the economic wartime fishing which the documentary was intended to reveal.

We did the village first. The material presented no difficulties except for certain interiors absolutely essential if the documentary were to suggest the social life in the village. This breaks out sporadically in big get-togethers, known in summer by the misleadingly refined name of "garden parties" and in the winter by the more plebian and accurate appellation of "chowder supper." The main feature of the evening is a continual supper—served from nine to midnight—at long tables facing the walls of the hall where the gatherings are held. With inadequate power supply for our lights, our problem was to photograph the extent of these fifty-foot tables, something which had to be done if the film were to accurately document

the occasion. Cinematographer Sinclair solved the problem by mounting the camera on a three-wheel collapsible dolly and making a dolly-shot down the table, his camera covering a field of some 8 feet, while the power company electrician and myself walked on either side of the camera, each keeping a No. 4 Victor focused on its field.

Where our illusions of grandeur came up against the most aggravating inhibitions was on the "Flora Alberta." She was a deep-sea fishing schooner, one of the newest vessels in the Lunenburg fleet. A craft of some 100 tons, about 125 feet in length, her lines were long and rakish in the best Bluenose style. She had just been repainted and had become something a color cinematographer might dream about for the tortured nights of a lifetime, and never expect to behold in his waking moments.

Above the hull, black with gold trimmings, her decks were green and red, with white pilot-house, hatches, bulwarks and railings. Two thick masts rose in varnished yellow to hold white sails. Up fo'r'ard were stacked the dories—small 18-foot flat-bottomed boats from which the men did the actual fishing. One stack of six was yellow with green trimmings; the other, red with white. The dory gear—line tubs, high-flyer bouys, masts and sails—was multicolored. Given such a background, the men themselves supplied the final touch of color perfection through their yellow oilskins and vivid checked shirts. Cinematographer Sinclair claims all one had to do was to stand anywhere on the deck and focus the camera, and composition automatically resulted. Naturally, that's exaggerating. But certainly, for anyone knowing what he wanted, everything was at hand on the deck of the "Flora Alberta."

Delays seem inevitable when one is making documentaries. Before we could sail on the "Flora Alberta" we had to wait for the paint to dry. Much of the time we passed in the captain's cabin, getting details about the routine on the week to ten days' fishing. In documentary work, our method has always been to get an idea first of what is to happen—and get it from those who do it, not from those who merely write about it—and then try to cast this information into film form on paper. And then, before doing any actual shooting, check everything against actual performance and make script revisions accordingly. So, while waiting for the paint to dry and then waiting for the weather to clear—we had three days of torrential rain, September 21st, the equinox!—we drew up a tentative shooting script for the deep-sea fishing.

Finally the sun came out, and with our shooting notes, the Eastman Ciné-Special, two Filmo 70-DA's, 20 100-ft. reels of Kodachrome, a Leica, an Exakta and still film, we set sail one fine high noon. How beautiful it was sailing through the harbor narrows! But the open sea wasn't so beautiful. From equinoctial storms, the waves were running high. Seaworthy a Bluenose schooner may be, but she *can* roll.



Above and on opposite page are scenes from the film director Buckman and cinematographer Sinclair made of Nova Scotia's "Bluenose" fishing fleet. Above, top, the "Flora Alberta" at her dock and at sea; center, on watch while dories are out setting lines; bottom, loading in the catch. Photos by the author.

When we decided to get a shot of the vessel from the aft cabin roof we learned the precarious angle of which a Bluenose deck is capable. No tripod and camera could have stayed on the pitching roof. Then the crew, whose sea-legs were the steadiest things aboard, came to our help. Three of them lying flat on the cabin roof each held a leg of the tripod, and a fourth, his arm hooked around a guy-rope, held the cinematographer while he somehow got his meter-reading (which, because of the brilliance, required that he shield the "eye" with his cupped

(Continued on Page 277)



With The Advancing Army

By ROMAN KARMEN*

Translated from the Russian

By George Krainukov

THE offensive began at daybreak. Our Soviet infantry broke through the fortified line of German defense. On the very first day of the advance our troops, by direct frontal storming and by clever flanking attacks, dislodged the Germans from many populated points, and when on the following day the snowstorm which had made camerawork impossible for my comrade cinematographer Bobrov and myself, died down, the battle was already rolling in waves, farther away from us to the west. And following in the footsteps of yesterday's bloody fighting the reserves were moving forward—infantry and tanks coming up, and artillery moving forward the better to batter the retreating enemy.

We, too, followed in the footsteps of the battle. Amid the fields scattered with dead heaps of burned-out German tanks, Nazi corpses, and disabled German cars, guns and cartridge-cases, was many a mute tableaux which at a glance told its silent story of victory and defeat. Here, in front of an anti-tank gun destroyed by our shells, are piles of spent cartridges . . . several Nazi corpses . . . and on all of these are the imprint of the heavy treads of a Soviet tank. Wordlessly these told their tale: the Germans had shot at the tank, firing with increasing speed and desperation as the advancing monster drew nearer; but the tank, like our now-advancing Allied armies, relentlessly overpowered the Fascist bandits, ground them into the earth, and plowed farther on, to repeat its job again and again on other enemies.

As we finally reach the front of the little sector to which we are assigned, we see the field in front of the German fortifications covered by the fire of dozens of machine-guns, light guns and automatic rifles. Our troops, without giving the Germans a moment's rest, storm these fortifications. Our artillery covers the German ramparts with a

murderous fire. Our bombers drop their deadly cargo. Our mortarmen add their thunderous salvos to the hail of explosions which seem to make earth and air alike tremble with the fire with which our warriors of all arms deluge our enemies.

For a cameraman, working on this sector of the Central Front is a problem. Our duty is to film the action of the Red Army as it conducts an advancing battle. Against us we have not only the fire of the enemy and sometimes the speed of his retreat, but also our ally—militarily good but often photographically very bad—the Russian winter. Yesterday, on the first day of the attack, we battled a snow-storm; the soft, fresh snow covered our lenses like a clinging, white paste, and swirled through the air so thickly that one could not see objects only a few yards away. But today, with a clear, blue sky and the sun sparkling over the valley in which the battle is unrolling, we



Through a remarkable coincidence we learned that the author of this article, Cinematographer Roman Karmen (left) and the translator, Cinematographer George Krainukov (right) were personal friends, as this picture, made in 1938 in Hankow when they were "covering" the early stages of the Sino-Japanese war for the Soviet Kino-Journal and Universal Newsreel, respectively, shows.

look eagerly forward to getting some fine scenes.

To make our way up to the front lines is not an easy job. At 10 A.M. sharp, our artillery again begins a preparatory softening-up barrage. Over our heads screams the continuous din of the endless flight of our shells toward the enemy positions. Around us, guns of all calibres are barking. Long ago we had left our shelter of the night before. Now our job is to go forward as far as we can—close to the enemy, where we can see and photograph his positions in the village toward which our attack is progressing. We must be in lens-range of the bursting shells of our artillery . . . close enough to film how the waves of our infantry advance, and the work of our dive-bombers overhead, pouring down their rain or bombs!

The farther forward we go, the more often we have to crouch, or even throw ourselves on the ground: not all of the enemy's artillery is destroyed yet, and the German guns are replying quite strongly across the valley. When we hear the familiar, disgusting shriek of an approaching German shell, we, with cameraman Bobrov, duck hastily into what only yesterday had been the German trenches. Out here, beyond the original first line of Nazi defense breached yesterday by our troops, on every hand we see either a dugout, a gun-emplacment or trenches. As we move forward, we must keep strictly on the trail, for elsewhere at every step one is likely to tread upon a hidden German land-mine which our sappers have not yet had time to dig out and render harmless.

At last we reach the observation-post of one of the farthest-advanced companies. From here we can survey the field of battle like the palm of one's hand. Over there is the village toward which our troops are advancing. At last we can begin our shooting!

But good war films cannot be entirely long-shots. We must get closer yet to the village . . . closer yet to the battle we see progressing . . . right into the thick of things, where we can get really close shots of the action!

Bobrov and I discuss our plans with the commander of the unit here, requesting permission to get into a tank and roll ahead with it to a point where we can get the real battle-shots that are our aim. This permission granted, we quickly arrange our plans with the

(Continued on Page 276)



Screen Tests Aren't Necessary!

By CHARLES R. ROGERS

President, Rogers Productions, Inc.

THE other day a very pretty 19-year-old girl named Peggy O'Neill was brought to my office by her agent, Leon Lance. She was looking for a screen career.

Peggy explained that she had no experience in films, had never been in front of a motion picture camera, so consequently had no screen test to show me. We chatted a few minutes about her background and education and her few appearances on the stage of the San Francisco Community Playhouse. She then read some lines from a script and I immediately signed her to a long-term contract.

"But you don't mean to say you signed her without making a screen test of her!" exclaimed one of my friends when I had told him about my new "find".

His exclamation brings me to my point. I do not believe it is necessary to make a screen test in selecting talent because the Directors of Photography in Hollywood have become such masters of their art that you need have no fears over how a man or woman is going to look on the screen. Especially is this true when your own eyes tell you that the girl you are looking at is photogenic. So why waste film—particularly

in these days when it is so scarce—on a "test" that will only tell you something that your eyes and your past experience with cinematographers will have told you already?

As a matter of fact, there are some very positive arguments against making screen-tests of talent, anyway. For one thing, a player—even an experienced one—making a test for a contract or an important part is almost certain to be nervous, so nervous, often, that he or she won't perform as freely as on the actual production. Then, too, there is likely to be some tendency among the crew—the director, the make-up man, the stage crew and sometimes even the cinematographer—to more or less "walk through" a test just because it is "only a test," and they will know that both they and the player can and will do better when the production itself starts. You need only look into the files of any of our studios, where you'll find condemnatory verdicts on tests of players other studios later signed and built into stars, to realize how unfair and unnecessary such tests can be.

There have been, and still are, many stars who owe their screen glamor to the cinematographers. These players recognize the fact and in many instances

No screen test is necessary to tell you that Peggy O'Neill (left) and Harald Ramond are good screen bets—especially when photographed by skillful Hollywood cinematographers. (Portraits by Maurine.)

demand that only certain cameramen photograph their pictures.

It would not be fair to mention names in this article, but we in the picture industry know that the art of our cinematographers hides even scars and blemishes on the faces of some of our stars. Some feminine noses that are anything but beautiful become actually glamorous on the screen because of the manner in which our cameramen can photograph them. Some eyes that are actually "washed out" and lusterless take on vivacity and sparkle because of our cameramen's tricks of lighting.

These cameramen are artists in the use of lights and shadows, using the highlight to accentuate the best features and soft shadows to subordinate the less favorable ones. I have seen some of these artists, lighting a close-up of a not particularly glamorous girl, blend in decorative shadow-patterns on the back-wall with the lights and shadows on the subject giving his composition a delightful softness that made the girl seem gorgeously beautiful. Our photographers have developed a technique which I call "suggestion". A suggestion of glamor is given—and the imagination of the audience does the rest.

For a number of years, many stage stars who knew they were not glamorous, shunned the films for fear they would not be able to compete with what was known as the typical film glamor-girl. There were some producers, too,

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The Rhapsodic Technique

By E. S. ROBERTS

THE Office of War Information has accepted "The Thousand Days" for distribution in the United States—the first Canadian-produced motion picture to be placed on their list of War Films for War Use. It is recommended for use in programs to promote United Nations unity.

This subject, produced by Associated Screen Studios of Montreal, is interesting on other counts as well. Independently produced for original theatrical release, it is the first authentic motion picture record by Canadians of Canada's war years—covering the first thousand days since September, 1939, when Canada declared war on Germany.

Perhaps of greater interest is the technique used by the producer in telling the story of Canada's first three years of war, as exemplified in "The Thousand Days." Gordon Sparling, production supervisor for Associated Screen Studios, directed the two-reeler, and coined the term "rhapsodic" to describe the treatment of this Canadian cameo production. It does suggest a new and specific form in the art of motion picture expression.

The technique used here has been termed "rhapsodic" since the story is told by linking otherwise disconnected bits and pieces. Visually and orally there are a large number of disconnected sequences. Each by itself has little or no meaning, yet blends in natural relationship in the complete composition.

As in musical expression, the rhapsodic treatment uses recurring themes

to carry the pattern with sweep and flow. Visually, characters may be introduced repeatedly to provide conjunctive individual scenes.

Recurring words or voices also serve this purpose, as do repeated individual sounds. Repetition of musical themes serves to build an emotional climax from these seemingly disconnected bits.

The rhapsodic technique has been employed experimentally in a number of Associated Screen pictures, but "The Thousand Days" was the first two-reel film making use of this style throughout. As with any new variation in artistic treatment, there is an understandable reluctance to venture away from tried and proven methods. It was not until the producer had partially proven the effectiveness of the technique in previous films and had a vehicle which seemed ideally suited to the new style, that it was given a fair chance to prove itself.

Gordon Sparling does not look on "The Thousand Days" as an example of the perfection of the rhapsodic technique, but does feel that much has been done to crystallize the basic factors employed, and particularly that it hints at the possibilities for developing an interesting and powerful form of film expression.

Many of the effects are admittedly subconscious—not in themselves noticed by the audience—but they provide important undercurrents in the progression of the story.

The first experimental use of the rhapsodic technique was about ten years ago in the production of "Rhapsody in Two

Languages" . . . an interpretation of the life of bi-lingual Montreal from dawn to dawn.

Since that time, it has been employed for sequences in a number of other pictures . . . for instance in "The Kinsmen" . . . which was produced for The Canadian Wheat Board. The rhapsodic technique was employed to good effect in one sequence to describe that period of suspense from the spring days when the seed had been planted until it was safely harvested. The days between are fraught with worry for the prairie farmer. Three common items are repeated over and over again . . . farmers gazing at the sky . . . farmers at their radios listening to the daily crop reports . . . the wheat itself gradually growing to maturity. Whispering voices are heard in a slow rhythm, saying, "No frost" . . . "Enough rain" . . . "No hail" . . . The passage of time is indicated by a vibrant voice punctuating the sequence with "June" . . . "July" . . . "August" . . . and, blending through it all, an orchestral score which starts with tremolo violins and gradually builds up to a crescendo of strings and woodwinds interrupted by stabbing trumpet notes expressive of the farmers' thoughts and worries.

The rhapsodic technique differs from the dramatic or the documentary in that there is less obvious progression. In the dramatic treatment, the plot is developed through words and actions of the characters used. In documentary, a commentator delivers a lecture illustrated by scenes . . . scenes which are usually chosen for their factual rather than their aesthetic value. In the new rhapsodic technique, seemingly unrelated bits of action are used, eavesdropping on snatches of conversations, employing only the key bits of scenes—but always with some sort of bridging, either visual, vocal, or musical. No one commentator carries the main theme, but many voices may be used, some of them by visible characters, others merely as thoughts.

In "The Thousand Days," a newspaper editor lifts a phone to reveal a thread that carries the story. Overhearing his conversation with an assistant, we learn something important is happening. The editor answering the phone, and the hammering teletype, give us the answer.

Two quick scenes dramatize that answer . . . first a storm cloud obscuring the sun, and then a quiet hospital room, during which an impersonal voice says: "September third, nineteen thirty-nine. In Europe, a storm broke. In Canada, a child was born . . . into what sort of a world?"

A new era dawns with the declaration of war, and what came out of it is represented by that baby. Its later appearances in the picture have the double symbolism of Canada's growing war effort and its bearing on the character of the new era. The second appearance of the infant, in its mother's arms, at the end of the first year, adds to the symbolism of the war effort and its development, and provides an opportunity to slow down the pace for building to a later climax. It also provides the basis

tor an emotional change as we bring in the idea of 'women without men' carrying on.

The inactive first winter of the war, with its conflicting opinions and uncertainties, is treated rhapsodically by a matter-of-fact scene of two stock-brokers examining a ticker tape which says "December, 1939 . . . Nothing to Report." One stock-broker says, "Funny kind of war this is," and the other replies, "Funny war? . . . It's a *phony* war, if you ask me." The elements of this scene not only plant a mood in the minds of the audience, but supply a pictorial theme for providing continuity for the sequence. In other words, the war is a thing far off. It touches people only indirectly, as when the news comes over their ticker tape.

Another flash of the tape says "January, 1940 . . . Nothing to Report." Then a flash of our newspaper editor amused by a dispatch showing the ponderous pace of the war machine.

The ticker tape again: "February, 1940 . . . Nothing to Report." A businessman, symbolic of the complacent attitude of the Chamberlain régime, comments: "Well, I think we've got Hitler bluffed. He doesn't dare risk a first-class war."

Again the ticker tape. "March, 1940 . . . Nothing to Report." Then, for contrast, the thoughts of a working man who, on the average, was perhaps not as sure of the "good" state of affairs. A machinist would have done . . . a lathe- or milling machine-operator. But in the final script a figure symbolic of them all, yet logical, evolved—a blacksmith.

He is used to bring to a climax those days when the war seemed to be a waiting stalemate. The blacksmith at his anvil stops with hammer poised to say to a friend: "All this talk of Hitler making peace proposals is the bunk. He's getting ready . . . and when he's ready, he's gonna strike!"

That last word is emphasized by his hammer striking the anvil. The brief scene immediately following is of a newsboy shouting "Hitler strikes!" as he holds up his papers. The headline reads "Norway Invaded." The anvil rings again, to complete the conjunction of the two sequences. Other newspaper headlines flash by: "Denmark Bows" . . . "Holland Overrun" . . . "Belgium Beaten" . . . "France Falls"; . . . and, as each appears, the anvil is heard again. The rhapsodic use of the image, visual or auditory of "striking" thus not only advances the story, but plants an idea which will be used for the final climax of the picture.

It is the spirit of the ordinary man and woman which will win the final victory. So it is natural that the blacksmith should appear for the picture's tag line. A number of types set the scene, as one after the other they appear, in big close-ups, to speak a short phrase, or just a word: "We have stood up to the enemy." . . . "We can strike back . . ." . . . " . . . harder . . ." " . . . longer . . ." . . . "Now it's our turn . . ." (and here the blacksmith is again

seen at his anvil) . . . " . . . to choose when and where we strike. And, when we do . . . watch out!" The repetition of the clanging hammer on anvil carries through the fadeout into the end-title music.

There are perhaps a few other instances which might bear quoting to demonstrate how symbolism may be employed in the rhapsodic technique, and how unrelated scenes may be integrated in logical sequence.

Close-up of an alarm-clock. Time: 7:35. As a voice says: "At dawn on war's eight hundred and twenty-fifth day . . .", the alarm commences to ring violently, coming to extreme close-up, showing the words "MADE IN JAPAN."

The ringing of a telephone bell blends with that of the alarm-clock. A man answers. "Hello . . . yes . . . Washington and Ottawa . . . right . . . to the West Coast."

Then a babble of voices and flashing scenes—Soldiers marching, "To the West Coast." Planes in the air, "To British Columbia." Destroyer at sea, "To Alaska." "To the West Coast." This is followed by quiet scenes of the Japanese fishing-fleet interned, and voice saying, "Now the democracies knew! At last the masks were down, and friend and foe stood clear"—thus was told the story of Japan's entry into the war on the side of the Axis, in rapid tempo, in rhapsodic style.

Another example: Newspaper headline: "Hitler attacks Russia!" Scene in a club, one man reading a paper looks up to say: "So another stab in the back gives us a new friend." Another man: "Looks bad. I suppose it will be the same thing again. The Germans will go through them like . . ." Scene and sentence are cut off, replaced by factory worker, his buzz-saw cutting through wood. "But as long as they can tie up Adolph's armies, they are giving us the chance of a lifetime."

There is no ordinary continuity between a rather smug scene in a men's club and a woodworking shop, yet these two brief flashes are made to bear a logical relation in the rhapsodic treatment. By taking two conversations—the one between two men in their club, the other between two factory workers—either of which could have been complete in itself, and cutting them in such a way and at such a point that one seems to answer the other, there is achieved a continuity typical of the rhapsodic technique.

The rhapsodic technique is particularly suitable as a means for compressing much into a short-length film. It is not a style to use for leisurely development of a story, but, like its musical namesake, is rather a treatment for telling a story in which contrasts and rapid emotional changes are required. It is useful in bridging wide gaps in time and place.

Rhythm is important in the successful use of the rhapsodic technique. This applies not only to the action, the sounds, and the music, but especially to the ac-



Above, several of the disconnected thematic visual elements interwoven to make "The Thousand Days." On opposite page, a photomontage of some of these elements which were used, however, as straight cuts, rather than as superimpositions.

tual cutting. The dramatic and climactic effect of a sequence may often be heightened by "rhythmic cutting"—that is: where the physical lengths of scenes is exactly the same, regardless of the action in them individually. This requires careful choice of action to insure that the most significant portion of each is retained. By careful planning, an entire sequence may be composed of, say: 3-foot (2-second) scenes. Thus, there is a purely mechanical and subconscious rhythm implanted on the audience. If desirable, these lengths can be gradually reduced to speed up the tempo toward a climax. This, of course, is not a new principle, but it is a method which proves itself particularly adaptable to the rhapsodic technique.

In "The Thousand Days," 80% of its scenes were not more than five seconds in length. This required careful writing, to make every spoken word significant to the point that was being made. It required painstaking rehearsal and shooting to assume the proper tempo within

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HOLLYWOOD'S FIRST "E"—Cecil Bardwell (left, standing) receives the Army-Navy "E" Award for excellence in War Production.

Hollywood's Own War Plants

By WILLIAM STULL, A. S. C.

IT isn't revealing any military secret when one admits proudly that the many major firms which have so long supplied Hollywood's studios with cameras, film, lenses, sound equipment, and the like are now diverting all, or at least a major part of their production to the War Effort. But it is not so well known that many of the smaller organizations located directly in the film capitol, and which have provided the industry with such specialized equipment as lighting units, studio cameras, and the like, are doing perhaps an even more spectacular job in turning their production and designing facilities to the service of the Nation at war. Some of them are turning out, in vastly increased quantities, their regular or similar products. Others have in addition taken over the development and manufacture of specialized items in more or less allied fields, but for wartime uses.

Perhaps the most spectacular and varied of these is the record chalked up by Bardwell & McAlister, the peace-time manufacturers of the "Keglights," "Dinky Inkies," and other lighting units so familiar in every studio. A comparatively new and highly progressive competitor in the studio lighting field before the war, this firm has expanded both its plant and its products until now it is turning out an amazing variety of vitally-needed wartime products. Months before Pearl Harbor, the already-expanding aircraft industry began to draw upon Bardwell-McAlister "know how" to speed and simplify the production of hard-to-shape sheet-metal subassemblies for Axis-blasting aircraft. Today, these products are streaming out in constantly heavier

truck-loads to do their part on the fighting fronts. B and M ingenuity, too, had developed a radically different, quickly changeable pilot-light for instrument panels, which slashed the time for changing these tiny but necessary units from over an hour to a minute or less. Since then, the firm's specialized experience in designing and building lighting equipment has brought forth an amazing variety of specialized instrument and desk illuminants for planes which are in action on all our fighting fronts. Meantime, the production of studio-type lighting equipment for the Army, Navy, Air Force and Marine Corps training film studios has swelled to match the expanding needs of these Service cinematographic branches.

Small wonder it is, then, that only last month Bardwell & McAlister became the first Hollywood firm of those normally supplying the film industry to be awarded the coveted Army-Navy "E" for excellence in production.

Nearby, Mole-Richardson, Inc., the parents of today's Fresnel-lensed "inkies" and Technicolor arcs, have kept equally busy turning out not only their regular photographic lamps, but also special, highly secret portable searchlight and generator equipment for spotting enemy planes in the air wherever American troops are in action. They, too, have received high commendation from the high officials of our Services who have seen the performance of this equipment in the actual combat zones.

Most of Hollywood's studio cameras have come from the plant of the Mitchell Camera Corp. . . . but today, Mitchell cameras of all types are being turned

out in greater quantity than was ever believed possible, for these units are anxiously awaited by Uncle Sam's military cameramen all over the world. Other devices—secret and very special—are being made, too, on a production scale even the most optimistic would have considered impossible for such precision equipment only a brief two or three years ago.

Bell & Howell's Hollywood plant, so long a service center for specialized equipment, and the starting-point for many a design for revolutionary studio and laboratory equipment, is today working at full pressure and on an expanding scale, producing and developing intensely specialized cinemachinery for the photographic sections of many of the nations now united to crush the Axis—and record it on film in the process.

Art Reeves is another of the suppliers of camera, laboratory and sound equipment who has found his regular products in heavier demand than ever before, as adjuncts to the varied uses being made today of military photography.

So, too, is Eric M. Berndt's "Auricon" 16mm. single- and double-system sound-recording equipment. It is hardly telling tales out of school to hint that one of our most distinguished actors—incidentally a 16mm. filmer of note and ability—is using this equipment to make special instructional films for the Air Force in overseas combat areas.

No listing of the War Effort contributions of Hollywood's cinetechnical firms and branches could be complete without mentioning the work being done by Emery Huse, A.S.C., and his staff in the Eastman Kodak West Coast Technical Department in the joint A.S.C.-Academy projects of training combat cameramen for the Signal Corps and Marine Corps, for it is under Huse's tutelage that these students get their grounding in the more theoretical side of photochemistry, sensitometry, optics, etc., before passing on to John Arnold and other A.S.C. members for their practical instruction in camera-handling. The total of these trainees is probably a military secret, but it is considerable, and the graduates are already distinguishing themselves on all our combat fronts, as well as in training film production.

In a brief summary like this, it is inevitable that some of the firms making distinguished contributions to the War Effort should be left out—in some cases deliberately, because of the confidential nature of their work. But all of them are responding vitally to the Nation's call of need, turning their specialized skills and their knowledge of how to solve intricate and often unconventional technical problems overnight to the benefit of their country. In fact, as one expert recently expressed it, "The normal demands of Hollywood's studios, who customarily expect the technically impossible to be served up in working order

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Aces of the Camera

XXX:

Virgil Miller, A. S. C.

By WALTER BLANCHARD

VERSATILITY is the word for Virgil E. Miller, A.S.C. He is versatile above average as a cinematographer, for in his twenty-seven year career as a cameraman he has proven his artistry and technical skill on upwards of 200 productions—super-specials and program-pictures alike—and he is equally at home working in black-and-white, Technicolor or professional 16mm. Kodachrome. But beyond this, he is also a capable executive (he has headed the Camera Departments of two major studios), a skilled electrical engineer, a capable writer of both prose and verse, and in his spare time talented artist with pencil and brush. He has, too, a notable string of cinetechnical “firsts” and a great deal of important cinematographic research to his credit.

Virge Miller, you see, didn't start out specifically to be a cameraman. He grew up as a farm boy in southern Illinois and, after completing high school, business college, and a year at a neighboring college, he decided he'd better work for a while to build up a war-chest to help take him through college. And for some reason he decided to come out to Southern California to do the working. His first job was with a crew running the first electric power-line between what are now Hollywood and Burbank; today it's a well-populated residential district, with several studios like Warner's, Universal and Walt Disney's “mouse-factory” strung along the route; but thirty-odd years ago it was a bare desert.

Electrical work fascinated young Miller so much that he decided to learn as much about it as he could. He learned quickly, too—so quickly that before long he found himself working as foreman of one of the crews, and gaining an excellent practical knowledge of electrical installation. And he decided that electrical engineering was the profession he wanted to learn.

So, when the bankroll was sufficiently built up, back he went to enroll in Kansas State College as a student in electrical engineering. His practical experience in electrical work helped him immeasurably in working his way through college, for after a short period of the usual working-through-school occupation of dishwashing, one of his professors

recommended him for a post in the college's electrical maintenance department, and only a short time later, when the head of that department retired, he recommended young Miller over the heads of many senior students to be his successor. Thereafter Virge remained as college electrician until graduation, staying on in the summer-time not only to help his bankroll, but also to gain more experience. He re-wired most of the buildings on the campus, and ran laboratory and practical tests on electrical equipment for various of the State's departments. In his Senior year, he was called upon, too, to serve as an instructor in electricity for junior engineering students, and the following year, while he waited for the girl who is now Mrs. Miller to graduate, he served on the faculty as a full-fledged instructor.

After his wedding, he decided that California would be a good place for a young man to make his future and raise a family at the same time. He was right on both counts, for he quickly found an excellent position as resident engineer for one of California's first power-plants, tucked away in the High Sierras beyond Bishop. Some months later he found, too, that the first of his five sons was on his way to join the family. And as an isolated power-plant high in the mountains isn't exactly the best place in the world for an expectant parent, Virge decided to move back to Los Angeles and civilized conveniences.

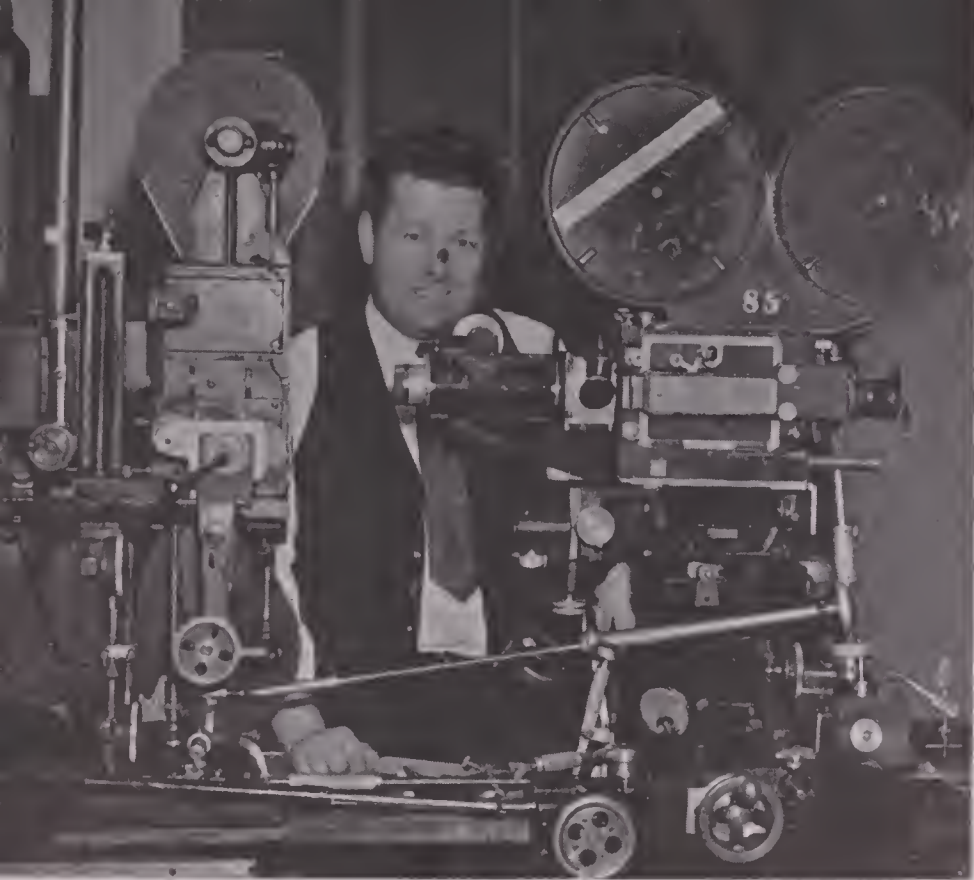
This move—though he didn't realize it at the time—marked the major turning-point in his life. Scouting around for jobs at which an aspiring young electrical engineer could be useful, he learned that the Universal Studio (then still in Hollywood) was looking for an electrical expert to install an electrical department. He went after the job—and got it. So, during 1913 and 1914, Virgil Miller installed and headed the first electrical department in any West Coast studio.



“That was a revolutionary departure for those days,” he reminds you, “for the movie companies had come to California originally because of the sunshine . . . so that they could make pictures all year 'round without having to rely on the faint winter sunlight of the East, or on expensive artificial light for making pictures during the winter. Plenty of people laughed at Universal for putting in an electrical department—said it was like carrying coals to Newcastle to use lamps when you had the famous California sunshine to light your sets free. But one after the other, all the studios came to it, ‘blacking out’ the glassed-in stages they had originally used, and building new ones with opaque walls when new stages were needed. One or two of those old ‘glass stages’ still remain—as scene docks and prop-storage lofts—but the last one actually in Hollywood, at the old Fox Western Avenue Studio, was torn down only a few weeks ago. Maybe another link with the past is gone—but when you think of the tremendous strides cinematography has made since we first started using artificial light for our pictures, rather than half-controlled sunlight, you couldn't wish those ‘good old days’ back!”

After heading Universal's electrical department for two years, during which he participated in the planning and much of the installation for Universal's new ranch-studio, Universal City, which still houses today's Universal, Miller began to develop an interest in cameras and camerawork, and was in time transferred

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Unseen Camera-Aces

II:

Linwood Dunn, A. S. C.

By WALTER BLANCHARD

ONCE in a while, on the credit-titles of RKO productions, you may chance to see the line, "Optical Effects by Linwood Dunn, A.S.C." You only see that credit-line on rarely spectacular occasions, though, for Lin Dunn is an optical printer expert, and optical printing is one of the industry's prime "trade secrets." But Lin is not only one of the most valued members of Vern Walker's RKO Camera Effects Department, but indisputably one of the foremost, if not actually the foremost of optical printer virtuosos in the industry.

Many people, even within the industry, haven't a very clear idea of what an optical printer really is, except that it seems to be a photographic magician's hat out of which a skilled specialist can pull almost any variety of photographic miracle. But as Lin explains it, an optical printer—or at least its basic principle—is simple enough: it's a device in which a camera-head is precisely aligned with a lenseless projector-head which, equipped with a pilot-pin movement, moves a developed film past a diffused light-source so that the film in the camera-head records that image frame

by frame as the two movements work in synchronism. That's the basic idea—but you can dress it up with all sorts of gadgets for producing special effects; you can gear the two movements so that they operate at different frame-frequencies, enabling you to print only every second, third, or fourth frame, or to print a single frame on an indefinite footage in the camera-head. You can print the action of the film in the printer side either forward or backward. You can alter the separation of the two heads during a shot, or use a "zoom" lens, and make a stationary-camera shot into a dolly-shot (or vice-versa). You can add mechanical and optical gadgets which permit an almost endless variety of wipes, fades, melts and tricky transitions and superimpositions. And when you begin to ask an optical printer to do these tricks you find yourself in need of an optical specialist like Lin Dunn.

Strangely enough, in view of the intensely technical work which he is now doing, Lin didn't, at the outset, care for technical studies. In fact, during his school years in Brooklyn, he tried to avoid them as much as possible, preferring to study music. He's still an ac-

complished musician, playing the saxophone, clarinet, violin and a variety of other instruments, and for a long time retained his membership in the Musicians' Union which, in earlier days when camerawork hit slack periods and he needed something to keep the wolf away from his door, proved a very practical bit of sentiment.

"I became interested in motion pictures," he says, "because my uncle, Spencer Bennet, was a director on Pathé serials. But as there was no opening just then with the Pathé Serial Unit, I worked for two years as a projectionist in the non-theatrical field for the American Motion Picture Corp.

"When I finally got a chance with my uncle's unit, I began as an Assistant Cameraman, and worked my way slowly up to Second Cameraman and finally to First Cameraman. And when my 'break' as a First Cinematographer finally came, it forced me to make a heart-wrenching decision. I'd wanted that chance for years. I had also wanted a chance to make a trip around the world. And both opportunities were presented at the same time—the latter, as musical director on one of the Dollar Line's globe-girdling cruisers.

"That was a tough choice to make—but I chose camerawork, and I'm not sorry I did. By a strange coincidence, I started my first picture as a full-fledged First Cinematographer, not only on the same day the ship sailed, but on location less than two blocks from the pier!

"Getting back to pictures, I've always felt that the training I received making those serials was invaluable to me, for serials cover almost every variety of cinematography, and under all sorts of conditions, both good and bad. Serials—even more than comedies, I think—give a cameraman an all-round practical training that can only be compared to theatrical stock company work for an actor. After you've put in a few years photographing serials, you feel as though you could tackle anything."

This confidence was tested when finally the Pathé Serial Unit was disbanded. Lin spent some time free-lancing in both the major studios and the independent or "quickie" field. Finally he joined RKO in 1929, when the studio's trick department was just being established . . . and got his first look at an optical printer. Since then, he has done almost every type of trick and special-process photography, but he likes optical printing the best, for he feels that good optical printing is one of the mainstays of any well-organized trick department.

Modern special-effects camerawork, as he points out, embraces a remarkably wide variety of specialized processes and operations. In some studios, the staff working with each of these processes forms a more or less separate department; in others, as with Vern Walker's department at RKO, the specialists handling matte shots, miniatures, background-projection "process-shots," optical printing, and sometimes titles and in-

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THROUGH the EDITOR'S FINDER

A MONTH ago in this space we unburdened ourselves of a few remarks about the need for greater standardization of studio camera equipment and accessories. That this need is not confined wholly to 35mm. professional cinemachinery is indicated by a letter we received soon after, from the president of one of the most progressive amateur cinema clubs in the east-coast region. Said he, "Your plea for standardization of studio equipment hit home here with the amateurs as well. As you know, the same deviation in regard to lens-mounts, etc., exists to an even greater extent in amateur equipment. I can name at least two major manufacturers who put out products in which essential units which should and could be standardized are not interchangeable between different models of the same make and size of equipment. For example, two different cameras of the same make and size—either both 16mm., or both 8mm.—are fitted with lens-mounts which are not interchangeable. Even the frame-lines of some of the identical models of a product will not match up, nor can you be sure your film will be aligned the same way in two otherwise identical projectors of the same make. Of course, as you say, there's nothing much that we can do about it now; but after the war, if something could be pushed through along these lines to make some of the manufacturers see the light, the amateurs of this country would sure appreciate it!"

This need for greater standardization in the substandard field extends with equal importance to the 16mm. professional field. True, we have well-established dimensional standards for film, perforations, frame-sizes and sound-tracks for 16mm. (we have all except the latter for 8mm., too) but these standards are not always adhered to, and some others, badly needed, don't even exist. For example, in starting a professional 16mm. production, the first thing any experienced 16mm. cameraman or producer considers is, if more than a single camera is to be used, will the scenes shot with all the cameras (or magazines) used frame up identically. Interchangeability of lens-mounts, sound drives, etc.—or the lack of it—is another problem. And the lack of uniformity between 16mm. sound projectors is a perpetual hazard to the producers, recorders and sponsors of professional 16mm. films; even if a picture sounds perfect on the producer's or sponsor's own machines, there is no guarantee that it will sound that well—or even sound acceptable—on machines in the field, even of the same make.

There seems little doubt that substandard cinematography—both 16mm. and 8mm., and professional and amateur—will experience after the war an even greater boom than followed the introduction of 8mm. and the "candid camera craze" of some seven or eight years ago. Today, our makers of cinemachinery,

while they are of course immediately busy with war production, are unquestionably giving thought to vastly improved post-war equipment. And while they are now mentally or otherwise "tooling up" for post-war production, let us hope that they are also giving due thought to increasing the standardization and interchangeability—on an industry-wide scale—of these basic elements and accessories of their products. We would not by any means have all substandard cameras, lenses and projectors identical in all features and performance: but the assurance that any 16mm.-mounted lens would fit on any 16mm. camera, or any 8mm.-mounted lens on any 8mm. camera, and that film shot in a camera of any given type would align with film shot in any other camera, and on any projector, would immeasurably advance substandard cinematography, whether as a hobby or as a profession.

WE wish somebody would explain to us the logic of the way some studios too often preview their pictures. They spend hundreds of thousands—sometimes millions—of dollars in making a production. They spend a great part of this in glamorous acting personalities, and in scripts, direction and acting which combine to produce definite dramatic moods. They spend many thousands of dollars and great care picking a director of photography whose work they know will set off these players to the best advantage, and aid most powerfully in establishing and building by visual means the emotional responses they want from their audiences.

Then they show the picture to the press—in the form, all too often, of a work-print which is scratched and dirty, perhaps with the fades and other transitions or effects not yet cut into place. Or they show what seems like a first composite print, in which scene densities are not yet balanced as perfectly as they will be in the release-print, and often with the 1000-foot reel-units temporarily spliced to the 2000-foot projection reels with embarrassingly obvious tape splices. Sometimes they may show a print made for low-intensity projection on a high-intensity projector, or one made for high-intensity projection on a low-intensity machine.

And they expect the press, very few of whom are capable of making allowance for these technicalities, and the improvements that can be expected when a properly-balanced print is shown under normal projection conditions, to judge the picture by what they see on the screen under these generally unrecognized handicaps!

Of course, from the producer's viewpoint it does not matter too greatly if those reviewers who do comment on photography give the cameraman an unfavorable review when they see a picture under these unfavorable conditions. But it should matter very much to the producer

if for this reason, which is entirely within his control, the critics say that his star does not look well, or that somehow his picture failed to evoke the emotional response it ought to. Bad prints, with or without bad projection, can produce just such comments. No producer today would gamble on previewing a 1943 production on a 1923 DeForest Phonofilm sound-film projector. Previewing unbalanced work-prints or first prints, or using ill-matched print and projection illumination is just as hazardous a gamble. So why do it — — ?

PERHAPS blowing one's own horn isn't exactly the best of taste, but we can't help expressing a glow of satisfaction over the evidence we have that THE AMERICAN CINEMATOGRAPHER is without doubt one of the most extensively read and quoted cinetechical journals in the world. Some months ago, we were informed that this was one of the "learned journals" selected by the U. S. State Department for microfilm transmission to China, and we are constantly surprised—and pleased—when we find that official cinetechical visitors from distant lands like Russia, Britain, Australia, China, India and Latin-America are as familiar with our magazine and its staff as though they lived across the street from us here in Hollywood.

We were flattered, too, when within a very few days' time recently the postman brought us cine- and phototechnical journals from points as far separated as Australia and England in which articles from THE AMERICAN CINEMATOGRAPHER were reproduced in whole or in part, while permission to reproduce another article dealing with 16mm. sound projection was sought almost simultaneously by a national magazine for professional projectionists, and by the visual-education departments of two of our foremost universities, while letters from officers in charge of training-film work among our Armed Services told us of many articles designated as "required reading" for the men in their commands. We cannot overlook, either, that one manufacturer of a rather expensive professional instrument, who since he started business nearly two years ago has advertised *only* in this magazine, has sold hundreds of these costly instruments not only in this country but in Latin America, England, South Africa and also so extensively among the photographic sections of our Armed Services that he can now accept virtually no civilian orders.

All this is recognition . . . but it is also irrefutable evidence of a responsibility we do not take lightly. And despite all the difficulties of getting out a technical magazine in times like these, we will strive to continue to bring the best of cinetechical information to the worldwide circle of readers who have so flatteringly expressed their appreciation of our efforts in their behalf.

A.S.C. on Parade



Hats off again to our favorite Swede, Air Force Capt. Ray Fernstrom, A.S.C. Last month we printed his letters telling how he was wounded in action over the German lines. This month, word comes officially that he has become the first A.S.C.-member to be decorated. On May 26th, in the African base hospital where Ray is recuperating from his wound, Major General Lewis H. Brereton, U. S. Middle East Commander, pinned not only the Purple Heart Medal, but also the Air Medal with bronze Oak Leaf Cluster, indicative of a second Air Medal award, on Ray's tunic. The sketch of Capt. Fernstrom above was made by Lt. Atkins, of the Air Force, and sent to us with a cheery note from Ray, from the American hospital from which we hope he is now discharged as cured. Nice going, Ray, we're proud of you!

★
 Congratulations to Navy Lieutenants Joe August, A.S.C., Harry Davis, A.S.C., Al Gilks, A.S.C., Sol Halprin, A.S.C., Al Siegler, A.S.C., Gregg Toland, A.S.C., and Harold Wenstrom, A.S.C., on receiving well-earned promotions to the rank of Lieutenant Commander. Most of them have been on active duty since months before Pearl Harbor, and doing exceptional—if unpublicized—work all over the world. We're proud to learn they're now "two-and-a-half-stripers."

★
 We're sorry to report that Charles Rosher, A.S.C., has been absent from his usual haunts out MGM way, due to serious illness, but the latest bulletin is that he's getting better fast. Ray June, A.S.C., is also reported as improving, but not yet able to receive visitors. We wish both of them a speedy recovery.

★
 When things happen to Bob Burks, A.S.C., they don't happen singly: as-

signed to direct the photography of Warners' "In Our Time," his first venture into "production" cinematography after long experience with special-process work. About the same time he became a papa—also, we believe, his first; and to cap the climax, a slip on the set landed him in the hospital with a broken leg. As we go to press, report is that he is recovering as comfortably as possible, with a big cast on his injured leg . . . well, we'd rather have a cast on our leg than some casts we've known on our hands!

★
 A note from Capt. Osmond Borradaile, A.S.C., up in Canada recuperating from injuries received in North Africa, asks us please to correct the statement made some time back, that he was decorated for his achievements. "T'ain't so, he says, though the brass hats did pat him soundly on the back for what he did in Abyssinia and North Africa.

★
 The other day we had a surprise visit from Reggie Lyons, one of the earliest members of the A.S.C. He is now working as a civilian cinematographer with the Signal Corps Training Film Lab. at Wright Field, Ohio—or rather working out of there, for he tells us that within the past few months he's been on 18 locations all the way from Brooklyn to California, shooting training films for the Army Air Force. He promises an article on training film production as soon as he gets time to write it.



★
 An unexpected visitor from out-of-town this month was genial Len H. Roos, A.S.C., F.R.P.S., who represents the Newsreel Pool in the Hawaiian area. On a quick trip to see his bosses in New York (and maybe to tell them more about his hush-hush experience 'covering' Pearl Harbor that memorable Dec. 7th) we were lucky enough to grab the above shot of War-Correspondent Len being welcomed home the camera-shy by A.S.C.-Prexy Len Smith . . . we don't intend to be corny, but we're tempted to caption the pic "Two swell Lens-ers." Ouch! We'll be good!



★
 Congratulations to Associate Member E. P. "Ted" Curtis, A.S.C. For the past several months he's been doing a whale of a job on General Spaatz' Air Force staff in North Africa, and now word comes from Washington that he has been promoted to Brigadier General. 'Way back in 1940 Ted took leave of his job as head of Eastman's Motion Picture Film Sales Dept., and went on active duty as an Air Force Major—the same rank he held at the end of World War I, from which he came home as one of America's leading "aces" and a Squadron Commander, as well. His climb from that rank to Brigadier General is something anyone who ever knew the genial, efficient General Curtis could have easily foretold, one in which all his friends can take sincere pride.

★
 Thanks to Russell Harlan, A.S.C., for inviting us to bring our ten-year-old son to visit his set . . . and a double portion for the fine way he and the whole "Gun Master" troupe went out of their way to give a youngster the thrill of his life.

★
 Merritt B. Gerstad, A.S.C., draws a nice assignment at Warners', filming "Conflict."

★
 Nice to see Norbert Brodine, A.S.C., coming to roost at 20th-Fox, directing the photography of "Dancing Masters," with Laurel and Hardy.

★
 Monogram briefs: Marcel Le Picard, A.S.C., finishes "Outlaws of Stampede Pass," while Jackson Rose, A.S.C., starts "I Was a Criminal."

★
 And Ira ("Joe") Morgan, A.S.C., is busy making "Tiger Fangs" for PRC.

★
 At Paramount, Charles Lang, A.S.C., starts "Standing Room Only;" Victor Milner, A.S.C., gets rolling on De Mille's "The Story of Dr. Wassell;" and Theo-

(Continued on Page 268)

PHOTOGRAPHY OF THE MONTH

CRASH DIVE

20th Century-Fox Production (Technicolor).

Director of Photography: Leon Shamroy, A.S.C.

The first few reels of this picture are Technicolored in adequate but thoroughly routine fashion. But thereafter—from the time the submarine first submerges and the dramatic effect-lightings begin—one can see why Leon Shamroy, A.S.C., was the first "production" cinematographer to capture an Academy Color Award single-handed. Without the visual drama his camera and lightings—especially the undersea ones making vivid dramatic use of projected color—give to the production, "Crash Dive" would probably be considered pretty banal entertainment. But because of what Shamroy's artistry does in creating emotional responses, not only in the heavily dramatic moments, but in the love-scenes (particularly some of the night-effects in the car and outside the girls' school), the picture takes on a dramatic stature it would not otherwise have enjoyed.

Some of the special-effects work—notably the explosions in the Nazi U-boat base—is excellent; but much of the rest is decidedly mediocre. The process backgrounds, especially, we considered poor. In many of them was noticeable a pronounced "hot spot" which with today's technique shouldn't be there. In others, the background plates were unduly grainy, and looked as though they had either been photographed in very indifferent monopack, or unnecessarily printed down. But for all that, "Crash Dive" is worth seeing if you want to see what a fine cinematographer can do to make—in the dramatic sense—a picture.

BACKGROUND TO DANGER

Warner Bros. Production.

Director of Photography: Tony Gaudio, A.S.C.

Special-effects by Warren Lynch, A.S.C., and Willard Van Enger, A.S.C.

This mystery-melodrama takes rank very close indeed to "Casablanca" as one of the season's most spectacularly pictorial jobs of black-and-white cinematography. Laid against a rather similar background, giving ample opportunity for pictorial effect-lightings, "Background to Danger" suffers, in our opinion, from direction inclined too much toward action and too little toward cooperation with the cameraman, and from sets less photogenic than those of its predecessor.

But within these limitations, director of photography Tony Gaudio, A.S.C., has done a magnificent job. Where conditions permit, his pictorial compositions are delightful, and his effect-lightings something that make you want to see the picture again. His treatment of his

players is, as usual, first-rate, regardless of the handicaps we feel he must sometimes have been working under.

The special-effects work by Warren Lynch, A.S.C., and Willard Van Enger, A.S.C., is another outstanding part of the production. A great deal of it is wholly unrecognizable as special-effects camerawork, and all of it is handled in an unusually capable manner. We can't help wishing, though, that a bit of optical printing had been done on one of the railroad scenes to smudge out a name painted boldly across an engine drawing a train out of a station, and which made it painfully obvious that the scene had been shot at Victoria Station, London, rather than in Ankara!

CONEY ISLAND

20th Century-Fox Production (Technicolor).

Director of Photography: Ernest Palmer, A.S.C.

Here's another of those delightfully-Technicolored 20th Century-Fox musicals. And, with the exception of the first couple of reels where, at least in the print we saw, the contrast seemed abnormally high, Ernest Palmer's camerawork makes the picture doubly a delight. The further the picture progresses, the more delightful become his camerawork and lightings. Art-directors Richard Day and Joseph Wright have, as usual, given him almost perfect sets to photograph, and the costuming completes a picture, which needs only the inspired camera-artistry of a man like Palmer to make a perfect gem of frothy Technicolor pictorialism. If by any chance you don't want to see "Coney Island" a second time to enjoy again its breezy entertainment and music (not to mention the excellently-Technicolored Betty Grable), you'll want to see it once more just for the pleasure of enjoying its photographic beauty and the almost flawless combination of color-design and camerawork.

BATAAN

Metro-Goldwyn-Mayer Production.

Director of Photography: Sidney Wagner, A.S.C.

In "Bataan," Sid Wagner, A.S.C., offers not only the finest photographic achievement from his camera in many a long moon, but what we'd like to predict as a strong candidate for Academy Award honors. You may or may not care for its theme of heavy war drama of an heroic rear-guard action on Bataan, but if you care at all for great cinematography, you'll want to see "Bataan" more than once.

Both story, action, and locale call for a very difficult combination of realism, effect-lighting and photographic mood treatment. Wagner provides this visual setting magnificently, in a way that enhances the dramatic values of the

production enormously. We might say that to our mind some of the extreme night-effect scenes should better have been printed down a bit to give a visually and dramatically better impression of nocturnal menace, though this may have been merely the result of high-intensity projection on a comparatively small screen. But "Bataan" is full of visual impressions which will constantly repeat themselves in your memory once you've seen the film. We won't say which they are, for tastes differ; but there are enough of them to suit every taste, and to make "Bataan" one of the year's most spectacular photographic achievements.

The special-effects, especially the miniatures, which we assume to be the uncredited work of Maximilian Fabian, A.S.C., are another notable part of the production, as is Bronislau Kaper's superb musical score, to our mind quite the best of the year.

THE KANSAN

Harry Sherman Production, United Artists' Release.

Director of Photography: Russell Harlan, A.S.C.

You can't dismiss this well-budgeted "Western" with the remark that it is a collection of Russell Harlan exteriors, and that Russ is "tops" in this type of camerawork. That's true enough, but in "The Kansan," Harlan has plenty of interiors which he handles so excellently as to disprove for all time any thought that he is strictly a "Western" specialist. This reviewer is admittedly partial to smoothly-photographed exteriors (which, incidentally, Russ has provided in so far as fluctuating weather conditions on location permitted), but some of his favorite scenes were among the interiors, especially some of the effect-lighted scenes in the saloon.

Harlan's treatment of the players was exceptional, too, especially in the case of Richard Dix, who, despite all the years he has spent in pictures, Harlan's camera makes an actually believable romantic lead, though his appearance would have been still better with a slightly thinner application of the make-up artist's cosmetic retouching. We'd like, by the way, to see some producer give Victor Jory a part in which a cameraman could give him extreme dramatic lightings—something, perhaps, like those Pev Marley, A.S.C., used on Charles Laughton in "Les Misérables" . . . anyway, some which would take better photo-dramatic advantage of his mobile features than we've ever seen done.

DIXIE

Paramount Production (Technicolor).

Director of Photography: Lt. William C. Mellor, A.S.C.

This production—the last one Billy

(Continued on Page 268)



16mm. Movies For Our Soldiers

By LA NELLE FOSHOLDT

Long Beach Cinema Club

WE'VE bounced around in everything from an Army Jeep to a two-ton searchlight truck since we started showing movies to the Army Camps—and we love it. If you want to have the time of your life and be doing something the boys in the service really appreciate, start showing them movies, as we are doing.

A few months ago, when civilians were being urged to help entertain the soldiers, the Long Beach Cinema Club volunteered their services through the Recreation Division of the Long Beach Council of Defense, which is the coordinating agency for military and civilian recreation efforts in this area. Midge Caldwell was appointed chairman of a volunteer group to show 16mm. films as entertainment to the boys in camps stationed near us.

The first night we went out, we wondered just what type of films the boys would enjoy most, so we took along an assortment to find out their reactions. They sent an Army truck for us and we were soon rambling along feeling rather proud as we noticed the envious looks from pedestrians on the street. It took us about twenty-five minutes to get there, and going over a few rough places we

* The Long Beach Cinema Club was one of the first American amateur movie groups to volunteer to put its members and projectors to use in entertaining servicemen, and with the project under the guidance of Vice-President Mildred Caldwell, it is well in the lead as one of the most active in this worthwhile work, though other clubs, including the Syracuse Movie Makers' Association, the Metropolitan Motion Picture Club of New York, and others, including the Australian Amateur Cine Society of Sydney, Australia, have also gone actively to work bringing film entertainment to servicemen. We hope that this account of the Long Beach group's activities will inspire other clubs and individuals to follow along the same path.—The Editor.

wondered what condition our fellow projectionist would be in, for he was riding in the back with the equipment—and really bouncing around.

We arrived at the Mess Hall in time to see the cook slicing thick steaks, bacon and pork chops. For a minute we feasted our eyes and wished we were in the Army as the meat shortage was very bad at that time. While we set up the screen near the officers' entrance, the boys came in the back door by groups anxiously asking, "You aren't going to show us training films are you?" We gave them a list of the pictures we had and they began to pick them out in the order they wanted to see them.

They selected a 400-ft. sound comedy first, "Run Sheep Run," then a silent amateur picture, "Father's Time," by Ray Fosholdt, a club production, "Fire from the Skies," followed by two fast-moving professional shorts, "Here Comes the Circus" and "Ice Follies." The boys enjoyed the pictures so much we decided to line up members of our group to make a trip each Friday evening.

The following week, we found out they were very much interested in the latest sound newsreels. We had hesitated about taking any of these films along thinking that with war continually on their minds they would enjoy films on other subjects. That evening, the show consisted of "Coral Sea," a newsreel in sound, and two highly entertaining sport sound pictures, "Ride 'em Cowboy," and "Sport Spellbinders." Clarence Aldrich's amateur production "Ranch Romance" and "Bathing Beauty Parade," finished up the evening. The Bathing Beauty Parade really "went over" with whistling, clap-



Above: Members of the Long Beach Cinema Club put on a 16mm. show for soldiers at an isolated gun-battery, with the mess-hall for a theatre. Below: making a 16mm. sound-film (note blimped Cine-Special and Auricon) of a show put on by soldiers at another battery. Photos by Clifford Lothrop.

ping of hands and stamping of feet to give emphasis to their favorites. They were elated to learn the Parade was staged each year and their hopes really fell when we said it had been discontinued "for the duration." We went out in one of their largest trucks which had running-boards a good ways from the ground. When it came time to go home, Midge and I hesitated a moment trying to decide the best way to reach that high running-board gracefully with an audience looking on. They suddenly decided to send us back in a reconnaissance car which was much easier to get into! We stopped in our tracks as a voice boomed through the darkness, "Halt! Who goes there?" The Sergeant said, "Come on, that's just a sentry over on the landing field. He wants to make sure he's heard before he starts shooting!"

The next Friday night, Pat and Nora Rafferty went along with Midge. I called afterwards to see how everything went. A Sergeant picked them up in a Captain's jeep and going up-hill, Nora became doubtful if they would make it. The Sergeant soon assured her the jeep could go through sand, mud, or up the side of a building.

The pictures were shown in the bar-
(Continued on Page 274)



"PROPS" - - - THE SECRET OF REALLY NATURAL HOME MOVIES

By JAMES R. OSWALD

IN the midst of a very gala occasion, which was literally a movie-maker's paradise, I chanced to overhear someone make an impertinent comment concerning the many cine fans present at this affair. The remark implied that it was pointless and showed lack of judgment to ever "waste" valuable film on unfamiliar objects and places, seemingly of little interest, and on "unimportant" persons who were total strangers, even to the photographer. Since footage was being shot at a rapid rate with cameras grinding all around me, it became still more obvious that the implication was uncalled-for and without foundation. Likewise it became apparent that the person making it had little knowledge of, or interest in, photography, either still or motion picture. Little did this individual know or understand what really constitutes a good picture. Little did he realize that these insignificant objects, yes and human beings too, were merely *part* of the picture, and a very small part at that. And that they were actually nothing more than "accessories," carefully chosen by the cameraman, to make a worthwhile scene out of an ordinary, commonplace setting.

The advanced amateur knows only too well the tendency people have to "freeze up" and become stiff the moment the cine camera is pointed their way. Folks, who might otherwise be

the life of the party, immediately become self-conscious when requested to act in a movie scene. It's indeed surprising how they suddenly can't find a thing to do while in front of the buzzing camera. Such scenes usually create quite a laugh from future audiences, but they don't show the subject as he or she really is, and they certainly should not be classed as *good* movies.

Everyone knows the value of a natural, seemingly unposed scene of a person as he really is in everyday life. People also have the ability to recognize good composition when they see it, whether they can define the word or not. How, then, can we attain this naturalness so desirable both in human subjects and in material subjects, such as backgrounds, etc.? The answer is quite simple. Every little detail within the camera field should be closely watched. These minor incidentals, some placed in the hands of the actors, others merely a part of the picture, will dress up the scene in general, making the result more attractive. The minor incidentals which I refer to as accessories, are professionally known as "photographic props."

Props are little more than common, everyday objects which are included in the picture area to enhance its value. If properly used they may not even be noticed by the casual observer, but their absence would have a decided weaken-

Above, left: Note naturalness given this scene by tea-set "props" which give the actors something to do. Right, top: Without props, the girl is still and self-conscious; beneath, given a letter to write, she relaxes and is natural. Middle: A simple drink of "coke" makes this scene more natural, though bottle in foreground should be removed, as it distracts attention from main action. Bottom: A \$1 Venetian blind on a bare wall, plus a vase on a stand, make this shot more natural. A darker vase would be better, however, as it wouldn't stand out so prominently. Photos above by James R. Oswald; at left, by Wm. Stull, A.S.C.

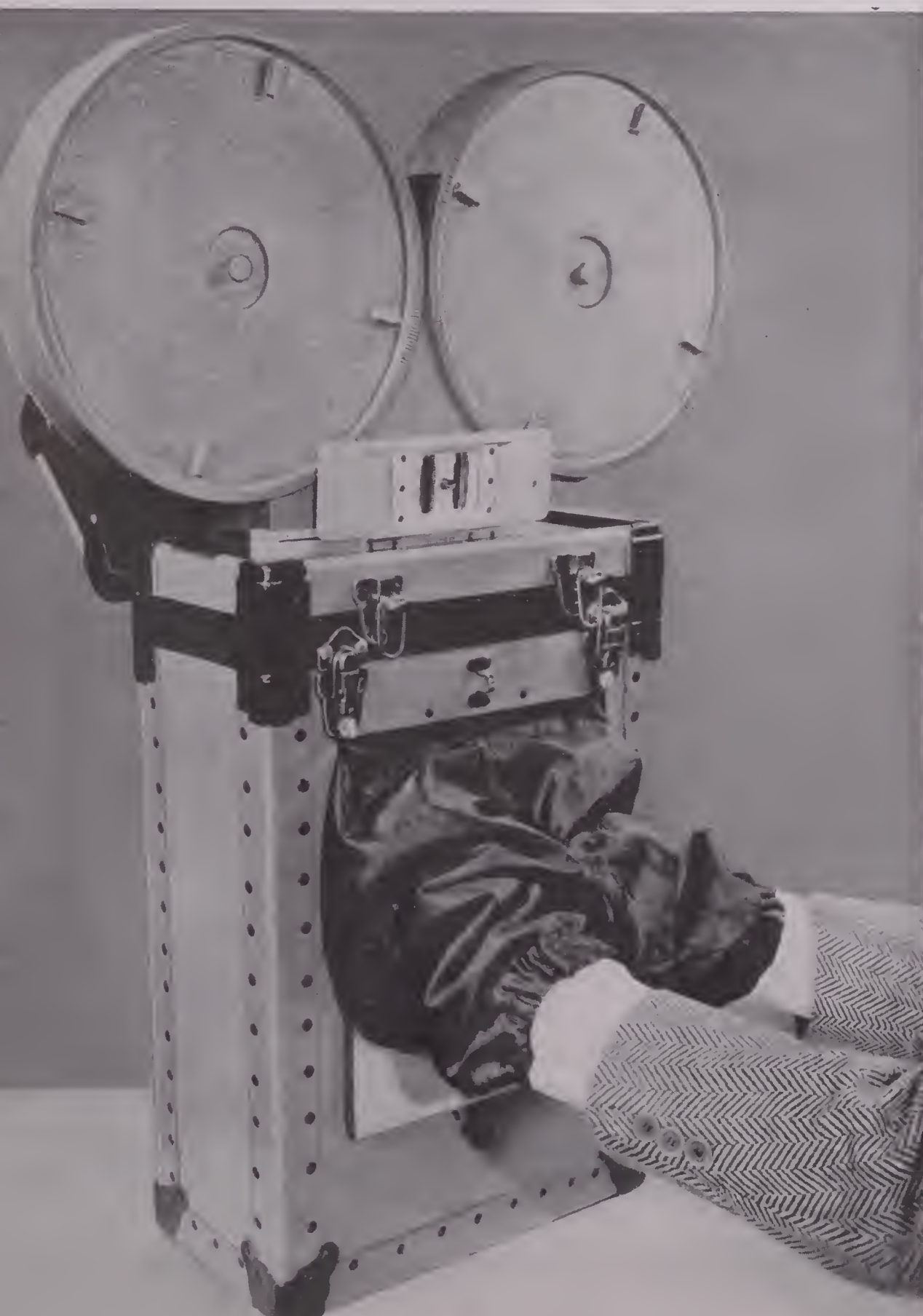
ing effect, noticeable to anyone. On the other hand, if they are not used to best advantage, the resulting picture may be worse than one had they been omitted entirely. A little common-sense before shooting will do much toward the skillful, harmonious arrangement of seemingly insignificant details. Any time spent in preparation of this sort

(Continued on Page 273)

CAMERA EQUIPMENT COMPANY A

"PROFESSIONAL JUNIOR"

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The New Removable Head "

★ The new removable head features the "Professional Junior"* Tripod. It is not a friction type head from the tripod legs base but a fastening nut. The tripod head can then be used as an adaptor for low setups.

The friction type head gives super-secure locking and 80° tilt. A generous sized pin provides long service. "Spread-leg" design affords unlimited adjustments. A "T" level is built into the top plate. Can be set for 16mm E.K. Cine Special, with 16mm B & H Eyemo (with motor), and with other 16mm heads. Head is unconditionally guaranteed 5 years. "Professional Junior"* Tripod With Removable Head can be sent upon request.

Field Development Kit

★ The kit serves as a portable darkroom for developing motion picture film in the field or on location. Holds 100 ft. and 1000 ft. Mitchell, Bell & Howell film. Adaptor is available for Cineflex magazines. Includes three special size thermos bottles. Complete descriptive data will be sent upon request.

"Professional Junior"* Tripods, Development Kit, Gauges made by Camera Equipment Company, Bases, Signal Corps, Office of Strategic Services, also by many leading Newsreel companies and producers.

* Patent No. 2318910.



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... out alignment gauge. The tripod
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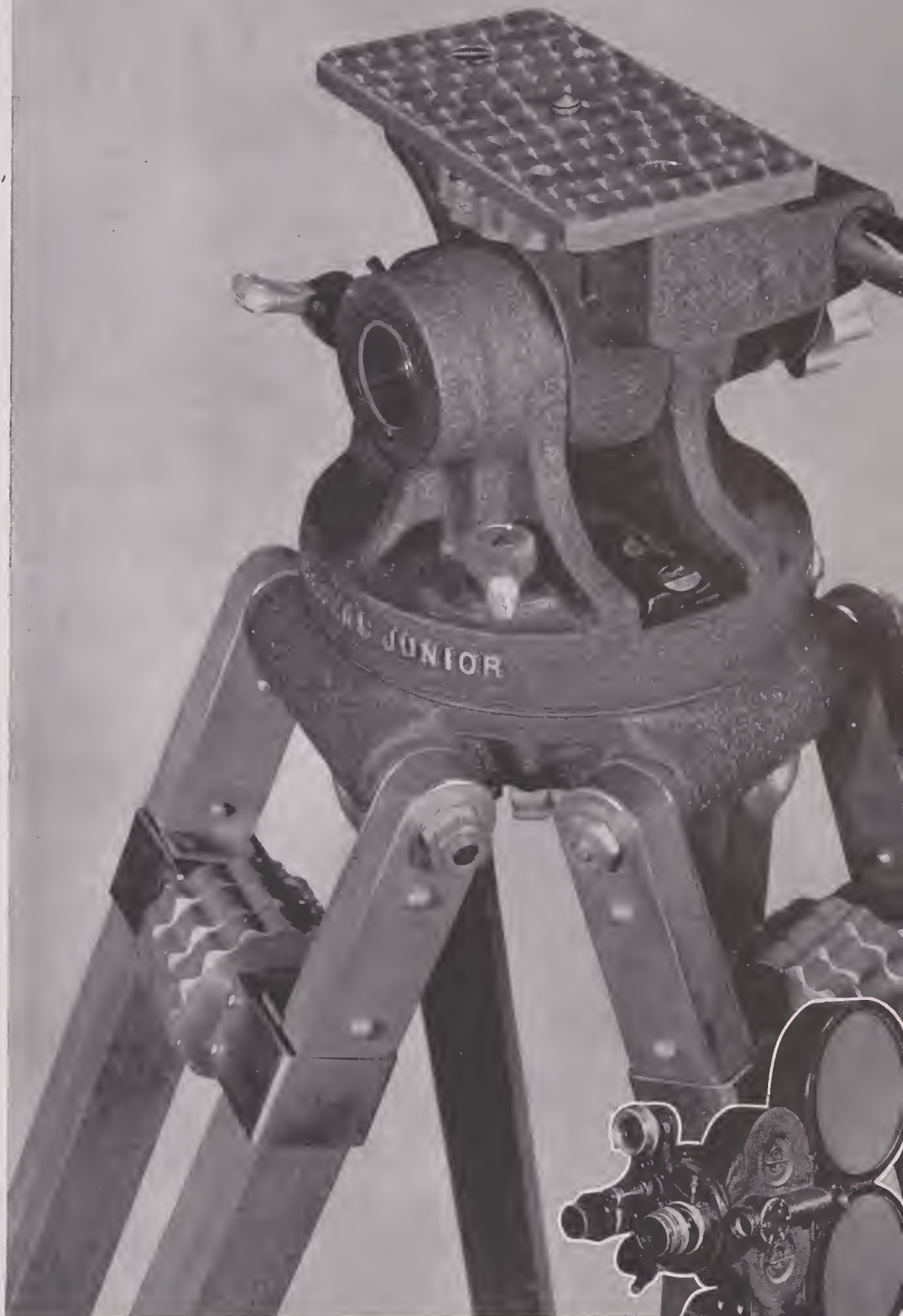
oping Kit

... or developing hand tests of 35mm
... n. The kit is equipped to take 400
... and Wall magazines. A special
... s. The developing kit is furnished
... developer, hypo and water. More
... n request.

... Kits, "Hi-Hats" and Shiftover Alignment
... are used by the U. S. Navy, Army Air
... services and other Government Agencies—
... es and 16mm and 35 mm motion picture

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EQUIPMENT CO.
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"Hi-Hat" and Shiftover Alignment Gauge

★ Illustrated is the B & H Eyemo camera mounted on the Shiftover Alignment Gauge and "Hi-Hat" low-base adaptor. The "Hi-Hat" low-base adaptor takes the "Professional Junior"* tripod head for setups where the tripod legs cannot be used. The Shiftover device (designed by Camera Equipment Co. and patent applied for), the the finest, lightest and most efficient available for parallax correction for the Eyemo Spider Turret prismatic focusing type camera. The male of the Shiftover attaches to the camera base permanently and permits using the regular camera handle if desired. Further data about the "Hi-Hat" and Shiftover will be sent upon request.





A familiar—and instructive—mistake: The long-shot was filmed unfiltered, while the filter used on the close-up to darken the sky made the red dress several shades lighter, and "washed out" the face-tones.

Do Your Mistakes Teach You What Not To Do-?

By PHIL TANNURA, A. S. C.

There's a story told about a prize-fighter who once walked squarely into Joe Louis' Sunday punch . . . and when, considerably later, the birdies stopped singing, remarked philosophically, "Well, at least that taught me what *not* to do!"

This may seem like a rather negative way of accumulating knowledge, but it is undeniably effective. Besides, there are always two aspects of learning how to do anything: what *to* do, and what *not* to do. Of the two, I think the "nots" are often the more important, and the harder to learn, probably because they're mistakes most of us want to bury in quick oblivion. But if we dig them out and study them they can often be every bit as instructive as our most cherished successes.

Take those mistakes we've all made in moviemaking, for example. Whether we shoot for pay or pleasure, we don't, as a rule, care to screen past mistakes very often. But now that film is scarce, every one of them can—or should—carry a lesson of something we want to avoid in the future, to avoid wasting precious film. So before you do any more shooting, why not dig out all of your "horrible examples" you can lay hands on, and spend a quiet evening with your projector, studying and analyzing the things you *shouldn't* do?

And while you're digging that film out, let's go over a few of the more familiar things you shouldn't have done (but did) and suggest a few simple remedies for them.

First on almost anybody's list of home movie "should nots" is over-fast panning. Most experienced amateurs will probably

chime in at this point that they learned all about that long ago—and learned that the simplest and safest cure was simply not to pan. That's all right as far as it goes: but even if (unlike the unlucky professional) you don't have a pan-mad director working with you and insisting on moving the camera all over the room or landscape, you'll still find occasions when you've just got to pan.

In a case like that, your first remedy is to set the tension on your tripod's pan-head tight enough so it offers enough resistance to hold you down to a decently slow pan . . . and then remember to pan even slower than that. But this remedy isn't very much help when, through necessity or very questionable choice, you may have to make the shot with the camera hand-held. In that case, you'll find it a good idea to speed the camera up enough so it will automatically slow the pan for you. If you're shooting for silent, 16-frame-per-second projection, speed the camera up to 24-frame speed; if you're shooting for 24-frame sound-speed projection, whack it up to 32 frames per second. Sure—that uses more film: but no more than you'd use if you panned at the properly slow rate. And it will slow and smooth your pan like magic.

Another thing to remember is to have a legitimate reason behind your pan. As a rule, there are only two real reasons for panning. First, to follow some moving object. Second, to show some panorama which simply cannot be shown, or at least cannot be shown effectively, in a single, stationary-camera shot or a series of such shots.

In the first instance, you simply follow your moving object as smoothly as you can, keeping it constantly centered in your finder so it won't weave back and forth on the screen.

In the second instance, you'd better remember that a pan should be like a crescendo of interest, leading from something less interesting to something else more interesting. There's been a lot of argument—verbal and printed—in amateur circles as to whether horizontal pans should properly be made from right to left, or from left to right, and if vertical pans should ever be made descending. This matter of interest should form the conclusive answer to all these arguments: just begin with the least interesting part of your scene, and pan to the part that is more interesting — and direction be hanged! Oh yes, be sure, too, that you both begin and end on a good composition.

Just review the panning in some of your less satisfactory pictures and see how much it would be improved by following these few simple hints!

Missed exposure is another "should not" you can find a cure for it if you re-analyze your old films. If, like nine out of ten of us today, you use some sort of a meter, you'll probably discover when you study your incorrectly-exposed scenes, that the reason you went wrong on them was either that your exposure-meter didn't "see" the same area your camera did, or that it took simply an overall reading on the whole scene, while you were really interested in some portion of the scene-area which called for—but didn't get—special exposure treatment.

In both cases the fault most probably was that you simply held up the meter, pointed in the general direction of the scene, and accepted what it said without further thought. Now in most exterior scenes, you're likely to include a good deal of sky, which reflects a lot of light and boosts your reading accordingly. But you're not interested so much in the sky as in the landscape, and probably the people in the scene. So tilt the meter down about 30°, so it won't "see" so much of the sky, and you'll get a more accurate reading. If in addition you make a little shade over the meter with your hands—especially in a back-light—and shield the meter still more from that "hot" area, you'll get still better results.

Or your subject may require special exposure treatment—maybe it's a person or object in the shade against a strongly-illuminated background, or out in the sun in front of a large, shady foreground, or a dark-clad person against a light background, or vice-versa. In that case, while your overall exposure may be strictly on the beam, the exposure for

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Incident-Light Readings

With

Your Exposure-Meter

By WILLIAM STULL, A.S.C.

TAKING exposure-meter readings by incident, rather than reflected, light has become the universal practice among studio cinematographers. Regardless of what type of meter they may use, all of them—especially on interior scenes—have found that they get more accurate results by pointing their meter's "eye" at the light illuminating the subject than by pointing it at the subject itself. Virtually all of the articles on exposure-metering from the professional cinematographer's viewpoint which have appeared in *THE AMERICAN CINEMATOGRAPHER* during the past several years have dealt almost exclusively with incident-light metering.

Inevitably, the result has been an increasing number of letters from amateurs and 16mm. professionals alike, all asking the same basic question: "Since incident-light meters like the expensively professional Norwood and the British-made Smethurst-Avo are obviously 'out' for the duration, how can an ordinary civilian like me protect my exposures by using the incident-light method? Is it at all possible to do it with my ——— (you fill in the name!) meter?"

The answer is yes—and almost always, regardless of the make of meter you may be using, so long as it is of the photoelectric type. The results you'll get may not be as perfect as would be the case with a meter designed solely

for this type of reading, but once you've gotten the hang of using your meter for incident-light readings, you're almost certain to get results you'll like better than those you ordinarily get with reflected-light readings—especially under difficult conditions.

The easiest of the commonly-used meters to adapt to the incident-light method is the new-type General Electric. This meter, as most G-E users know, has a removable hood and a three-range calculator dial. If you'll look at that calculator, you'll notice three pointers on the lower part of the outer dial. The one at the left is marked "cover closed"; the one in the middle is marked "cover open." And the third—which you've probably more or less ignored, is labeled "dim light, hood off."

When you take the hood off this meter and make your exposure-calculations with this right-hand pointer, the G-E meter is intended to be used as an incident-light meter. Using it this way, you simply place the meter in subject-position (preferably close to the face of your principal subject), point the photocell toward the camera, and take your reading. As the General Electric engineers somewhat conservatively point out in their *Exposure Meter Manual*, "This incident-light method of measuring exposure is highly dependable."

But this is only for the generally lower illumination-levels you encounter



Above, left, Rudy Maté, A.S.C., takes an incident-light reading with his G-E meter; note reducing matte in meter. Right, this meter can be used for incident-light readings indoors by removing hood (as below) and using "Dim Light" pointer (top of dial, above) in making calculations. For incident-light readings with any meter, simply place a bond-paper diffuser with 10% transmission over the photocell, and use calculator as usual.

in filming interiors. Using the same technique on exteriors, and pointing the meter at the camera on an average sunny day when you're shooting in more or less of a flat front-light, you'd probably shoot the needle up to the top of the scale and then (figuratively, at least) wrap it a couple of times around the peg. And naturally with older G-E models, or with meters of other makes,

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Strobo-Sync Sound Quiz

By S. JEPSON.

Secretary Amateur Cine Society of India

DUE to the increasing interest in the simple, but effective method of putting sound to silent 16mm. and 8mm. films by the stroboscopically-synchronized disc method, we have had a number of inquiries on various phases of the subject. Most of these are excellently covered in the following "Strobo-Sync Sound Quiz" by Mr. S. Jepson, Secretary of the Amateur Cine Society of India. (THE EDITOR.)

Q: If the film breaks what should I do?

A.: Try and stop both projector and phonograph together, and on no account lift the needle; otherwise you might find it difficult to find the place again. After splicing or sticking the film together temporarily with Scotch tape, start them both together. If the phonograph has gone on for quarter of a minute or so, start it for a few seconds to get the commentary and then stop it with needle in position, then start the projector, and when the picture arrives at the commentary place where the needle is, start the phonograph.

Q: If the record gets out of synchronization, what should I do?

A: There are several possibilities, but make sure first whether the sound is in front of the picture or vice versa, otherwise you will make the matter worse.

If the sound has got in front of the picture you can speed up projector until the film has overtaken the record and then come back to the proper speed by watching the strobo-disc.

Or if you don't want to do this, you can stop the record (turning down the volume before you do it and when you restart so that there is no noise) by pressing the electric switch (never touch the needle), and as soon as the picture has overtaken the last few words and the gap is closed, restart the record. It is not desirable to increase the speed of the record in order to overtake the picture because this will give a high pitch tone to the voice, but there is no objection to slowing down the record very slightly in order to bring the commentary back to the picture. A simple and effective way of doing this is by applying a handkerchief loosely to the edge of the turntable—the advantage is that when the handkerchief is removed, the speed goes back to what it was formerly, *i.e.*, the correct speed. If you set the speed correctly according to the stroboscopic disc, there should be no need to vary it much and the simplest way is to alter the speed of the projector.

Q: Is it necessary to have two record-playing turntables?

A: No, though the effect is better as there is no break. With one turntable you can allow an interval of 15

secs. during which the phonograph can be stopped, record changed, needle put on the first groove and the record restarted as soon as the second sync mark appears. This means there is 15 secs. silence whilst changing the record.

Q: If the voice is too high, what should I do?

A: This means that the phonograph speed is too fast. About 76 to 78 r.p.m. is the best speed. If the voice is too low, it means the speed is too slow. In case of doubt you can check a turntable's revolutions by actually counting the revolutions with a stop-watch.

Q: Is it necessary to project at 16 frames per second?

A: No, what is necessary is that the ratio originally established between projector (or camera) and turntable in the recording must be maintained in projecting. You can make your record with projector and turntable operating at any speed, but you must always maintain those relative speeds thereafter.

Q: Why is the playing time put on the record?

A: As a guide so that you know how long it will last, also so that after some months you can check it and see if the grooves have become polished, when it might play faster. In this case, you will have to fit a disc containing more bars than the original one, when the disc appears to revolve to the right, this means a disc of more bars is required. Fifteen secs. clockwise revolution in one complete circle means a difference of two bars, and 30 secs., one bar.

Q: How can I remember easily how to synchronize the disc?

A: If the disc is apparently moving clockwise you must increase the speed and vice versa. So remember the formula "down to the right; up to the left."

Q: Are the records breakable?

A: No. But the acetate surfaces are soft, and very susceptible to fingerprints. *Never* touch the face of the disc, either before or after recording.

Q: What needles should I use?

A: This is important, for if you use hard needles or the wrong kind, or old ones which are worn (you can examine them under a glass to see how they are worn), records will wear out. "Transcription needles," which are soft, are the best and give the best tone, though trailer needles bent at an angle are also good. Wooden fibre needles are good but do not last, and if they become blunt they will give an echo. They should be resharpened with a knife or patent sharpener. The Indian Babul bush thorn of the right shape makes a good needle, as do cactus spines, but will not give as much volume as the metal needle.

Q: What are the different methods of synchronization?

A: The record has on it a stroboscopic disc, and if the record is started when the white circle sync-mark flashes on the screen, then sound and picture are synchronized. If it gets "out of sync,"

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AMONG THE MOVIE CLUBS

Post-War Cameras

Though neck-deep in war production, the makers of America's home movie cameras are none the less planning the improvements they will incorporate in their post-war designs. In this, they need the help of the users of substandard cine equipment. Recently J. Harold Booth, Vice-President of Bell & Howell, sent a letter to most of America's amateur movie clubs, asking what they wanted in post-war cinemachinery. For the benefit of clubs this letter may not have reached, and of individual cine-filmers, whose opinions may be no less valuable, we reprint some of the highlights of Mr. Booth's letter:

"What type of lens equipment do you consider ideal for home movie making? How long should the 'spring run' be, remembering that power for extra footage means extra weight? What 'gadgets' are really useful, as compared with gadgets that are actually used only infrequently, and simply complicate your movie making? Would you be interested in making sound-on-film movies in 16mm.? . . in

8mm.?"

"A few movie clubs have already had sessions with 'The Camera of the Future' as their topic. They report these sessions were outstanding. We suggest that at one of your early meetings you plan a similar program. Then send us a brief summary of the general ideas suggested by your members for the movie camera of tomorrow."

We at THE AMERICAN CINEMATOGRAPHER would also welcome suggestions from our readers along these lines, for we would like to set forth not only what we personally feel is possible in post-war camera design, but what our readers want. All of us, as practical users of substandard equipment, have our ideas of what should constitute the ideal home movie camera or projector. We have complained over the shortcomings of existing models. Now—while the manufacturers are laying plans for post-war designs—we at last have a chance to make our desires and opinions heard effectively. Let's make the most of it! THE EDITOR.

N. Y. Metro Elects

Following the balloting at the May meeting of the Metropolitan Motion Picture Club of New York, the following were announced elected as directors of the club for a three-year term: George A. Ward, Annette C. Decker, George Mesaros and Joseph J. Harley. At the May 25th Board Meeting, the new board elected the following officers for the coming season: President, Leo Heffernan; 1st Vice-President, Joseph J. Harley; 2nd Vice-Pres., Frank E. Gunnell; Secretary-Treasurer, Sidney Moritz. As Bob Coles, the club's perennial Secretary, has been called into the Armed Service, it was decided to combine the offices of Secretary and Treasurer "for duration plus six months," with the hope that military life may have hardened Bob for another long term of club office.

Scheduled for the June 10th meeting, which closes both the club's season and Joe Hollywood's term as program chairman, are the following: "Sun Valley," by Harry Groedel; "Winter Holiday" and "Manhattan," by George Serebrykoff; and "Mars," a fantasy-film made by Adventure Pictures, of Passaic.

FRANK E. GUNNELL.

4 Hits for L. A. Cinema

The June meeting of the Los Angeles Cinema Club was made memorable by the presentation of four of the most outstanding 16mm. films the club has ever screened. First was "Old Mexico," 16mm. Kodachrome by Russell B. Mullin. Sec-

ond was Fred Ells' Kodachrome remake of his classic "In the Beginning," accompanied by phonograph records. Third was "Ciné Whimsy," black-and-white sound-on-film, by Member Newell Tune and Robert Fels (See AMERICAN CINEMATOGRAPHER for May, P. 179.) The fourth was a surprise feature, sent by the Indianapolis Amateur Movie Club to William Stull, A.S.C., of THE AMERICAN CINEMATOGRAPHER, and brought to Los Angeles specially for the meeting by its director, Dr. (now Lieutenant Commander) J. W. Sovine, now serving with the Navy Medical Corps in San Diego. Titled "Amateuriana," and running 800 feet of 16mm. Kodachrome, this film proved to be an unusually clever satire on the making of club productions. At its conclusion a hearty vote of appreciation was extended to both the Indianapolis Amateur Movie Club and Dr. Sovine for going to so much trouble to make this showing possible.

ALICE CLAIRE HOFFMAN,
Secretary-Treasurer.

Minneapolis Nominates

The June 22nd meeting of the Minneapolis Cine Club turned political as the nominees for the club's 1943-44 offices were to fight it out at the polls. Nominated for President were Dr. Leonard Martin and Earl Ibberson; for 1st Vice-Pres., Bill Weber and Oscar Haertel; for 2nd Vice-Pres., Steve Boyles and Dr. Kenneth Miner; for Secretary, Al Anderson and Ralph Bowman; and for

Treasurer, Oscar Berglund and Charles Beery. For the two vacancies on the Board there were three nominees: Falconer Thomas, Rev. Henry Lewis, and Fred Grabow. Following this meeting, the club will take its usual vacation adjournment until next September.

ROME A. RIEBETH.

Varieties for Utah Cine Arts

The June meeting of the Utah Cine Arts Club (Salt Lake City) scheduled an unusually variegated program, including "Down Mexico Way," 16mm. Kodachrome by Mr. and Mrs. Vern Lunt; "Western Wild-life," 16mm. Kodachrome by Frank E. Gunnell of New York's Metropolitan Motion Picture Club; "Riding My Hobby," by G. Van Tussenbroek, and a demonstration of moviemaking by an expert.

VIRGINIA SMITH,
Secretary-Treasurer.

Ladies Win In Syracuse

It's no longer "the boys from Syracuse" with the Syracuse Movie Makers Association. During the nine years of the organization's life it has maintained a strictly bachelor existence—excluding women, not because we wanted to, but because there had been no demand from the fairer sex. However, due partly to an editorial remark in the club's new paper, "The Viewfinder," and partly to pressure from some members' wives, the by-law was amended and women amateur cinematographers are now given full and active membership in the club if they decide to join. Five at once did so, and the June 1 gathering was their first meeting. On the screen was a dual sneak preview of the club's finished production, "The Hollow Idol," in both its 16mm. and 8mm. versions. Following a general discussion, suggestions for changing the 8mm. copy so it would more closely tally with the 16mm. version were noted down, and it was also revealed (much to the chagrin of the 8mm.-ers) that the 16mm. boys had done a much superior job of editing and titling. An exchange film from the Philadelphia 8-16 club, showing the production of their journal, "Close-Ups," was shown, and inspired us (when we can get the film!) to try our hand at making a similar comedy about the production of our own club paper.

On June 29th, the club is holding an outing and picnic supper in one of the city parks, and three films from the library of THE AMERICAN CINEMATOGRAPHER—"Nite Life," "Red Cloud Lives Again," and "Garden Life"—will be shown. A summer of outdoor meetings in parks and on members' lawns is planned, as a substitute for the out-of-town outings and vacations of pre-gasoline-rationing days.

D. LISLE CONWAY,
President.

HOME MOVIE PREVIEW

AMATEURIANA

Scenario film, 800-ft. 16mm. Kodachrome. Filmed by the Indianapolis Amateur Movie Club.

Here's a picture that every movie club—and particularly those whose form of the hobby is making scenario productions—ought to screen. It is a delightful satire on the making of a club production, deftly directed by Dr. Joe W. Sovine and excellently Kodachromed (in the 16mm. version viewed) by Dr. William E. Gabe.

The story is very cleverly told, though it seemed to us that a few more close-ups and spoken titles could have been used in some sequences, and some improvement might be possible in the way these spoken titles were cut into the action scenes. Too few amateurs remember how this technique was used back in the days of silent professional films. Then, the best practice was to cut to a close shot, if not an actual close-up, of the player beginning to speak; then as soon as his mouth started moving, cut in the title, and thereafter cut back to the *same* action-scene as before, but just at the end of the actor's lip-movement. This made it absolutely clear who was speaking at all times—a very important consideration in silent pictures, and doubly so when using amateur actors.

Dr. Gabe's camerawork is generally excellent, though here and there one remembers a scene in which—probably for very good reasons—the background intruded somewhat on the more important foreground action. His handling of the interiors was uncommonly fine—especially the difficult task of lighting for a Kodachrome long-shot the very large room used for the club meeting scenes. In this, it may be that a scarcity of lighting units (not to mention bad moments with the fuse-box!) made his lighting a good deal more sketchy than some of Eastman's experts would probably recommend: but on the other hand, the result was an effect-lighting which would win the praise of any studio cinematographer, and which was vastly more realistic than any technically perfect, flat, overall lighting ever could be. The film we saw was a duplicate, made by Geo. W. Colburn's laboratory, and an excellent one throughout.

WONDER FILM

Documentary, 125 ft. 8mm. Kodachrome. Filmed by Joseph F. Hollywood.

Joseph Hollywood has an exceedingly clever technique of putting what most of us might term unpictorial, abstract ideas into visual form on the screen. In this case, it is the remarkable performance of 8mm. film. When you put down in cold type the facts that an 8mm. frame measures 4.8 x 3.5mm., or a total area of 16.80mm., and that when it is

projected onto a screen six feet wide, with an area of 2,430,000mm., the original 8mm. image is magnified 144,643 times, you begin to have an appreciation of what 8mm. can do. But when you see this pictorially illustrated for you, as Hollywood does it, you can really begin to appreciate the marvel modern photochemical and optical science have put into our hands.

As usual, Hollywood's photographic technique is excellent, especially in the effect-lighted scenes showing the projector apparently running, and in the others showing the picture apparently on the screen. His cutting and titling are also up to his customary standard, the latter enhanced considerably by the use of color. However, as he himself admits, the closing part of the picture does not quite seem to "jell". My suggestion for remedying this would be to show, after the shots of the 8mm. camera, a succession of breath-takingly beautiful Kodachrome scenes showing what 8mm. at its best can put on the screen, as well as, perhaps, a few "homey" shots of the typical home movies for which 8mm. is so extensively used. This, preceding the film's present ending (beginning with the silhouette shots of the projector running) should bring "Wonder Film" to a climax befitting its subject matter and medium.

PORTLAND, CITY OF ROSES

Travelogue, 150 ft. 8mm. Kodachrome. Filmed by William Peterson.

One of the hardest things to do is to make a home movie reel which really typifies your home town. Photographically, this little picture is excellent, especially if one makes allowance for the moist climate of the Pacific Northwest. But as a picture, it could stand a bit of improvement.

The first things for anyone who wants to make a picture of this type to do is to sit down and try and list—on paper—the various details which make *his* particular town different from others. And there's always something—even though you're so accustomed to it that you're likely to pass it by unnoticed. In Portland, of course, it's the roses and the celebrated Rose Festival. But that isn't in itself quite enough material upon which to hang a picture really representing your town.

In this reviewer's estimation, the sequences with which this picture opens fail to do this. They show Portland, indeed, but in aspects which tend too much to show features which are basically the same in *all* cities of that size, rather than those which set it apart from the others. Nearly all such cities have tall buildings and bustling streets. Most of them, save in dim-out areas, have spectacular displays of neon signs—very excellently photographed, these, by the

way, in this picture. Most cities have an abundance of neat, typically-American homes. But none of these details set Portland apart from any other city of its size.

This reviewer doesn't happen to know Portland, so it's up to cinefilmer Peterson to find the answer in detail. I noticed one such little detail, however, which was lost—in fact, deliberately panned away from—in too close attention to conventional shots of big buildings. This detail was one Mr. Peterson probably didn't notice, it was so commonplace to him, or, if he did, he considered it obtrusive. It was an electric-trolley-bus rolling down one of the main streets—and Portland is one of the few cities in America which uses these trackless trolleys. A complete sequence could be built up on this detail alone. Similar sequences could be built up on other similarly exclusive details, not only of scenery, but of family life and customs. And you'd end up with a real picture of Portland as it would appear to a visitor's eyes, seeking the unusual, and culminating, of course, in the excellent scenes of the Rose Festival minus, we hope, the short shot of the float with the Japanese children waving the rising sun flag!

CINE WHIMSY

Scenario, 800-ft. 16mm. black-and-white; post-recorded sound-on-film.

Filmed by Robert Fels and Newell Tune.

This is a clever picture of very nearly professional quality, based on the amusing idea of presenting literally some current slang expressions. Its chief faults are that it really needs a somewhat faster tempo in both cutting and action, and that it was photographed on black-and-white negative rather than on Kodachrome. The latter, of course, is wholly excusable in these days of film-shortages. The former could probably be remedied, to some extent, at least, through quicker re-cutting.

A remarkable feature of the picture is the excellence of the trick camerawork, and also how well the post-recorded dialog generally matches the lip-movements of the players. All told, while the film may not quite reach the mark at which its director aimed, it is none the less a very worthy short, and one which is, besides, thoroughly amusing.

CALIFORNIA WASHDAY

Scenario Home Movie, 100 ft. 8mm. Kodachrome.

Filmed by Dr. Joe Sovine.

Here's another amateur picture that deserves wide distribution. It is nothing that could not be photographed easily in any filmer's back-yard—just the story of a little girl's wash-day, and how she carefully launders her "Dumbo" doll. But between Dr. Sovine's excellent Kodachrome camerawork, which is almost perfect as to exposure, and excellently composed, and his keen sense of continuity, "California Washday" is an almost perfect example of what a real

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home movie could be—but seldom is. We've seldom seen a film which evidenced better continuity; here and there, perhaps, a slight rearrangement of scenes might be advisable—as, for example, a closer grouping of the various shots showing young Miss Sovine dunking her doll up and down in the tub—but in general, Dr. Sovine has turned out a picture which ought to be studied by most of the home filmers we know. The performance his young star turns in is also something that ought to rate an amateur Oscurette as well.

Photography of the Month

(Continued from Page 257)

Mellor photographed before entering the Army—is another example of Technicolor filmicals at their picturesque best. In this case, the locale is the antebellum South, and the birth of the minstrel type of entertainment, backgrounded against Dan Emmett's delightful songs. Cinematographer Mellor's contribution is perhaps his best job of color camerawork yet, and one which makes "Dixie" well worth the price of a repeat admission.

The uncredited special-effects work by Gordon Jennings, A.S.C., and the transparency-projection process work by Farciot Edouart, A.S.C., and his capable staff, are further highlights. Some of Edouart's process-shots—especially on the river-boat—are unusually fine examples of the intricate type of perspective-matching between set and background at which he so greatly excels.

A.S.C. On Parade

(Continued from Page 256)

dor Sparkuhl, A.S.C., is assigned to "Ministry of Fear." Thanks, too, to Charlie Lang, Karl Struss and Camera Chief C. Roy Hunter for their courtesy to our friend, Lt.-Cmdr. Joe Sovine, of the Navy Medical Corps, when we took him over there to see how movies (other than 8mm.) are made.

★

We spent a pleasant fifteen minutes the other day when we dropped in to say "Hello" to William Sickner, A.S.C., busily putting another Universal serial on film. Hope we didn't cramp his style . . . he only got two set-ups shot in that time!

★

Add pleasant surprises: the other day we walked on Johnny Fulton's big process stage out at Universal, and who should we see working there but Eddie Linden, A.S.C., and Harry Zech, A.S.C. And was that spare cigar of Harry's a godsend when we found ourself fresh out of cigarettes with four or five errands yet to do on the lot!

★

Did you know that Major Ted Tetzlaff, A.S.C., has a double rating in the Army Air Force—? He's not only a cinematographer (everybody knows that!) but holds a Service Pilot's rating, as well.

Hollywood's War Plants

(Continued from Page 252)

on a few minutes' notice, and the wildly inconceivable to be accomplished overnight, have given Hollywood's cinetechnicians the ideal training for wartime production. The normal, peace-time work of their daily lives has convinced them that there are no such words as 'impossible' or 'it can't be done' to a fellow who, like these men, combines sound technical engineering with the fertile ingenuity of the motion picture industry. Like the man in Edgar Guest's poem, the unsung engineers, technicians and workmen in the many big and little plants which have so long served the film industry are rolling up their sleeves and accomplishing the impossible." END.

Lin Dunn

(Continued from Page 254)

serts, may be grouped together in a single, centralized organization.

In any event, optical printing can do a great deal to simplify and supplement the work of all these other specialists by taking their individual contributions to a trick-shot and combining them into a final composite scene. For example, the background plate for a back-projection process shot may call for a scene which combines full-scale "live action" with a miniature, and topped by a matte-shot. The optical printer can take all these various separately-photographed components and blend them together to produce a wholly natural-looking scene which is then used as the projected background for the process-shot. Then the optical printer may again come into play to begin or end the composite process-shot by blending it into another scene by means of optically-produced wipes, fades or dissolves.

In addition, the optical printer can do a very great deal to improve conventional "production" scenes in ways the director, producer or cutter may not think possible. For example, dolly-shots can often be made into stationary-camera shots, and stationary shots into dolly-shots by skilled optical printing. Often if the set crew dollied too close in, or not close enough, or at the wrong level, this can be corrected in the printer. And these optically-made dollies, if done perfectly, cannot be distinguished, even by experts, from those made actually on the set.

Dunn has used his printer to "doctor up" many a scene which would otherwise have had to be retaken. One of this writer's favorites was when, some years ago, the rushes disclosed that in an oil-field location scene a truck, bearing all too prominently the name of a well-known oil company on its side drove nonchalantly through the scene. Working carefully, frame by frame, Dunn completely obscured the objectionable lettering, and saved the day. On another occasion a crashing airplane was supposed to come to rest, upside down,

and the injured pilot drop out and crawl away just as the wreck enveloped itself in menacing flames. Everything went off perfectly on the set—except that the flames failed to start until the actor was well out of the scene. Dunn's printer obligingly moved the flames ahead, so that in the final print they seemed to burst out at precisely the most suspenseful moment—and a retake was neatly avoided.

Dunn's first really spectacular achievement in optical printing was in "Flying Down to Rio" in which, some years ago, RKO introduced not only Fred Astaire but the striking trick effects an optical printer could produce for transitions. The picture included a dazzling display of wipes, melts, and other transitions, carefully synchronized to music and action, and never since excelled, though for some years every studio tried to do so before settling down to accept such optical transitions as a complement to, rather than a substitute for such conventional scene-changes as fades and dissolves, which latter, of course, are now made optically too.

But by no means all optical printer work is of so obvious a "trick" nature. "Citizen Kane," for instance," Lin remarks, "was one of my recent pictures which employed optical tricks to the limit. The picture was about 50% optically duped, some reels consisting of 80% to 90% of optically-printed footage. Many normal-looking scenes were optical composites of units photographed separately, and which could have been handled completely by straightforward methods. One such scene was a pan down from a statue of a man to live action at the base of the statue. The statue itself was a miniature, and both it and the full-scale action at its base were photographed as separate, stationary shots. The two separate scene-components were joined by a traveling split-screen and the vertical panning movement was also put in on the optical printer.

"Another scene of the same type was the shot of the camera rising from the stage of the opera-house to show two men in the flies, far above, showing their disgust at an indifferent performance going on below. This was photographed in three sections. First, the camera on an elevator, rising from a full-scale stage; second, a miniature of continued upward movement through ropes, curtain and sets, and finally another elevator-shot, full-scale, up to the two men in the flies.

"This differed from the previous example in that the upward camera motion was originally photographed, of course with the camera-speeds of the miniature and full-scale components carefully matched. But the scenes had to be fitted together in the optical printer, using a synchronized, soft-edged downward wipe-off, blending on and aligning certain matched parts of the three sets. The final composite scene created a feeling of long travel from the stage to vast heights.

"Both of these illustrations are definite

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examples of the way optical printing can create a scene which has no appearance of being a trick-shot, because to most people—even studio technicians—there is no obvious reason for it to be made by other than straightforward 'production' methods. But by making these scenes as outlined, certain production difficulties (usually appearing unexpectedly) were overcome, with a sizable saving to the studio—but possibly a few headaches to the optical man!

"There are certain essential fundamentals to successful optical printing which cannot be overlooked. One is the design of the printer: it must be practical from the operator's viewpoint. Too often one finds mechanically excellent machines which are unnecessarily awkward or slow to operate. Such machines were probably designed by mechanical engineers who took little or no time to consult—much less collaborate—with the optical printer cinematographer. Yet even so simple a detail as high-speed rewind may save as much as an hour or so of working time in a single day's routine operations.

"Equally important is thorough-going cooperation between the optical man and the laboratory. Even the simplest of optical work involves the making of dupe negatives, and some of the more complicated shots may mean making of double and triple dupes. If the laboratory operations are not perfectly consistent, and perfectly coordinated with the requirements of the optical man, the results cannot be perfect. Some years

ago I developed a special strip to aid in this laboratory control. It is now used throughout all our trick laboratory work, and has been adopted at the Consolidated Film Industries' Laboratory as one of their checks on density, contrast, definition, flare, fluctuation and other factors in both negative and positive processing, especially where trick work is concerned. Fortunately for me, the cooperation I've received from Vernon Walker, A.S.C., head of the RKO Camera Effects Department, from my assistants and other co-workers in both this and the editing department, and from the Consolidated Film Lab. has made my work most interesting and enjoyable."

In his spare time, Dunn is designing special optical printers for the U. S. Navy, Signal Corps and Air Force, which are being built by the Acme Tool and Mfg. Corp. in Burbank. His hobbies are his three small girls, music, and 16mm. cinematography. (He is an active member of the Los Angeles Cinema Club.) He has recently completed the first truly professional (as judged by major studio standards) 16mm-to-16mm. optical printer.

"The big problem in this," he says, "is to find the time I would like to spend in 16mm. experimentation, for I feel that after the war 16mm. is certain to take the place of 35mm. in practically all professional uses except major studio production—and possibly in some types of studio work, at that. The time when we could regard 16mm. as a mere hobbyist's toy is definitely over; the big job it is

doing in military and industrial training films is evidence enough of that. The greatest obstacle now in the way of 16mm. is carelessness in those who use it. When 16mm. is photographed and processed with the same standard of care and accuracy that 35mm. now enjoys, we're going to see vastly improved results which will surprise many of us." END.

Virge Miller

(Continued from Page 253)

to the Studio's camera machine shop, where he served, first as assistant and later as chief, until 1916.

There he found plenty of problems to interest his active and mechanically-inclined mind. "The cameras we used in those days, not only at Universal but at any other studio," he says, "were probably the most motley collection of photographic machinery ever assembled. The studio had some cameras, but a lot of the best men prided themselves on having their own outfits. About every imaginable kind of camera was represented: there were French Gaumonts and Eclairs (we called the latter 'Gillons' for some reason nobody ever could tell), DeBries and the old, dependable Pathé Professionals; there were English Prestwiches, Moys and Williamsons; and the aristocrats of the camera stable were a few of the then ultra-modern Bell & Howells.

"Keeping those old babies in working order was an assignment that would make many a modern camera-mechanic acutely sick. No two of them—even of the same make—were likely to be quite alike, and the differences weren't only in the big, obvious things like movements, film-magazines and lens mounts, but in irritating little things like screws, bolts and threads. Some would be built to metric standards; others more or less to British standards, and a few to American standards. Often, to replace a lost or damaged screw, you'd have to cut your own, and until the Bell & Howell came along, most of the cameras were built by rule of thumb and guesswork rather than by the precision engineering we know now.

"Adding to the problem were the innumerable gadgets each cinematographer tacked onto his individual camera. Some of them were workable and some weren't; most of them were designed to eliminate 'static,' which was the big bugaboo of cinematography until the early '20s, when Eastman brought out their 'X-back' negative. Until then, film had one side coated with emulsion, and the other just bare celluloid. In cool weather, a charge of static electricity would build up in the film, and as the negative unrolled in the magazine or went through the camera, blue electric sparks would crackle along the film just like sparks from a cat's fur, or from an amber rod that's been rubbed in a piece of silk. The result on the negative was something like a crooked, many-limbed tree-trunk, usually right down the

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middle of the frame. Probably it was caused by friction against the bare celluloid (which, for this purpose, acts quite like an amber rod), and the felt light-traps we had in most magazines probably helped, too; the fact that most cameras were housed in a wooden box, almost completely insulated from the ground by the wooden tripod-legs and the wooden handle of the camera-crank was also very likely a factor.

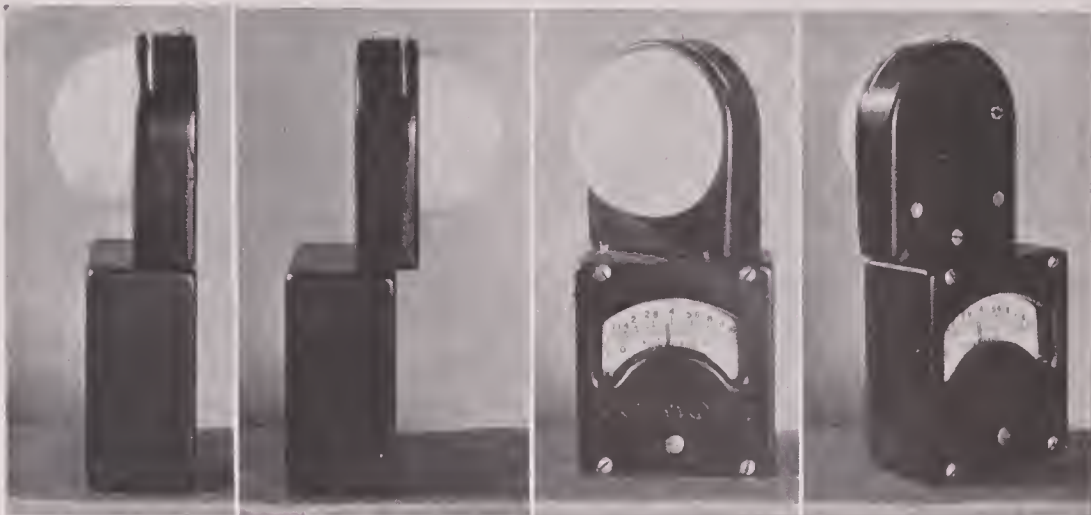
"At any rate, every cameraman had his pet gadget for 'positively eliminating' static. Some had little spirit-lamp heaters attached to the camera to warm it up; others had elaborate systems of wiring (which usually led from nowhere to nowhere) to draw off the charge—they hoped!—and the variety of non-static pressure-plates of felt, rubber, glass and even polished wood were incredible. Some of these gadgets may probably have helped, as did the sensible precaution of avoiding subjecting the film to quick changes of temperature in cold weather: but it took Eastman's 'X-Back,' which consisted of some sort of coating on the back of the film, really to cure it.

"We had another problem in those early days which was more in my line. Often in shooting interiors under artificial light, the boys found their fades—all of which were made in the camera—flickering inexplicably. The fade might start normally as the cameraman began to cut his shutter-opening, and then all of a sudden there would be a completely black frame, or an irregular succession of them, which made the fade flicker in and out most unpleasantly.

"That was an easy one to solve, though. We were using 50-cycle Alternating Current then, and as I knew that an arc operated on A.C. goes completely out at each cycle-change, I knew that the flicker was caused because the decreasing aperture of the shutter which made the fade would sometimes reach a point where the shortened exposure-period of the revolving shutter would synchronize with the dark period of the arcs lighting the scene. (That, by the way, could still happen with any modern professional camera or a 16mm. like the Cine-special making shutter fades on a set lit with A.C.-powered arcs.) I cured it by introducing diaphragm fades, for which I had to rebuild the diaphragms on all the studio's lenses so that they would close down to a complete blackout, just as the lenses on some amateur cameras like the Filmo 8's do today. This couldn't sync with the arc-flicker, so it proved an effective cure. Other studios tackled it differently, switching over to Direct Current instead of A.C., which took most of the flicker out of the arcs, though really flickerless arcs didn't come until a few years ago, when they were developed for use with Technicolor."

As Virge got closer and closer to cameras and camerawork through his camera-shop experience, he began to learn more and more about cinematography. Before long he was making photographic tests of cameras and equip-

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ment. Then he began to help various cameramen out with intricate multiple-exposure and other trick shots, in which his engineering experience proved valuable. And now and then in an emergency he would go out on the set and grind an extra camera when one was necessary.

Finally a real emergency came. One of Universal's troupes had to do some work at night in order to finish up with an important player who had to start another picture elsewhere the next day. The cameraman for some reason couldn't

work that night, and about 7 P.M. came a hurried call for Miller to go out and "fill in" as First Cameraman for the night's work. Feeling he had at least half the world's responsibilities resting on his shoulders, Virge grabbed a camera and kept the troupe going.

A day or so later, after seeing that night's rushes, the director came to Miller with a request that he finish the picture. At first Virge refused, unwilling to displace another man; but later the other cinematographer—solidly estab-

lished as one of the studio's ace cameramen—insisted on stepping off the picture so that Virge could have a chance at camerawork. And Virgil Miller became a full-fledged First Cameraman.

And as a First Cameraman or Director of Photography he has stayed since that day in 1916. Ten full years he spent at Universal, where he photographed 110 feature productions, including the memorable silent version of "Phantom of the Opera," and many others which ran just about the complete gamut of camera-fodder, from "westerns" to mystery melodramas and drawing-room comedy, so it is no wonder he became one of the very earliest members of the A.S.C..

The three following years he spent at Warner Bros. and RKO, until in 1929 he was appointed head of Paramount's camera department. During his six-year tenure in this office he pioneered many of the phototechnical developments which helped the industry adjust its camera technique to sound, and during this period, too, Paramount directors of photography captured the Academy Award for six consecutive times.

Leaving Paramount, he paused long enough to photograph one picture, and then became head of the Selznick Studio's camera department, where in addition to his administrative duties he served actively behind a camera on special-effects and other sequences for several productions, including the Technicolor "Garden of Allah." After this came a year of free-lancing, including some time spent on special color research, and finally a six-years' association with 20th Century-Fox, during which time he has done just about everything from "Charlie Chan" and "Mr. Moto" whodunits, with their always intriguing opportunities for effect-lighting, to conventional program films and pinch-hitting on important Technicolor specials.

Miller's approach to his work is to strive first and foremost for visual smoothness, with pictorial effectiveness dependent on story values. Photography, in his estimation, should be always held subservient to the story; and so well does he adhere to this that often players working with him for the first time have expressed amazement that while he keeps his camerawork so generally unobtrusive, he manages also to make them appear to such advantage on the screen. Yet when story and action permit, his camerawork can be as spectacularly pictorial as that of almost any man in the profession. His camerawork, in fact, reflects his personality to a striking degree, for while genial and friendly, he tends also to be somewhat shy and retiring until he has something to say: then he says it, and with a clarity that leaves you in no doubt that this man Virge Miller has plenty on the ball! END.

Strobo-Sync Quiz

(Continued from Page 264)

increase or decrease speed of projector for a while.

When the stroboscopic disc appears to be stationary, it is synchronized, and

the disc has to be illuminated by the projector flicker. This can be done in several ways.

1. By lighting it from the screen, near the screen.
2. By putting the running projector light on the revolving disc before starting and keeping projector and phonograph steady afterwards. This does not allow you to compensate for loss of sync.
3. By throwing some light on the stroboscopic disc from the front of the lens by allowing the projector ray to pass through any piece of optical glass (an old cleaned negative will do) *tilted at the right angle found by experiment*. This is recommended as it is simple and effective.
4. By linking projector electrically with a neon bulb fixed over the phonograph. This is complicated but best of all.

Mistakes Teach

(Continued from Page 262)

the person or object in which you're most interested will be over or under, depending on that subject's relation to the rest of the scene. The answer is simply to barge right in close to the subject and make your meter-reading from a point so close the meter "sees" only that and misses that "hot" background or that shadowed foreground. Then, though your overall exposure may suffer, you'll be on the beam as far as your really important subject is concerned.

And by the way, now that Kodachrome is such a scarce commodity, a lot of us are going to have to shoot black-and-white—and like it—instead of the color-film to which we've become accustomed. This means we'll have to watch out for monochrome tonal values, and make tonal and lighting contrasts take the place of color-contrasts in giving us the separation we need to make a subject stand well out from its background.

In Kodachrome, for instance, you can shoot a girl in a dark-blue dress standing in front of a dark-green hedge and be quite sure that the color-contrast between the blue dress and the green foliage will make your girl stand out pleasingly from her background. But in black-and-white, the dark blue of the dress and the green of the shrubbery will very probably both come out in much the same tone of dark gray, and girl and hedge will merge together in your shot almost as completely as though a camouflage engineer had been at work.

The answer to this is to change your viewpoint so that you get your girl in front of a different background which—judged from a viewpoint of black-and-white rendition, is either darker or lighter in tone *or in illumination* than your girl and her costume. Or, if conditions permit, you can shoot the scene in a back-light, which would produce an outlining highlight around the girl, and so separate her from the similar-toned background.

If your moviemaking goes back before the days of Kodachrome, just run a few of your black-and-white scenes—good and bad—and you'll be able to figure out a lot of little tricks like this which will help you make the transition back to monochrome without wasting film.

Another fault we see only too often is cropping off foreheads or shoulders in close shots. This is simply because the man at the camera forgot that the finder, necessarily removed at least slightly from the position of the lens, and the lens itself do not cover quite the same field when the subject gets within about ten feet of the camera. Technically it's called finder parallax, and if you want to you can work up all sorts of interesting gadgets to offset it, including alignment gauges which permit you to slide the camera so that for lining up, the finder occupies the same position the lens will in shooting, and interchangeable, or even automatically moving mattes in the finder, to indicate the correct framing for closer shots.

But the simplest way to do is to fit onto your finder a little mask of colored cellophane or Scotch tape which will indicate the direction in which the cropping occurs, and approximately the proportion you've found cropped off on the closest shots you usually make. If your finder is directly above the lens, the mask should trim off a strip at the top of the finder; if it is directly beside the lens, the finder mask should be at the side; if the finder is above and to one side of the lens, the mask should indicate both top and side. This way, the finder is perfectly adequate for long-shots, while for close-ups that little transparent colored mask will serve as a reminder that if you don't want to waste film, you'd better allow for finder parallax!

There are plenty of other film-wasting faults you're likely to find if you review your old films—especially the bad ones—carefully. Each of them will tell you something you should *not* do if you want to get the maximum usable footage out of the film you may be lucky enough to buy. In many cases you may be able to rig up some simple gadget like those cellophane finder-masks which will remind you of that particular mistake. And at any rate, by looking along your celluloid back-trail, you can find "*should not's*" which, coupled with the other things you've since learned you *should* do, will lead to better pictures on less film. END.

Incident-light Metering

(Continued from Page 263)

you can't use this system at all.

The answer here is to reduce the amount of light affecting the meter's cell to a proportion which won't overload the cell, but which will still give you an accurate reading. There are several ways of doing this.

Studio cinematographers, who use both G-E's and Westons for incident-light readings while making interiors, generally make this compensation by

using a little metal matte with a hole in the center which will admit only 10% as much light as would reach the photocell without the matte. This is a step in the right direction: the proportion is correct, but using a matte which employs only a comparatively small part of the photocell's total sensitive area is a chancy matter. The meter-makers themselves will admit—if pressed—that when turned out, as they must be, on a mass-production basis, it is impossible to be absolutely certain that *every* section of *every* photocell will have a uniform sensitivity to light. So if you concentrate the 10% of the cell-area you are using into a single section, it is entirely possible that you may introduce considerable errors which can throw your reading badly off.

Using a matte perforated with small holes, scattered uniformly over the cell area, but totaling only 10% of the total area of the matte, is a much better method—but it's also a mathematical headache for most of us.

A much more simple and practical method is to cover the cell with a translucent diffusing screen which will cut down the transmission to the 10% you want. This diffuser can be of opal or ground glass, but the simplest way to make one is to use a simple sheet of white bond paper having, of course, the desired 10% transmission, cut to the right size and shape to cover your cell, and mounted at the end of a suitable little cardboard tube.

Determining that transmission factor is easy enough. Just take an incident-light reading on a comparatively low-powered light-source (so you won't overload your photocell), and then try different pieces of glass or paper until you get a reading one-tenth of that—naturally, with the light-source and meter always in the same relative positions. For instance, say your first reading is 50 on your meter's scale: a diffuser with the 10% transmission you want will give you a reading (with the meter, remember, the same distance from the lamp both times!) of 5.

After that, you can use your meter—whether it's a Weston or a G-E of any model, or any other type—for incident-light readings indoors or out.

The exposure-readings you'll get using the meter's calculator-dial in the normal way will be as valid for incident-light readings as they would be (minus the diffuser) for reflected-light readings. And usually a good deal more accurate!

Unless used with more than ordinary expertness, you see, a reflected-light reading can be thrown off the beam by an amazing number of variables. First of all, either on interiors or exteriors, such a reading can be thrown badly off by difference in either illumination or reflectivity between the actual subject and the background. For instance, a reflected-light reading—especially from camera-position—of a girl in a white dress against a background of dark foliage will be thrown off by the larger area of dark background until the white-

clad girl is likely to be overexposed. Similarly, a dark-clad person in front of a light background—whether it's a white stucco wall or the vast, reflective expanse of the Grand Canyon on a sunny day—will probably be underexposed because of the greater area of more highly-reflective background. The same thing applies to subjects or backgrounds, one or the other of which is in the shade.

Indoors, under lights, your meter-reading is likely to be thrown off the same way unless you take your reading with the meter only three or four inches from your subject's face. Even then it's subject to error, for you're all too likely to read on the shadow your meter-holding hand casts from one of the front-lights. If you use any back-light or cross-light, your reflected-light meter-reading is always likely to be boosted because one or more of these lamps may be shining directly into the meter's eye.

Using the meter as outlined above for incident-light readings, you eliminate most of these variables. The most important thing in most shots is the tonal (and color) rendition of the subject's face. Luckily, it is usually one of the middle tonal values of a picture, so if you get the face-exposure right, the other parts of the picture will take care of themselves, going up or down from this median tone as they naturally should. So, whether in black-and-white or color, if you balance your exposure to the illumination on the subject's face, you're almost certain to have a correctly-exposed picture, even when you're shooting in a hot back-light without reflectors, or with your subject in the dappled shade under a tree. The same is true on interiors, too, only if anything rather more so.

Still, there are some little commonsense points you'd better observe in making incident-light readings this way if you want complete accuracy. In a flat light, either indoors or out, you can get quite accurate results if you just place the meter in the position of the subject's face and point the photocell at the camera. But most of us who have passed beyond the novice stage like a little modeling in our lighting: we like to have a highlight side and a shadow side to our subject. Now, a meter revamped as I've outlined doesn't have the Norwood's patented hemispherical diffuser, which automatically compensates for the angular quality of every bit of light falling on the hemisphere, which in effect represents the subject's face. Since you're working with a flat light-collecting surface, you'll have to make commonsense meter-handling take the place of the rounded collector in making this compensation. If you want to favor the shadow side a bit, simply tilt your meter over a bit to that side when you take your reading, so that about the same proportion of the meter's light-collecting surface is shadowed. With a little practice, you can learn how to do this so that you can "balance" your shadows and highlights

to any degree you want. In other words, make your meter read on the illumination falling on the part of the subject you're most interested in, and your overall exposure will take very good care of itself! END.

"Props"

(Continued from Page 259)

is not wasted, as results will show.

Even in long-range, outdoor movies, simple props are often beneficial to lend perspective to a scene. For example, by gently waving a small pine branch a few feet in front of the lens, a striking third-dimensional effect is obtained in a distant mountain view. Such a shot would otherwise be flat and perhaps not very interesting, but the use of this simple prop definitely gives it that "lift" out of the ordinary.

Although, as mentioned above, props are important in giving depth to many distant scenes, they undoubtedly play their leading role in semi-closeups and close-ups. These are the kind of pictures you or I take around home, many times indoors, with limited equipment. We don't have the expensive sets and props of professional studios, but that needn't stop us. Props can make or break an amateur movie as well as a professional one! That is why special attention must be given to every minute detail which appears in the viewfinder. Possibly, you may have to choose between a number of interesting articles that would serve almost equally well as props. Since there are no hard and set rules regarding what is right and what is wrong, let your eye be the judge. You'll find it surprising how often people see things alike in this respect!

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desired props selected, don't be content to "throw" them into the scene. Moreover, do not overdo a good thing by seeing *how many* objects can be squeezed into one scene. They should appear natural, as though they belong there, and not as if they were put there just "to have their picture taken."

Once the general scheme of things is arranged, try shifting the camera to get the best effect. Props are very useful in covering up or eliminating unwanted portions of rooms, thus giving a free choice of camera-angles to insure the most desirable backgrounds. Those in the distance may not even be distinguishable in close-up views because of the short depth of focus resulting from the large lens stops frequently used in this type of work. Nevertheless, they add "that certain something," even though partially out of focus. It is well to bear in mind that these props, though important enough in themselves, seldom should dominate the picture, or divide the attention from the main subject.

They usually are *not* the principal interest.

In color movies, added precaution should be taken in this respect, else the props may appear too prominent because of *color*, even though they would be considerably subdued were the scene in black-and-white. If good balance is maintained both in color and in composition, nothing will look ridiculous or out of place. How much more natural the results will be than with the stiff, unnatural close-ups which are all too common among cine fans.

A trip to your nearest movie theater will convince you of the importance of props, if nothing else will. Carefully analyze each changing scene as it appears on the screen. Notice how true-to-life every detail is. Watch the actors' hands. See how props give them something to do, put them at ease by taking away any trace of self-consciousness.

Page through your favorite magazine. Note the naturalness of the outstanding pictures that attract you as favorites. Chances are that props are to be found there too, though maybe you didn't notice at first glance. They can bolster your own pictures in the same way. True, the large professional studios maintain a special department just for this purpose. But in your own home, if you will but glance around, you will find your own collection of props . . . a fountain pen . . . a book, or better . . . some curtains or a Venetian blind to "dress up" an otherwise bare wall—*anything* to make your scenes more natural, or give your actors "something to do" to overcome camera-fright. Yes, you will see that your own property department can more than fill the bill for any average movie such as you may want to take.

You may be just a casual cinematographer with no aim for "super" productions. But remember, any movie either inside or out, is a *better* movie with suitable props! END.

16mm. Movies For Soldiers

(Continued from Page 258)

racks where the elite rated loge seats on their cots. If they found the picture boring, they could go to sleep. That night

they saw, "Thrill a Second," "Run Sheep Run," "Yanks in Africa," Pat Rafferty's "Bull Fight," and Ted Phillips' "Bathing Beauty Parade."

The following Saturday we received a call from the Chaplain of a detail near one of the airports where we had shown pictures three weeks before, asking us to dinner. He said he wanted us especially that day because they were having steaks. We were seated at the officers' table which was set with china plates. They admitted rushing around to find some for us so we wouldn't have to eat from mess-kits.

We asked those around us if they liked the type of pictures we had been showing. They said the boys thought they were very entertaining and the only suggestion they could make would be for the showing of 35mm. features that have been reduced to 16. They mentioned some old pictures they would like to see again such as "Lives of a Bengal Lancer," "Lost Horizon," "Rio Rita," and some Pete Smith Shorts. During that meal I lost any ideas I might have had that our soldiers were not being fed properly.

The camp had two dogs and a pet duck, "Donald." After dinner, Midge asked permission to take pictures of the boys and their pets. They enjoyed this almost as much as seeing the movies and suggested we might find material for a newsreel type of picture made up of the pets of the various camps.

Sometimes the posts had no chairs and the boys would sit on a concrete floor, but they were generally our most receptive audiences for they are stationed where their duties keep so many of them occupied that it is impossible to get a large enough group together to rate one of the regular "live shows" sent out from Hollywood.

Most of our shows have been for small units like this—sometimes just a squad or two stationed at an anti-aircraft or searchlight battery, and sometimes for larger units; our largest audience so far has numbered an unexpected 250. One thing all of these groups have in common: they are constantly on active duty guarding our coast or one of the strategic war plants in our area. Usually they are so isolated that the boys can get only a few short hours' leave in a matter of weeks, or even months, which means that on the rare occasions they get into town, there is only time for essential business, and none for moviegoing or other recreation. One outfit we visited told us that ours was the first entertainment they'd had in eight months! At others, we found that only half or perhaps one-third of the men can be away from their guns at one time, so we've given our show to half the men on one evening, and then repeated it another evening for the other half.

The next Friday the group that went out found the camp they had been assigned to was wired for 60 cycles. The turntables which furnished the synchronous music for some of the silent pictures were for 50 cycles so Midge Caldwell's



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Kodachrome Hawaiian pictures couldn't be shown with sound.

The boys were so disappointed at this that the next day they ran in a special wire from the house across the street and then called in a request for a special showing. The committee by that time was pretty sick of seeing the same pictures over again so Bill Stull, A.S.C., Editor of THE AMERICAN CINEMATOGRAPHER, sent down "Tarzan, Jr." and "Jungle Trails." To those were added a comedy and "Jack Frost."

Afterwards the boys decided to entertain our group and brought out an accordion and sang for us. We were informed they had just acquired a new mascot, so we went out to see it expecting anything from a duck to a St. Bernard dog. We were due for a surprise for it turned out to be a bawling, flapping baby seal named Flipper.

After hearing the circumstances of how they acquired it, Midge immediately sensed a good story for a picture and dated the boys and their mascot up for scenes the following Sunday. She and Ray Fosholdt and Clarence Aldrich spent the three following Sundays completing a clever picture appropriately titled "The Government Seal." The boys invited them to dinner and worked so enthusiastically with them that it made it an added pleasure to produce the film.

Incidentally, as the frequency of our showings has increased, our projection-units have been becoming more and more accustomed to eating—and well!—at Army, Navy and Coast Guard mess-tables. Often they are invited to dine with the officers or men before the show, and afterwards, the boys nearly always insist on serving a special supper of coffee, fresh rolls and fruits, and the like, before taking us home. We can certainly testify that the American Soldier and Sailor live well, and that they are unendingly appreciative of anything like this that we civilians can do for them.

Last week we were invited to see a comedy melodrama skit entitled, "Wild Nell, the Pet of the Plains," or "Her Final Sacrifice." The cast included soldiers from a searchlight battery of a Coast Artillery Anti-Aircraft battalion where we had shown pictures. The boys took both masculine and feminine parts. The play proved so entertaining, that Clarence Aldrich took his sound camera out the following week and with the

help of Midge and Ray photographed the play so that the boys could show it to other batteries.

Next to live talent, motion picture entertainment is rated first above all other forms of entertainment at the camps. At our club's last meeting, members volunteered for a certain night each week to show full length sound pictures that are being sent down by the Los Angeles U.S.O. Mobile Unit, with which we are now officially affiliated. So now pictures will be shown at a different camp every night of the week. These films are reduced from current 35mm. pictures that are playing the theaters—or sometimes not even released yet—and are kept up-to-date.

We are all deriving a deep and joyous satisfaction from the knowledge we are bringing entertainment to our armed forces through the movies that have long been a hobby and pleasure to us. We hope other Clubs are doing the same for the Army and Navy Posts stationed near them. We hesitated to start with just our own members' films, but we soon found out we had full cooperation from motion picture magazine editors, the U.S.O. Mobile Unit, business firms and war production plants who possess entertaining films and are willing to loan them. And the warm appreciation all the men—from commanding Colonels down to buck privates—show for our efforts (even with our silent, amateur films) is enough in itself to make the whole task worthwhile. It sends an indescribable, warm glow over one, which simply can't be put into words. But we hope lots of other amateurs and clubs throughout the country will give themselves a chance to experience it! END.

Rhapsodic Technique

(Continued from Page 251)

the limits of time allowed by changing staccato scenes. It required careful editing to select significant bits of action that would highlight the story to be told. It required accurate cueing of voice, music, and sound-effects.

The rhapsodic technique is not one to be indiscriminately used or carelessly handled. But, from the experience of the producers of "The Thousand Days," it is considered a style that lends itself to further development, and offers extremely interesting possibilities as an important form of motion picture expression. END.

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(Continued from Page 248)

tank's commander, and the tank starts forward.

Inside the tank one feels confidently assured, for to the tough armor of the tank, bullets, fragments of shells and mines, and the like, are like so many peas tossed against a stone wall. There is but one inconvenience: taking pictures is possible only from the open hatch. The regular vision-slits of the tank are so narrow that while they give a fair visual view of the countryside, they are too small for the lenses of our cameras to be put through. So we must stand up and work our good Russian-built "Eyemos" through the open hatch at the top.

Even before we were well started forward, we began to shoot. Close by, a German shell hit a truck which was pulling a field-gun forward to a closer position for direct firing. The truck, which was loaded with shells, is in flames, but the fighters saved the gun, though they have to unhook it from the flaming inferno and roll it away. They do it quietly, methodically . . . in a few minutes the gun is uncoupled from the blazing truck and attached to a new one—on its way forward again. We record all of this little episode of unsung heroism on film.

Our tank moves straight toward the village. Not far from here, other tanks await the order to attack the Germans, who are putting up a stubborn resistance. Our own tank moves a little to one side, to give us a good camera-angle. We begin shooting again. Our subject at last is the village.

The spectacle must be immortalized! The village, which has become the base-point of the German defense, literally seethes with explosions and shell-bursts from our artillery. Every minute thunderous volleys of our shells crashing into it send thick billows of smoke and flame toward the sky. A group of our dive-bombers appear, and they, too, unload their lethal cargoes upon the Germans in the village.

Quickly we reload our cameras. Our cameras are working fine . . . what a difference from our experience last year! Last winter we suffered plenty from having cameras freeze up in the intense cold. The only way to keep them warm

at all was to carry them constantly against our chests, under our heavy winter coats. Consequently, many interesting shots were lost. But now we are completely free from this trouble, thanks to cinematographer Dobronitsky, who invented a non-freezing method of lubricating cameras. Now our cameras are working like fine watches!

The tanks start to advance. We take close shots of the caterpillar treads throwing fountains of snow as the tanks move rapidly over the field. Now the Germans are putting up a heavy counter-barrage in front of the village. We film the bursts of the German shells. We film chains of our fighters advancing toward the village. They advance like ghosts in their winter-white camouflage robes, pulling behind them both heavy and hand machine-guns. Not for a second do we stop shooting: when I pause to wind or reload my camera, close by my ear I can hear the steady purr of Bobrov's camera.

During the few days of this battle we photographed over three thousand feet of film. Over in the next sector, cinematographer Verov was doing much the same thing covering his part of the battle. Our negative was rushed back from the front, and our shots were included in the next issue of our National newsreel "SKJ," the Soviet Kino-journal.

Making such films enriches our cameramen with battle experience, but it does more than that. We plan to make many more such scenes from a tank, for films like this give our Soviet home-front audiences an opportunity to be— if only vicariously—right in the middle of a present-day battle in which the men of our heroic Red Army inflict devastating blows against the Hitlerite troops. These pictures show our people what their own soldiers and airmen are doing against the Nazi bandits who have sought to despoil our country. We are happy to see also the films that are beginning to reach us which show our American and British allies in action. And we who man the Soviet cameras will be most happy when the day comes—and come it must—when our advancing armies and we can clasp the hands of our comrades who man the cameras of the American and British Armies in a world where Fascism is no more! END.

Screen Tests

(Continued from Page 249)

who did not want those stars, for the same reason. They had become accustomed to having nothing but the most beautiful women as their stars. How could a distinctly homely woman, no matter how great an actress she might be, be glamorized for the screen?

But our cinematographers, always in the lead in helping to perfect motion pictures eventually proved that producers need not worry about how the player will look. All they need to worry about is how his or her voice will sound and whether or not they can act—the cameramen will put them on the screen in a manner that will make

everybody happy.

Of course, the producer and director must give the cinematographer cooperation and let him be more than just a mechanical camera-cranker if the finest results are to be accomplished. If a director or producer insists on photographing a subject from a bad angle, then the cameraman cannot be blamed for bad results. If the director does not convey to his cameraman the mood of the picture, how can the cameraman put that mood upon the screen? If the producer or unit manager is constantly hounding the cameraman to "stop wasting time fooling with those lights," he is simply cheating himself out of the benefit of the lighting skill for which the cameraman was hired in the first place.

But, getting back to selecting talent without screen tests, I have also just signed another player I have never seen on the screen. He is a young French actor named Harald Ramond, who after fighting with the French Army against the Germans in the great Battle of France, finally escaped occupied France and made his way to America. I took one look at him and felt that here was a man who would be a sensation on the screen, and I signed him to a term contract within ten minutes after meeting him. As in the case of Peggy O'Neill, I never gave a thought to how he would photograph, for I *knew* our American cameramen would place him upon the screen to advantage.

In the case of Peggy O'Neill, I have had a story called "Peggy O'Neill" filed away for several years waiting until the right red-headed Irish type of girl came along to fit the title role. The moment Peggy walked into my office I knew she was the girl I had been looking for. Why bother to wait for a screen test which I knew would be good! Perhaps while waiting she might be signed by someone else. Beautiful of face and figure, five feet and five inches

tall, gorgeous brown eyes and a head of red hair such as is rarely seen, an engaging smile, excellent breeding and education, graceful in motion, pleasing in speech—that is Peggy.

Tall, dark-complexioned, black-haired, beautifully chiseled features, manly to the extreme, flashing white teeth—that is Ramond. He and Peggy will make a grand screen couple, and I know our cameramen will present them on the screen in a manner which will bring gasps of excited pleasure from audiences. You may gather from this that I not only am sold on Peggy and Ramond, but on Hollywood's Directors of Photography as well. I am: I know from experience that they are tops! END.

Documentary At Sea

(Continued from Page 247)

hand) and then used the Special on what later became part of the film's opening sequence — the schooner ploughing through heavy seas with the men walking on deck with that rolling gait peculiar to sailors the world over.

From the build of the schooner, we were not bothered overmuch with direct spray, though it was always present minutely in the air, and we had regularly to go over our equipment with watchmaker's oil to remove the incrustated brine that gradually built up on every surface. Incidentally, we also learned that lenses used continually in the brightness and salt spray of sunlit seas lose their life.

But we didn't have to worry about that—our two weeks on the ocean were too short: the thing that troubled us most was keeping the camera both level and steady on the rolling deck. When the sea was calmer—as it was during our week on the Grand Banks, some three hundred miles offshore—we found we could use ropes, guy-wires and other devices attached to railings and other parts of the vessel to hold the camera down. And a good part of the time, of course, the deck was sufficiently steady to permit a set-up without auxiliary assistance, especially on the homeward voyage when we passed and photographed a convoy outward-bound.

But it wasn't the calm that really helped our film. It was the rough weather. We have both found that people always work much better with us once they see we are willing to adapt ourselves to *their* way of life. Only after the dog-team trail up North were we really accepted. And only after the gale, which, figuratively and literally, we stood out, did the "Flora Alberta's" crew so unhesitatingly do everything for us. They never knew how near we were to deserting ship on the third day when another fishing vessel, on its way back to Lunenburg, chanced to pass!

Good sailor though he was, Cinematographer Sinclair had only recently come from a hospital bed and an operation. Our sleeping accommodation was the captain's bunk. It had the dimensions

of an oversize herring-tin, and the aroma surrounding it was that of a tin long opened. To a fishing schooner's usual olfactory orgies—oil fumes from the diesel blended with billious bilge stench of fish from voyages innumerable—a new

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stomach-turning perfume was added: the cloying, sickly emanations of freshly-dried paint.

It wouldn't have been so trying if we'd been able to get on deck; but a gale blew, the vessel was laying-to, and we had to keep to the cabin. It lasted for three days and two nights. In the rolling moments of the second dawn, Sinclair, unable to do what he most wanted—be sick or die—gasped: "Ted, I can't stand it. I've got to get back to Lunenburg. I'm sick. They can row me to the other vessel. It's still near enough. It laid-to all night."

"Okay, Doug," I said, "but I'm staying. Leave the camera and I'll finish the job!"

If steadying shock were possible on the pitching schooner, my words provided it. And if haughty indignation were possible in the embryo-like posture the herring-tin bunk enforced, Sinclair achieved it when he told me he'd rather die than leave the job to me. My face was turned away from him so he couldn't see my gleeful grin. My suggestion—untenable to me—had worked the desired end. Afterwards, on deck, he never even glanced at the other vessel, still laying-to within rowing distance on a sea that was perceptibly abating.

Half the battle in making any documentary successful is to get your people to forget that you are strangers and that your camera is a strange thing. Once the people are your friends, they do not feel you as a stranger; but the camera can still make them self-conscious, especially at close range. That's why many documentary makers—notably Robert Flaherty—use telephoto lenses up to 12 inches so that they may be distant from a subject while actually taking a close-up. With us, it was impossible to get very far away from our fishermen on the deck of the "Flora Alberta"; and besides, we'd nothing larger than a 3-inch lens—all the studio had been able to furnish us.

However, after the gale brought us together, the crew did anything we asked them. They were especially good about not staring at the camera—something which ruins so many documentary shots. We couldn't have told them not "to mug," when "to mug up" meant to eat in Blue-nose sea-talk!

They went about their daily tasks for us as if no camera were there. Possibly because the work required full strength and concentration, it made it easier for them to forget the camera. Though in the sequence we took in their fo'c's'l quarters, where they were relaxing in a poker game, they continued in the same natural way . . . so much so that it appears as if the game goes on just as it would have if our lights hadn't flooded the cabin with unnatural brilliance.

We managed these interior shots when the boat was at the fish plant dock and a power hook-up could be made with the town circuit. At sea, the Delco lighting plant had insufficient current for any size photoflood, let alone our five No. 4 Victors.

Another technical difficulty we encoun-

tered was photographing the men at work in the dories. These are dropped from the vessel cruising over a three-mile fishing ground. From them the men set their lines; then come back to the vessel (usually for a meal); and afterwards return to the line buoy to haul the fish aboard the dory.

Cinematographer Sinclair was able to get the Eastman Special set up in the bow of one of the dories and photograph the vessel as it slid past during the launching. He was further able to photograph the man pulling in the 300-foot lines laden with cod.

But to get the fisherman setting the lines—playing them out over the side of the dory—here was something that the angle from the dory itself didn't satisfactorily cover. Pulling up the fish, the fisherman's face was continually turning towards the bottom of the dory where the fish were being tossed; but when he set his lines, he faced out to sea. The shot was essential: the lines had to be shown set in order that the later scene make sense when they were pulled up.

We finally found that if the fisherman went through the motion of setting the lines—they're tossed out rhythmically over the end of a short stick—while he stood in the top dory of the stack on deck and the camera angle was low, from the deck upward, a perfect illusion of reality was created. The vessel happened to be rolling nicely, so that the clouds were photographed in motion behind the fisherman. In the black-and-white dupe, from which the cutting copy was edited, these unfortunately didn't register. Criticism immediately arose because the scene looked static; but the point was cleared up the moment a few feet of the master were run through a viewer.

On the "Flora Alberta" our documentary illusions of grandeur momentarily got the better of us. We had an unusual opportunity and sufficient film; and the color everywhere was amazing, wonderfully suited to Kodachrome because blues, reds and yellows predominated, with scarcely any green, always the most unsatisfactory tone register in Kodachrome.

Cinematographer Sinclair expanded our tentative shooting script as he caught every phase of the colorful fishing about him. We sailed through a convoy; he recorded it. We discovered the men hated the sharks which infested the Banks, would lure them to a noose at the ship's stern, then lasso them; he got this.

For once our pretended grandeur was practical. When we returned to the Film Board studio and the rushes were screened, it was decided our material warranted two films: a single-reeler on in-shore fishing and village life, and a two-reeler on the fishing schooner. We completed and recorded these two films before we left the Board. Because the color is so unusual, and it guided the form of the film and the words of the commentary, we are hoping wartime restrictions on Kodachrome prints will not

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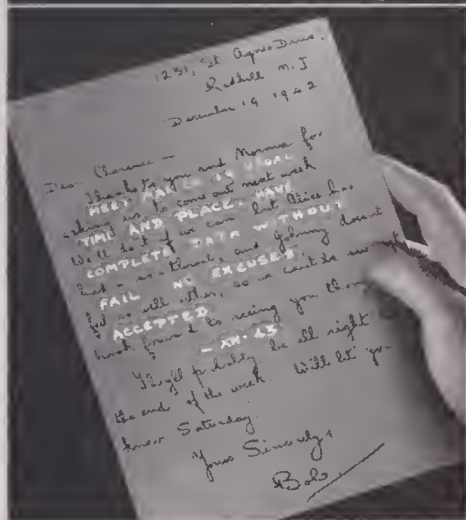
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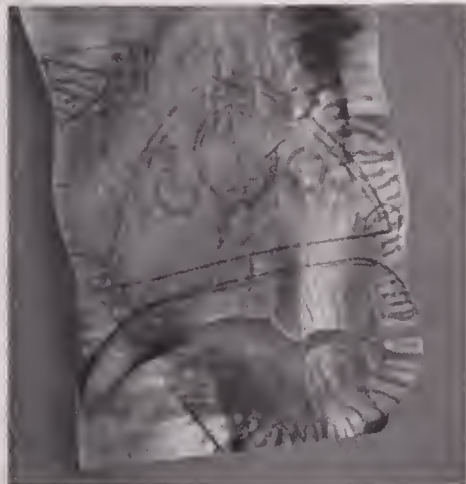
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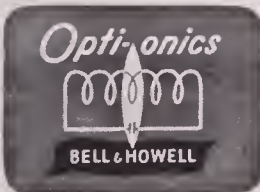
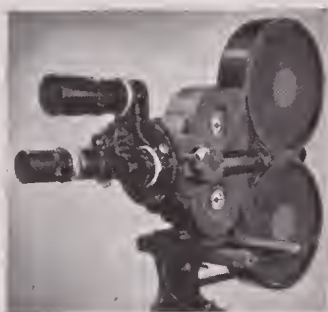
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

AUGUST, 1943

NO. 8

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The Front Cover

This month's cover is a shot of players and crew on the set of "The Girl From Leningrad," a Gregor Rabinovitch production, with Eugene Frenke as associate producer, Fedor Ozep director, and John Mescal, A.S.C. director of photography. Left to right front row, Dialog director Don Brodie (with script), Director Ozep, Katherine Fryc, star Anna Sten, Mescal. Standing, left to right, Hank Kessler, assistant director, Archie Lowrance, grip, Pliny Goodfriend, operating cameraman, Jack Kenny, assistant cameraman, Guy Gilman, electrician and Alexander Granach, who plays an important role. The still was made by James Doolittle.

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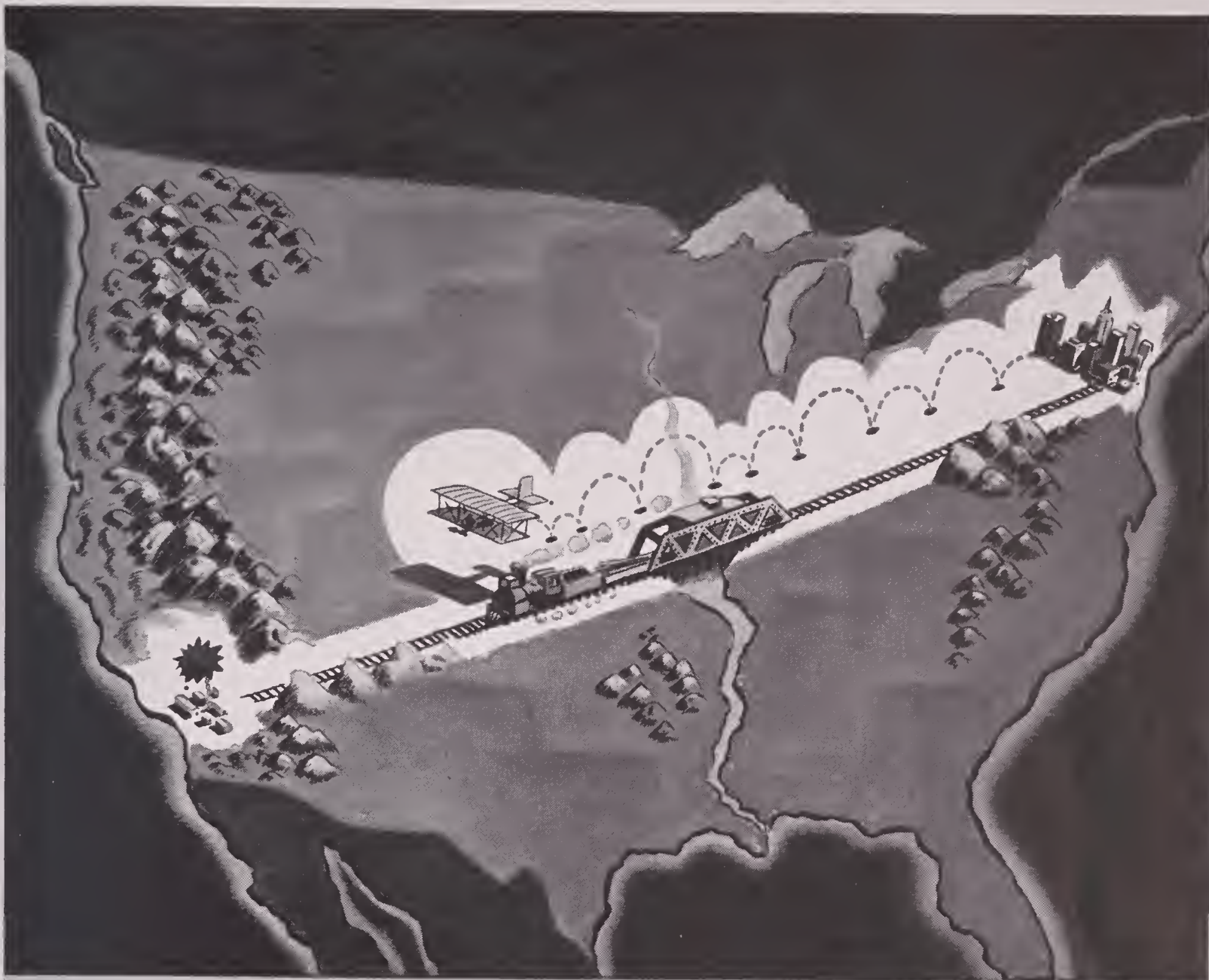
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Illustration
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Fig. 1



Fig. 2



Fig. 3 (top), Fig. 4 (bottom)

Illumination On Walls

By KARL FREUND, A.S.C.

WALLS of one type or another form the background for a large majority of the scenes a cinematographer is called upon to shoot. These walls may range in tone from something very dark that just soaks up the light, to an obtrusive white that is very hard to hold down.

The wall, forming as it does a background, is strictly of secondary importance in a scene. Nevertheless its influence on the effectiveness of the scene is quite marked. For this reason the illumination on it must be very carefully arranged by the cinematographer.

I have found it advantageous to always consider how the eye will adapt itself to any combination of illumination levels such as that at the position of the principal subject and that on the wall behind the subject.

For example, suppose the subject is to be normally lit. The background is a medium tone which should show up darker than the subject. This is probably the most general type of arrangement. (See Fig. 1.) In such a setting the eye is naturally directed to the principal subject. In this case, the eye adapts itself to the level of illumination prevailing on the subject. The background in this case being relatively neutral in tone does not act to modify the eye adaptation.

For such a scene I use my Norwood meter in the normal manner, at the position of the subject. If I want to use a lens aperture of $f:2.3$, then I bring up the lights on the subject until the meter indicates $f:2.3$. This takes care of the principal subject. Then I stand back and note visually the relative brightnesses of the subject and the background. When it looks right visually, then we are ready to shoot, because the camera will see the scene in the same balance the eye sees it.

Another type of scene is one in which the walls are to appear lighter than the subject. (See Fig. 2.) This sort of a scene is more in the nature of an effect-lighting. It is not encountered as often as the first type of scene described above. However it can be very effective photographically, but great care must be used in the illumination arrangement.

In such a scene the eye is again naturally directed to the principal subject. The eye starts to adapt itself to the illumination level of this subject, but is now considerably influenced by the greater brightness of the background obtruding itself. When the eye has become adapted to the illumination level of the background it will be found that the subject now *appears* somewhat *darker* than it did under the conditions described for the previous case. It is of course desirable to have the camera

record this changed visual appearance. So a modification of the basic practise with the Norwood meter is followed.

In this case the meter is again used at the position of the principal subject. In order to give the subjective impression of a darker subject, a differential is set up between the illumination-level on the subject and the lens aperture setting. I find it most convenient to accomplish this by changing the "film-speed" mattes in the meter. For example, suppose the background wall is to be moderately brighter than the subject. For such a scene I estimate that a differential of about one-half an f -stop would be appropriate. I am using film with a speed of Weston 32 for interiors. So for this scene, in order to achieve the $\frac{1}{2}$ -stop differential, I take out the No. 32 matte and put in the No. 50 matte.

Continued on Page 306)

Commentary-Writing For Documentary Films

By EDUARD BUCKMAN

HOWEVER brilliant may be the cinematography in a color documentary, however natural the "performances," or however clever the cutting, much of the film's final effect depends on the commentary. If there is one thing in films for which there seems no handbook available, that thing is commentary. It is more than important: not because it can save a film, *but because it can so easily ruin what otherwise would be a clear and interesting one.* When writing commentary, we must constantly remember that pictures, if good, themselves register far more quickly and sharply than spoken words. Words accompanying a color documentary require the most careful handling, for color invariably reveals even more to an audience than does black-and-white. Color film commentaries have deliberately to be underplayed, kept as a reinforcing complement. Further, as any good color film is built on color sequences, each with its own rhythm, the narrative should catch this rhythm and never lose it, changing, easily and imperceptibly, whenever the sequences do.

Silence, it has oft been said, is golden. I believe in a color film that it is not only gold but can take on all the colors possible in Kodachrome because it adds immeasurably to each! We writers love to talk. Most of us once thought a two-reeler meant twenty minutes for us to have our continuous say. We always conveniently forgot that a film, being pictures after all, was able to say far more than we ever could. Remembering this, we should now become as frugal in our remarks and as simple in language as possible. Our sentences, to have fullest effect, should be divided by periods of silence when the scenes can register their color meaning undiluted, intensified, if anything, by appropriate music.

The function of commentary, as I see it, is to provide details which further a complete understanding of the picture on the screen, not merely reiterate what it already shows. Take, as an instance, the time element. Often this can be done filmically, but sometimes it is not practical and the hour is not absolutely set by the color or action on the screen.

When, in our fishing film, we faded in on the men working over their lines under brilliant sunlight, our commentary ran: "It is almost noon. The men have been working since three. Now they are baiting up for the second time." That told what the men were doing, when and

why, things which the average, non-fishing audience would not be able to gather from the scene.

The *how* of the operation was self-evident, and the commentary did not need to tell how the lines and hooks were attached, how the bait was put on, and how skillful the men were at the work: these, the picture did. The commentary continued: "Each two men have 55 lines—over 3,000 hooks to bait with substantial hunks of frozen mackerel from the 15,000 lbs. on ice in the vessel's hold." This, as I see it, is the function of the commentary: to supply any data the film can't itself fluently project. Indicating 55 lines, 3,000 hooks and 15,000 lbs. of bait lying on ice in the hold, would have been filmically uninteresting and, in the case of the bait, photographically difficult.

One of the most effective ways to use commentary is in counterpoint. I can't word it better, though I know it sounds a bit highbrow that way. What I mean is that often we want to emphasize something which the picture implies but doesn't show, or else we want to divert the audience's attention, in part, away from the picture and so soften the effect on the screen.

In our fishing film I think a perfect example of the first type is where the fishermen are in the dories. We were shooting in what obviously was summer weather, and the men were apparently hauling up fish effortlessly. But the work actually was hard and back-breaking. There are three miles of line to pull aboard. Further, what gives the scene point is that the men do it the year round, all through the winter months when the Atlantic is chill and cold. To give the work its fullest documentary meaning, this had somehow to be indicated. And so while the film flows on in its obvious summer colors—fishermen hauling fish over wheel, close-up; fisherman's face, close-up; fisherman hauling fish into dory, medium-shot; bottom of dory piled with fish—the commentary (and in this particular sequence commentary is imperative because the scenes have an inherent similarity) was made to say: "To haul steadily, over the wheel, with bare hands, the three miles of fish-filled lines, is hard, hard work. Though it is not so bad in summer. It is in winter, in piercing cold, in sleety squall, in 'thicka-fog,' that the fisherman's hours in the dory are most cruel."

I can think of one particular spot in

WILLIAM STULL

IT IS with deep regret that we inform the readers of this magazine that William Stull, its editor for the past two years, died on July 10th, after a five-day siege of pneumonia.

To this writer, Bill meant something more than just a friend and a brilliant editor and technical writer. He seemed almost like a son, for it was I who discovered Bill and started him on his career. It was back in May, 1929, that I met Bill. I was then editor of this magazine. Bill was a shy, retiring, young chap with a vast amount of technical knowledge. I asked him why he didn't write a piece for the magazine. He said he didn't believe he could write well enough. I finally persuaded him to try. From the start, he showed brilliance, and he went on from there to become perhaps the outstanding writer of technical articles in Hollywood.

It was only logical that, after writing for the American Cinematographer for many years, he eventually became its editor. And he won countless friends in that position. The world of cinematography has lost a truly magnificent reporter of its achievements in the passing of Bill, the magazine lost a great editor, the cameramen have lost a real friend who was the first to give them recognition, his wife and two children have lost a wonderful husband and father, and his mother a devoted son.

One of the peculiar twists of life is the fact that I, who started Bill on his writing career, should have the honor of jumping in and completing his work in presenting this issue of the magazine to its readers. If the contents of this issue do not measure up to those of the issues of the past, you will know it is because Bill is gone.

—HAL HALL.

the fishing film where we wished to take the audience's mind off of just what was happening on the screen, and commentary had to be used to do it. This was in the shark sequence. The men had lassoed the killer fish and hauled it up. Then they proceed to cut it in two. They hate these sharks which ravage the cod, continually cut the baited lines. And so the men savagely kill the shark by severing head from body. In the film, the colors of the guts as exposed by the knife are superb. It is paradoxical that such a brutal dissection should have had such breath-taking pictorial beauty.

That was why we felt the film would lose if it were not included; but once we included it, we had to use commentary to soften its reality, and we decided

(Continued on Page 310)



The Russian Influence In Hollywood

By PETER FURST

THE amount of Russian stories in production or preparation in Hollywood today may seem staggering to outsiders and may even prompt some to mutter dark things about "Hollywood plots" and "destructive propaganda." Indeed, there are some who would have Hollywood make only anti-Russian films, but that is neither here nor there.

It is true that there are many Russian stories in the making. But, then of course, there are a good many dramatically inspiring things happening on the 2000-mile Russian front every day, and there are few movie makers who cannot recognize good melodrama when they see it. Besides, Hollywood has made a good many screen epics around fronts that are not half as vital to the Allied cause as is the bitter Soviet-Nazi struggle from Leningrad to the Black Sea. Remember

the many commando stories and the flood of Norwegian films which hit the nation's screens not so long ago?

Actually, when you examine things carefully, there aren't so many Russian films in Hollywood at all. In addition to "Mission to Moscow," there is the more recent "Boy from Stalingrad," which has been shown in New York and has aroused a good deal of comment there although it did not hit the first-run houses on Broadway but only some small out-of-the-way theaters. Samuel Goldwyn's production of Lillian Hellman's "North Star," with Anne Baxter and Dana Andrews, is now completed. The film will be unusual insofar as the only accents in the film are those of German soldiers, while most other Hollywood versions of Russian stories have utilized as many foreign-accented actors as possible.

Miss Hellman explains that she wanted to make her story not only to be completely authentic down to the smallest detail, but at the same time applicable to the American scene. She wanted American audiences to be able to identify themselves easily with the Russian peasants and fighters on the screen and thought that if these peasants had foreign accents, the average theatergoer would not be able to feel himself at one with his Russian ally on the screen. Therefore, only men and women with American accents were cast in the film and those with accents who had hoped that this film would give them their big chance were bitterly disappointed. Almost everyone connected with the picture is American: Anne Baxter, as a young Russian peasant girl; Dana Andrews as a Red aviator; Jane Withers as a misunderstood young village girl; Walter Brennan as a farmer; Walter Huston as a Soviet scientist; Lewis Milestone, the director and James Wong Howe, A.S.C., the cameraman. Even the Germanic-looking Eric Von Stroheim is an American citizen. Stroheim, incidentally, has the curious role of a German doctor who despises the Hitler gang, yet does their dirty work in Russia and who is shot by the Russian scientist Walter Huston, because, as Huston says, "those who do the work of Fascists and yet despise them, they are the real danger."

The really memorable lines, however, are spoken by Anne Baxter at the end of the film: "Wars do not leave people the same. All people will learn that, and come to see that wars do not have to be. They will make this the last one, a free world for all men. The earth belongs to us, the people, if we fight for it. And we will fight for it."

M.G.M. has completed "Song of Russia," R.K.O. is producing "Revenge," and a new outfit, R. & F. Productions, releasing through United Artists, is working on the American version of Artkinov's "Girl from Leningrad." The latter, too, differs from the usual run of Russian stories though for different reasons than Goldwyn's "North Star." "Girl from Leningrad" is not a story of guerillas or soldiers but of women at war with the enemy; Soviet nurses in a field hospital on the Leningrad front. Both the director, Fedor Ozep, and the star, Anna Sten, have had ample experience with Soviet movie technique since both have worked on Russian films before coming to the United States.

These, and the other war pictures completed or in production, have of course, left their indelible mark on American cinema production, and this certainly is not meant politically as some of the isolationist senators and the critics of Hollywood in the editorial offices of certain newspapers would have people believe.

Perhaps one of the most important aspects of this influence is that the producers have to compete with Soviet films in portraying Russian life under battle

conditions. Since Russian films have always—ever since the revolutionary "Potemkin"—been famous for their realism, producers of the American versions of Soviet life are forced to take on some of that realism. One has only to go and see a fairly good Russian movie such as "Diary of a Nazi" to realize immediately where it is that Hollywood has always fallen short in its presentation of the more violent phases of life. What has been overlooked in even the most recent of our war films is certainly not technique—Heaven only knows that ours is the most perfected in international film history—but the irrevocable fact that the American cinema-going public, long used to the often brutal realism of the news-reel coverage of this war, cannot react sharply any more to death, not when it is presented in a beautiful studio sound stage setting, with soft lighting and camera work and makeup which tend to flatter the actor's physiognomy even in death. It isn't that the American movie-going public has become calloused and brutalized, but simply that we have become war-conditioned. We know now what war and death look like, and we know that it is not like their movie versions.

We are used by now to realism in its extremest forms. We have seen what a fire can do to an entire city and what a sailor looks like after he has spent sixty days on an open raft. We know now that a man who has been hit by a fifty-caliber machine-gun slug or a piece of shrapnel does not die quietly, sinking slowly to the ground and whispering last messages into the ear of the nurse he loves or his comrade. We know that he bleeds and that he screams. We don't have to see that on the screen of course—as a matter of fact, we won't. The Hays Office takes care of that.

But we don't have to see that. All that is really necessary is that the movie soldiers look like real soldiers, that the movie workers look like real workers, that the movie towns and the movie battlefields look like real towns and real battlefields.

The Soviets never had to worry about that sort of thing. They are used over there to a hard eventful life. And despite that they have never looked for "escape" from their daily troubles. On the contrary, the Russians asked that their struggle be portrayed faithfully in the Soviet pictures. And let no one mutter "dictatorship" and "they were forced to see that sort of stuff." People usually find a way to express their feelings about movies—mostly by staying away from them in droves, regardless of high pressure publicity campaigns, or government appeals.

Hollywood, to a great extent, has caught on to that. The moviemakers realize that despite the urge to seek escape, workers and soldiers don't want to go to a movie theater and sit through the antics of the idle, the sophisticated, the carefree. They want to see something of their struggle portrayed on the screen



Top is a scene from "The Girl From Leningrad" showing Anna Sten reading to a group of wounded soldiers in a field hospital. Second picture on this page is another scene from "The Girl From Leningrad" showing Miss Sten as a Russian nurse attending Kent Smith, who plays the role of an American aviator. Bottom picture is Irish Mary Lou Harrington as she appeared in the role of a Russian girl in "The Boy From Stalingrad." On opposite page is a scene from "North Star." Samuel Goldwyn is producing "North Star." "The Girl From Leningrad" is a Gregor Rabinovitch production, with Eugene Frenke as associate producer.



and be spurred on by their own efforts. They want to be able to look at a picture and come out of it, feeling: "Gee, we guys are certainly doing a great job, let's go and get on with it!" There is nothing like a little applause to spur on the actor. The Russians realized that and gave him that applause.

It is interesting to note that while Russian stories, producers and directors invade the Hollywood scene, they turn to the Hollywood cinematographers to put the stories on the screen. Russian technicians and cameramen are not brought here by the Russian producers. Our American cameramen have the happy faculty of being able to thoroughly understand the wants of any type of producers, and can photograph the mood of the Russian story just as readily as the American. Right now John Mescall, A.S.C., is handling the photography on "The Girl from Leningrad," which has Russians producing, directing and acting in the film. Director Fedor Ozep is enthusiastic about Mescall. "No cameraman in Russia ever grasped my ideas any better than Johnny," he told this writer.





Barbara Stanwyck in scene from "Lady of Burlesque."



Burlesque

In Swing

WITH 98 per cent of the scenes for Hunt Stromberg's "Lady of Burlesque" interior shots within a theater, and most of the principal players working in most of the scenes, John LeRoy Johnston, Stromberg publicist, watched still photography with an eagle eye.

Since most of the backgrounds were static, Johnston insisted that still photographers James Doolittle and Fred Parrish keep production stills active, unposed and full of swing. As a result the final set of production stills contained more 4x5 grab shots than 8x10 posed ones. Even a few Ikon 2x2½ negatives made their way into the set of action "selling" stills. Nearly all the stills used in the advertisements for this motion picture were the action shots.

Johnston for years has contended that still photographers should shoot more action shots of the outmoded posed variety. An advertising artist himself, before he entered the film studio publicity field, Johnston knows what is needed for good selling art. As a matter of fact, he maintains that among the amateurs

the best pictures they make are also action.

The five photographs shown on these two pages were shot by Doolittle and Parrish during the filming of "Lady of Burlesque," and all are action. All have life and sparkle which could not be obtained in posed shots.

Upper left on this page is shot of Pinky Lee, Michael O'Shea and Barbara Stanwyck doing a snappy dance routine. It was a Parrish shot from floor line.

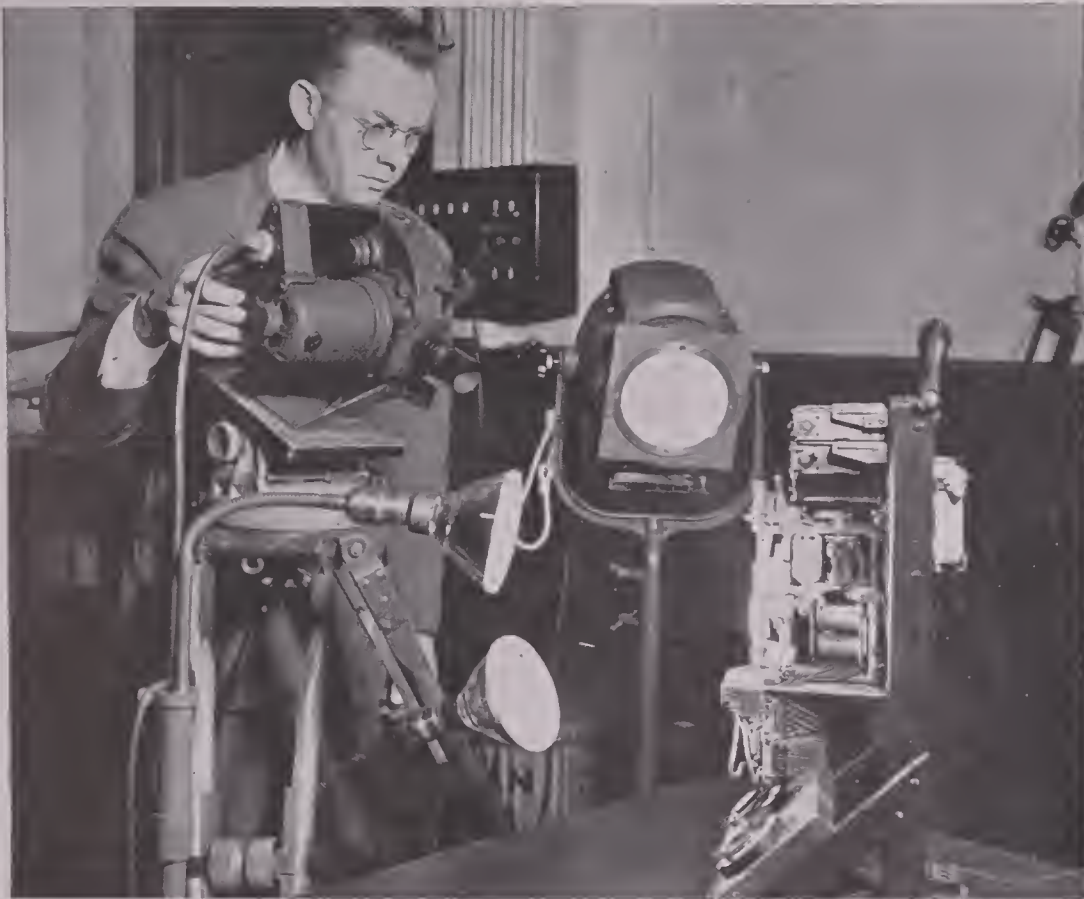
Lower right is shot of Miss Stanwyck fighting with a policewoman. It was made by Doolittle.

Center right, Miss Stanwyck concludes a comedy blackout called the "pickle persuader," with a slap that took O'Shea off his feet. It was made by Doolittle.

Upper right shows Gerald Mohr in the midst of a little fistic action that could not be obtained by a pose. Doolittle made it.

On page 290 is Miss Stanwyck dancing to the tune of "Take It Off the E String, Play It on the G String," a highlight of the film.





Left, camera in operation.
Above, Fig. 4.



Fig. 3.

The New Fastax High Speed Camera

By C. L. STRONG

OUT of a desire to obtain better performance of telephone equipment has come a new high-speed motion picture camera, capable of speeds up to 8,000 frames per second. Designed by Bell Telephone Laboratories in New York and manufactured by Western Electric, the new camera has already found a number of applications among war contractors whose engineering problems include the design of fast moving parts or the analysis of high speed action.

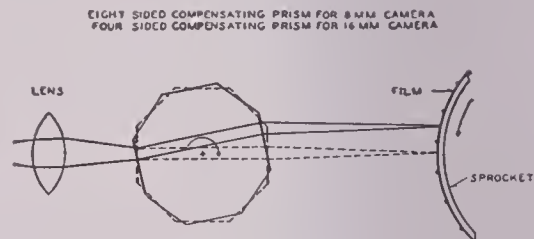
The camera, which has been given the name "Fastax," is the result of many years' search for a high speed analytic tool for the engineer. Early attempts with non-intermittent films drives (the intermittent movement is limited to speeds of about 250 frames per second) resulted in the well-known Eastman-ERPI camera, capable of recording about 2,500 frames per second. Simply designed, the camera was well suited for the detailed study of mechanical cycles. Timing of motion in the subject could be determined to the thousandth part of a second from the picture of the special Western Electric split-second clock

photographed on the edge of each frame.

The top speed of the Eastman-ERPI camera, however, was still too slow for many studies the telephone engineers wished to undertake. For example, they wished to find out why a certain type of electrical relay used in telephone circuits developed poor contact conditions resulting in improper circuit operation. Again, there were such fast moving operations as the dial central office switching devices, movements so rapid that it is next to impossible to see by visual examination just what is happening during the switching cycle.

The result of the search of these engineers for a camera capable of sufficiently high speeds to study these and similar problems is the Fastax. Rugged, small and compact, complete in a single case, the Fastax has proved itself invaluable as an aid to telephone research.

The camera does not look too dissimilar to a conventional motion picture camera. Two models are available which make pictures respectively of the standard 8mm and 16mm sizes. In each model either 16mm or the so-called "double-eight" film may be used. The film comes



Optical System Schematic
Fig. 5

off the 100-foot supply reel at the top (Fig. 4), under an idler, around the 20-tooth driving sprocket, and on to the take-up reel. The lens is a standard 2", F/2.0 cine lens in screw mount. Framing and focusing are accomplished by a prismatic finder, eliminating parallax by picking up the image at the focal plane through a hole in the sprocket; the image is seen erect and correct from left to right on a ground glass screen at the rear of the camera.

The rotary shutter of the conventional motion picture camera is missing in the Fastax. In its place, between the lens and the film plane, is a four or eight-sided glass prism, with opposing faces parallel; an exposure slit is provided ahead of and behind the prism. The prism rotates at a high rate of speed (60,000 r.p.m. while taking pictures at top speed) and acts both to provide a steady image on the fast moving film and to perform the functions of a shutter. Figure 5 illustrates how this is done: the light rays picked up by the lens are focused on the film surface as it rests on the face of the sprocket; when



Fig. 2. The Fastax camera set up for photographing the vocal cords. The light beam is directed by the large mirror into the mouth, and then directed down the throat to the larynx by a small laryngeal mirror held near the soft palate. The camera shoots through the hole in the center of the large mirror and down onto the vocal cords by means of the laryngeal mirror.

the prism is at rest the image is projected along the dotted lines. However, as the prism rotates in synchronism with the film sprocket the image is displaced by the refraction and rotation of the prism so that it travels in step with the film across the exposure slit. As soon as the prism has rotated to the point where the light rays might strike two adjoining prism faces, the prism housing performs the functions of a barrel shutter, blocking the light from the film and so forming the frame line.

The view finder is attached to the door of the camera as seen in Fig. 3. One of the two prisms of this finder (Fig. 4) fits inside the sprocket behind the viewing hole in the sprocket's rim. A microscope objective in the finder tube is focused through the two prisms directly on to the film plane. A light trap, operated by an external lever, prevents light from the finder from fogging the film while the camera is in operation.

Film travel in the Fastax reaches the amazing speed of seventy miles per hour while the camera is running at its highest taking rate. The speed of the camera is governed by the voltage applied to the two motors and ranges to as slow as 150 frames per second; the one hundred foot load of film lasts from one-and-a-half seconds to twenty-five seconds, depending on the camera speed. To more evenly distribute the strain on the sprocket holes, double-perforated film is used. In the 16mm camera, which is equipped with a four-sided prism the frames are of the standard 16 millimeter size. In the 8mm camera, which has an

eight-sided prism, the frame size is cut to one-quarter the larger size; a strip is exposed down one side of the film, and the film is reversed and exposed down the other side, exactly as in standard double-eight millimeter amateur cameras. Film travel and prism rotation speeds are identical for 16 millimeter images at 4,000 frames per second and for Double-Eight images at 8,000 frames per second, the increase in frame speed in the smaller picture being supplied by the larger number of prism faces. The difference in size of the faces of the two prisms also causes a change in exposure; duration of exposure at maximum camera speed with the four-sided (16mm) prism is about 83 millionths of a second, while the eight-sided (8mm) prism is about 33 millionths of a second.

In order to take fully illuminated pictures with available lenses and Super XX film when exposures are measured in such minute fractions of a second, it is necessary that light of extreme intensity be employed. However, by keeping the photographed area to a small size the focused, overvolted filaments of a few 150-watt show window spotlights, having the sealed-beam reflector, are sufficient for full exposure at 8,000 picture-per-second speeds. It is interesting to note that natural outdoor lighting is too weak for speeds above 2,000 frames per second.

The versatility of the Fastax has enabled it to be used in many unusual applications. Since it does not depend upon the gaseous discharge lamp for



Fig. 6. A knowledge of the fundamentals of speech and hearing is important to designers of telephone apparatus. These pictures show the vocal cords vibrating at low frequency.



illumination Kodachrome has been used successfully; notable are the natural color high speed pictures of the production of speech by the vocal cords. Also, polarized light has been used in some

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Using "Strobo-Sync"

By EDWARD J. KINGSBURY, Jr.

WHEN amateurs accompany their films with music on records, it is generally stressed that each sequence be accompanied by music that matches its mood and is consistent with the type of film and other selections. Less is said about timing them so that a selection will begin and end with the fade-in and fade-out of the sequence, although the music fits the picture far more effectively in this way. When music is faded out at random without reaching a climax, a good effect is lost, to say nothing of the injustice to the composer.

One method of matching the running time of a sequence to the playing time of its accompanying selection is to vary the speed of the projector. Suppose that a particular selection is a few seconds longer than the sequence it accompanies. By a slight reduction of the speed of the projector the sequence can be stretched so that it fades out at the same moment that the last chord of the music is played.

Likewise if the selection is too short, the speed can be increased to reduce the running time of the film and thus avoid having several seconds of silence. These different speeds can be synchronized with the music by an adaptation of the "strobo-sync" method discussed in recent issues of THE AMERICAN CINEMATOGRAPHER. Although this method was designed originally to synchronize special sound-on-disc accompaniment, the set-up, illustrated in Figure 1, is the same in both cases.

With sound-on-film the only way to match a sequence to a given recording is to add or remove film before it is combined with the sound track. Amateurs can use this method with their silent films, but generally it is difficult to add footage and often undesirable to remove it from an edited film. If the film were edited to fit a particular selection, it would probably have to be re-edited if a better selection were substituted. This method of varying the speed of silent projectors is especially valuable with purchased subjects and with dramatic films, which are usually difficult to re-edit.

This method is actually less difficult than the use of one speed, because each cue comes from the end of the preceding selection and not from a particular point on the film that must be noted. Likewise experience has shown that with a fairly good library of records from which to choose, the necessary variations in projector speed are so slight that they are seldom, if ever, perceptible to the audience. Extreme variations from the normal speed are undesirable.

Two formulas are quite useful in figuring the required number of dots (or bands or sectors as the case may be) on the stroboscopic disc. To synchronize a particular film at the approximate speed desired, we must know the relationship between the number of dots and the speed of the projector. Then when we

have the running time of the sequence at this speed and the playing time of the music, we must figure the number of dots for the speed which will make them equal.

The following symbols will be used:

- B Number of blades on the shutter
- D Number of dots on the disc
- t Time of sequence (seconds)
- v Projector speed (frames/second)
- m subscript With music
- s subscript Silent

The relationship between the number of dots and the projector speed is based on the fact that if the dots are to appear to stand still, the number of dots must equal the number of light flashes during one revolution of the disc, or

$$D = \frac{\text{light flashes}}{\text{revolutions}}$$

Using a time of one minute for ease in figuring,

$$D = \frac{\text{light flashes per minute}}{\text{revolutions per minute}}$$

The number of light flashes per second is, of course, the product of the speed of projector in frames per second and the number of blades on the shutter. The speed of the turntable on which the disc is placed is 78 rpm, so

$$D = \frac{60 Bv}{78} = \frac{10}{13} Bv$$

or
$$v = 1.3 \frac{D}{B}$$

The relationship between the time and the number of dots is fairly obvious—their product is a constant. The proof is based on this elemental formula:

$$\text{Speed} = \frac{\text{Length}}{\text{Time}}$$

Since the length of sequence is constant, Length = vt = constant

But from the first formula, D = v x constant

So Dt = constant

or $D_s t_s = D_m t_m$

The figures for the first formula are tabulated in Figure 2; but no tabulation is made for the second formula, since it is easier to use a slide rule for each individual case.

A stroboscopic disc for each speed can be made by tracing on a blank card the outline of a gear with the proper number of teeth and then making large dots in this outline. For general use, however, it is easier if several consecutive dots are combined on one disc, the dots being of contrasting colors or types (clear, solid, shaded, or with sectors of different sizes). For quick identification the key can be entered on the music cue sheet as well as on the center of the disc itself.

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Aces of the Camera

XXX:

Lee Garmes, A.S.C.

By HAL HALL

IT might well be said that Lee Garmes, A.S.C., is a man who refuses to be satisfied with success. He believes you are going backward if you are not moving forward. To him there is no such thing as standing still. That, undoubtedly, is why he has become one of the greatest directors of photography in the business.

Garmes was born in Peoria, Ill., in 1893. His was an uneventful life until his parents moved to Oakland, California, in 1906, just in time to land them in the midst of the disastrous San Francisco earthquake and fire. The family immediately moved right out of the state, going to Denver, Colorado.

Garmes was always intensely interested in motion pictures, attending every possible picture and reading everything available on the subject. His interest was so intense that in 1915, when he had finished school in Denver, he persuaded his family to move with him to Hollywood, so he could try for a job in films.

Shortly after arriving in Hollywood young Garmes learned through a friend that a job was open at the Thomas Ince Studios. He dashed out, and after being stalled along for a time, finally got into the studio and talked himself into the job as property-boy and all-round handyman. Garmes was quick to make friends, and soon caught the eye of cameraman John Leezer who started teaching him the art of photography. When Leezer later moved to another lot to photograph Dorothy Gish and Richard Barthelmess he took Garmes along as his assistant.

Here Director Elmer Clifton spotted him as directorial material and tried to persuade him to become an assistant director. Garmes finally decided to stick to the camera, and after several years as an assistant cameraman was given the job of first cameraman on a series of Gale Henry 2-reel comedies. Following these he photographed a full length picture with moderate success.

Then came the turn that led Garmes to cinematographic fame; and also brought fame to Director Mal St. Clair and to Adolph Menjou. He was assigned to photograph a film called "The Grand Duchess and the Waiter." The story was considered more or less of a lemon, and Menjou was considered a second-rate actor because he had "bags" under his

eyes. Young Garmes started experimenting on eliminating those "bags" with lights, and in so doing became the first cameramen in pictures to use mazda bulbs instead of carbons. He used two mazda bulbs with empty tomato cans for reflectors, and to the amazement of everybody, he wiped out the dark splotches the bags had always made on Menjou's face. When he saw that this worked he rigged up a lot more mazda bulbs, hanging them about on the set. The result was that he succeeded in making a picture with a wide range of tone values instead of the sharp blacks and whites of arc-lighted pictures. It can truthfully be said that by introducing the mazda lights in this film Garmes made one of the most important contributions ever developed in the field of motion picture photography.

When "The Grand Duchess and the Waiter" was finished studio executives thought the lighting too radical, and twice almost shelved the picture. Finally they released it during Christmas week when business was usually slack, and—to their surprise, the film drew capacity crowds and became one of the box office sensations of the year. Garmes, Menjou and St. Clair became famous overnight.

From then on Garmes had the pick of the pictures. He went to France and later to Algiers for Rex Ingram to make the first "Garden of Allah." He followed this with picture after picture in rapid succession, and continued experimenting with mazda lights. In one picture on which the budget for lighting was set at \$12,000 Garmes cut the cost to only \$3,000 by his home-made mazda light contraptions. When the Academy of Motion Picture Arts and Sciences was formed in 1927 one of the first things the technical division of the Academy did was to advise all cameramen to visit Garmes on the set in order to study his methods of using mazda lights.

Besides pioneering in lighting, Garmes



was likewise one of the first cameramen to use panchromatic film. Despite the objections of his directors, Garmes managed to "sneak" a lot of shots in on the new panchromatic film, and then when the directors commented upon the fine quality of those scenes he would tell them the truth, and they would then accept panchromatic film.

In 1932 Garmes reached absolute tops in his photographic profession by being given the Academy Award for his photography on "Shanghai Express." Besides this distinction, Garmes by then was considered one of the highest paid cameramen in the industry, with a weekly salary reported in the four-figure class.

But this man from Peoria wasn't satisfied. He would not rest on his photographic laurels. He wanted to direct pictures, so in 1933 officials at the Fox Studios gave him a contract as a director. This almost turned out to be the ruination of Garmes' career, for on the very day he started his contract the famous cameramen's strike broke in Hollywood. The studio officials suggested that Garmes photograph his own pictures. This he firmly refused to do. For months Garmes came to the studio daily, read story after story, received his weekly check but—was given no directing assignment. Finally Garmes' sincerity and the fact he was in the right was recognized by the studio and he was again back in favor.

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A.S.C. on Parade

Aces of the Camera

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THE other night at an A.S.C. meeting two directors of photography were talking. "This last year," said one of them, "I made sixteen pictures—twelve of them features ranging all the way from top-budget 'specials' to ten-day quickies." Said the other one, "Last year I made about three and a half features, and put in just as much work and worry as I want to—maybe a little more."

It seems to us that there would be a lot gained if a happy medium could be found between these two extremes. Three or four really big pictures probably represent as much in earning-time, work and worry for a director of photography as do half-a-dozen smaller "quickies" . . . and we've never seen any logic in assigning a major-studio feature cameraman to a short merely to get a few days' extra work out of him while he's on payroll.

Despite the increasing number of cinematographers going into the Armed Forces, the industry still has a generous over-supply of trained directors of photography. Why not, therefore, spread the industry's production out more equitably between them? Cinematographers should support a move in this direction, if only for the selfish aim of being able to give their pictures better (and therefore potentially higher-priced) photography because they come to each picture physically and mentally fresher. Producers should support it for this reason, and because it would enable them to conserve their trained manpower not only against the ceaseless drain by the Armed Forces, but against the overwork which has killed off so many invaluable cinematographers of late.

The following members of the A. S. C. are directing photography on the following pictures.

At Columbia Studios: Rudolph Mate, "Cover Girl;" Philip Tannura, "There's Something About a Soldier;" Franz Planer, "Tropicana;" L. W. O'Connell, "Doughboys in Ireland;" Ernest Miller, "Is Everybody Happy?"

At Metro - Goldwyn - Mayer Studios: Karl Freund, "A Guy Named Joe;" Hal Rosson, "America;" William Daniels, "The Heavenly Body;" George Folsey, "The White Cliffs of Dover;" Robert Surtees, "Meet the People;" Len Smith, "Broadway Rhythm;" Charles Lawton, "See Here, Private Hargrove;" Les White, "Andy Hardy's Blonde Trouble."

At Paramount Studios: George Barnes, "Frenchman's Creek;" John Seitz, "Hail the Conquering Hero;" Victor Milner, "The Story of Dr. Wassell;" Henry Sharpe, "Ministry of Fear;" Charles Lang, "Standing Room Only;" Fred Jackman, Jr., "Timber Queen."

At RKO Studios: Tony Guadio, "Revenge;" Jack McKenzie, "Gildersleeve on

Broadway;" Nick Musuraca, "An American Story;" Frank Redman, "Government Girl;" Russell Metty, "Around the World."

At Samuel Goldwyn Studios: James Wong Howe, "The North Star;" Ray Rennahan, "Up in Arms."

United Artists: John Mescal, "The Girl From Leningrad;" Lee Garmes, "Jack London;" Russell Harlan, "Texas Masquerader."

At 20th Century-Fox Studios: Charles Clarke, "Guadalcanal Diary;" Joseph LaShelle, "Happy Land;" Ernest Palmer, "Pin-Up Girl;" Leon Shamroy, "Buffalo Bill."

At Universal Studios: Charles Van Enger, "Crazy House;" George Robinson, "Ali Baba and the Forty Thieves;" Elwood Bredell, "His Butler's Sister;" Hal Mohr, "Man of the Family;" William Alton, "The Professor Goes Wild."

At Warner Bros. Studios: Carl Guthrie, "In Our Time;" Merritt Gerstead, "Conflict;" Arthur Edeson, "Shine on Harvest Moon."

Lucky Karl Struss, A.S.C., is an internationally famed still photopictorialist. Preparing for Paramount's "And The Angels Sing," he and stillman "Whitey" Schaefer shot all the costume and make-up tests in stills, rather than movies.

John F. Seitz, A.S.C., and his assistant, Harlowe Stengel, double in brass as technical advisers. Seems Erich von Stroheim, playing Field-Marshal Rommel in "Five Graves to Cairo," learned the real Rommel was an enthusiastic minicamerist, so "Von" added a Leica to his uniform accessories. And of course he had to have expert advice on how to handle it authentically!

Stanley Cortez, A.S.C., after more than a year on loan, at last gets a chance to work for his own boss, D. O. Selznick, directing the photography of Shirley Temple's "Since You Went Away." And thanks, Stan, for that highly complimentary letter about the May issue. We appreciate it sincerely.

Leon Shamroy, A.S.C., with "Claudia" successfully finished, slipping off to his ranch for a well-earned rest.

Could anybody identify the well-known cinematographer who, so rumor has it, always gets too seasick to go on any floating locations, yet spends his week-ends a-yachting—charmingly accompanied—?

Johnny Arnold, A.S.C., and Emery Huse, A.S.C., busy teaching a class of Leatherneck cameramen, with Capt. Henry Freulich, A.S.C., U.S.M.C., helping keep the situation well in hand.

However, at this point Ben Hecht and Charles McArthur decided to make pictures in New York. They asked David O. Selznick to find them a man who would be both a good cameraman and a director. Selznick, who had never met Garmes, recommended him. Garmes secured his release from Fox and went to New York. There Garmes photographed, directed, edited and turned out three films, two of which were big box office successes—"Crime Without Passion" and "The Scoundrel."

Meanwhile Garmes had met Alexander Korda and had told him of all the original things he wanted to do in films, but which the studio heads were afraid of. So, just as Garmes finished his third picture for Hecht and McArthur, Korda cabled him from England to go over with him and do all the things he had talked about. He accepted!

For three and a half years he worked in England as cameraman and director. During this period he helped advance British films by introducing various American techniques. But all was not a bed of roses for ambitious Mr. Garmes. He had an opportunity in England to do "Wings of the Morning," one of the biggest technicolor pictures ever made in England, but had to give it up because of his contract with Hecht and McArthur. They called him back to New York to make a picture. He sat in New York and drew salary but the picture never was made.

And then came a bitter disappointment. Garmes was signed to direct "Pygmalion." At the last minute George Bernard Shaw learned he was not a British subject and refused to let him work on the picture. Garmes drew his salary for directing the film, but spent the time touring Italy and Southern France.

The final act in the British interlude came when Garmes formed his own producing company in England. He had everything lined up when the bottom dropped out of the British financial market and his prospective backers had to withdraw.

Although Garmes hoped to remain in England permanently, had even bought a home there, he was lured back to Hollywood by an offer to photograph "Gone With the Wind." He returned, lensed the picture for several weeks until a studio shakeup took place which saw a new director, new cameraman and practically entire new technical crew on the film.

Unattached again, he began toying with the idea of becoming an independent producer. With screen writer Adele Comandini as his partner, he made a picture for release through RKO. The venture was not a financial success, so

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Among The Movie Clubs

L. A. 8 mm. Club

JULY meeting of the Los Angeles 8 mm. Club was held the evening of July 13 at the Bell & Howell auditorium. It was "Contest Night," and brought forth some excellent entries.

Prize winners were: first prize, "Billy's Big Adventure," an amazing film by Fred Evans, based on his young son's first hair cut; second prize, "Studio Programs and Camera Cruises," by Irwin Dietze; third prize, "Nitwit News," by W. D. Garlock.

Rating honorable mention were "Ice Capades," by Stanley Clemens; "The Mischa Auer Radio Hour," by C. W. Wade, Jr.; and "Los Angeles Floods," by Dr. R. S. Petter. The program concluded with screening of two guest's films, "Life in the Ozarks," by Bruce Barnhill, and "A Victory Garden or Where's the Sloan's Liniment," by Mr. and Mrs. Earl Holbrook.

Utah Cine Arts Club

THE Utah Cine Arts Club sponsored a special showing, on the south steps of the State Capitol Building in Salt Lake City, of club films on the night of July 14.

Purpose of the showing was to acquaint the public, especially newcomers to the State and men in uniform, with the scenic and other attractions the State of Utah has to offer. All films shown were made by members of the club. The program lasted one hour and forty-five minutes and was acclaimed a real success.

Featuring the showing were the following 8 mm. pictures:

"Cheating the Dentist," by Al Londema; "Mesa Verde," by Virginia Smith; "Roamin' Holiday," by Dr. C. Elmer Barrett; "Rodger," by F. K. Fullmer; "Some Western Color," by Elmo H. Lund; "Dog Daze," by George Brignand; "Canyon Trails," by Bishop C. E. Schank; and "The Utah Trail," by Mr. and Mrs. Al Morton.

Frisco Cinema Club

INTERESTING indeed was the July meeting of the Cinema Club of San Francisco, which was held the evening of July 20. The meeting was held in the Women's City Club, and was preceded by a pre-meeting dinner.

Dr. J. Allyn Thatcher, chairman of the Club's education program, gave an interesting demonstration of making disc recordings which combine narrative and musical backgrounds.

Mr. A. O. Olson thrilled the gathering with a demonstration of his apparatus for recording sound on wire, which also synchronizes the sound to 8 mm. film. He then presented an excellent 8 mm. Kodachrome film, "Mountain To Seashore."

Southern Cinema Club

STARTING with the July meeting, the Southern Cinema Club instituted a policy of holding meetings at members' homes. First of these was on Sunday, July 25, at the home of Ben Gale.

The meeting was divided into two sessions, afternoon and evening. Members brought their lunches. Afternoon was a technical session, with some picture filming. In the evening uncut films were displayed in a special contest being conducted by the club.

PLEASE NOTE

WE are always pleased to print news about the activities of the various Amateur Cinema Clubs, and from letters that have come to the editor's desk, we know that amateurs throughout the country like to read about what the other clubs are doing. So, you publicity directors of the many clubs, why not get busy and send in more news to this magazine?

We can use pictures, too, of your gatherings and activities. If you are shooting a film, send us photos of your group in action. If some club member develops a new idea send that along for the benefit of the members of other clubs. Many times some particular activity of a club is worthy of a special feature story. If you have a good writer in the club, have him do a feature and send it to us with photographs, and we will be happy to print it. Remember, this is your magazine, so take advantage of it.

The Editor.

The New Fastax High Speed Camera

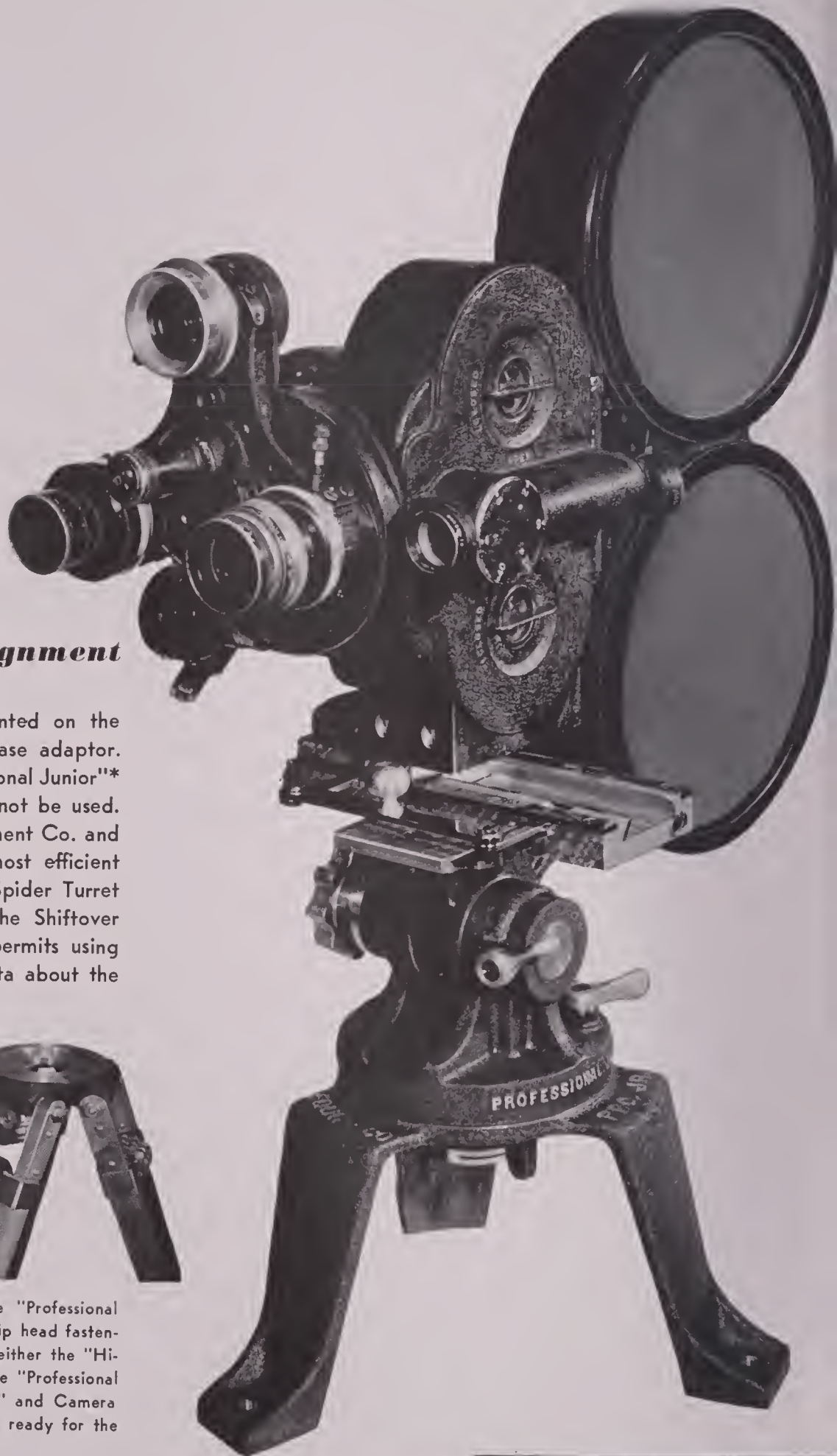
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tests, particularly in studying the stress and impact conditions in transparent materials. It is also possible to take high-speed pictures of self-luminous objects, such as the filaments of incandescent lamps under test.

Many of the current applications of the Fastax are on highly restricted projects and naturally cannot be discussed at this time. But high speed analysis is here to stay and its application to tomorrow's research will play a big part in making the mechanical servants of the post-war civilian more efficient, less costly, and more widely distributed.



"PROFESSIO TRIPOD WITH REMOV



"Hi-Hat" and Shiftover Alignment Gauge

★ Illustrated is the B & H Eyemo camera mounted on the Shiftover Alignment Gauge and "Hi-Hat" low-base adaptor. The "Hi-Hat" low-base adaptor takes the "Professional Junior"* tripod head for setups where the tripod legs cannot be used. The Shiftover device (designed by Camera Equipment Co. and patent applied for), is the finest, lightest and most efficient available for parallax correction for the Eyemo Spider Turret prismatic focusing type camera. The male of the Shiftover attaches to the camera base permanently and permits using the regular camera handle if desired. Further data about the "Hi-Hat" and Shiftover will be sent upon request.



ABOVE, LEFT—the "Hi-Hat" ready for the friction type "Professional Junior" tripod head to be affixed. Under it is the finger-grip head fastening nut that firmly holds the removable tripod head onto either the "Hi-Hat" or tripod legs base. CENTER—the new friction type "Professional Junior" removable tripod head that fits both the "Hi-Hat" and Camera Equipment Company tripod. RIGHT—the tripod legs base ready for the friction type head to be affixed.

AL JUNIOR"*

BLE HEAD AND "HI-HAT"

The New Removable Head "Professional Junior"* Tripod

★ The new removable head feature adds great flexibility to the versatile "Professional Junior"* Tripod. It is now possible to easily remove the friction type head from the tripod legs base by simply unscrewing a finger-grip head fastening nut. The tripod head can then be mounted on a "Hi-Hat" low-base adaptor for low setups.

The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this superfine tripod. The top-plate can be set for 16mm E.K. Cine Special, with or without motor; 35mm DeVry and B & H Eyemo (with motor), and with or without alignment gauge. The tripod head is unconditionally guaranteed 5 years. More data about the "Professional Junior"* Tripod With Removable Head is contained in literature that will be sent upon request.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading Newsreel companies and 16 mm and 33 mm motion picture producers.

* Patent No. 2318910

* Patent No. 2318910



Above — Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface. Further particulars on request.

C. ZUCKER

EQUIPMENT CO.
NEW YORK CITY

The Floral Spectrum

By F. M. HIRST

A CAR rambling over the hard packed dirt roads of Cape Breton came slowly to a stop. It seemed as if some strange power had prevented it from going on. As two people stepped from the car, they paused to breathe in the heavily scented air, for they had come upon one of nature's glorious flower gardens. Wild flowers, in never ending profusion, covered the hillsides and carpeted the fields in glowing colors. Here, indeed, was a paradise for the wild flower lover and manna for the camera enthusiast. It was irresistible! Until then the idea of taking movies of wild flowers was far from our thoughts, but soon we had enthusiastically exposed two rolls of film.

That was six years ago, and since then we have been shooting wild flowers at every opportunity. Each new trip brings to light different varieties of flowers, but this is getting ahead of our story.

While motoring through Cape Breton, our attention was attracted to deep yellow flowers lining both sides of the road and forming a golden trail, ever leading us onward. At first we thought it was goldenrod but it was too early in the season for this flower. Upon closer examination we found the plants to be about two feet tall and the flowers about the size of wild asters, growing in heavy clusters. They are richer in hue than the goldenrod—more of an orangey yellow. There was no one to ask its name as Cape Breton is very thinly populated, but some time later we stopped and inquired of a farmer. "It is known only as stinkin' Willie." This endearing appellation did not satisfy us and made us more determined than ever to know its true name. Days later we came upon an old monastery, founded early in the 17th century by a band of monks from Europe. It was abandoned more than a century ago by the few remaining monks who had survived the hardships and disease which had wiped out most of their brave brethren. The monks who were re-building the monastery at the time of our visit had recently arrived from Germany. The Father Friar in charge was the only one of the group who could speak English, and it was from him that we learned the name of the flower. He told us that it was called senecio, and was foreign to Cape Breton. No one could recall how it came there. It seems that cattle will not eat it while it is growing, but if it should

be accidentally cut with the hay, then it poisons the cattle. However, sheep can eat it while it is growing, with no harmful effects.

It was these yellow flowers that suggested "Golden Trail" as a title for our film of Cape Breton. Long shots of golden fields and close-ups against the sky and the blue of the lakes enhanced the richness of this golden senecio.

Another flower of Cape Breton is the thistle, identical to that which we saw in Scotland. Scotland has left an indelible mark in this new land. Most of the population have a marked Scottish accent, and I suspect that it was they who brought the thistle as a gentle reminder of their homeland. It has a large fragrant flower, rich in purple hue, with bold prickly leaves. We couldn't resist a shot of this for the flower we chose had a butterfly resting upon it. The best angle for picturing the thistle is downward in order to bring out the true color against its green background. To shoot such a flower against the sky would be a mistake, for the blue of the sky would absorb all the blue out of the purple, leaving it washy in tone. A bee on another thistle next claimed our attention. The camera was placed in an Eastman titler and the title easel placed over the flower without disturbing the bee. As a result, one thistle and a busy bee, sharp in every detail, fills the screen. Small titlers are excellent for such close-up work. If I had stopped to use a telephoto lense, perhaps I would have lost the bee and missed centering the flower, due to paralax.

Not far away large masses of bouncing bet were dancing in the breeze. It is easy to see why it was so named, for these heavy clusters of rose-pink flowers literally bounce up and down. They are also known as "soapwort." They are spicy fragrant and the juice in the stem is sticky and suds in water. Here again we took a medium shot and used the titler for a close-up.

At our feet we found the bell flower. These bell shaped purple flowers have five lobes and grow on one side of the stem. They are small flowers and require the use of the titler in photographing them.

Our first impulse on seeing a field of wild roses was to shoot the whole field. The result is very disappointing, for you see nothing but a mass of green covered by pink dots. A medium shot of one bush followed by a close-up is far

better. To have one full blown wild rose with its yellow center fill the screen, will bring exclamations of delight from your audience.

Bunch berries seemed to spread a scarlet mantle over the hillsides of Cape Breton. These bunches of vivid scarlet remind one of holly at Christmas time. They grow in heavy clusters close to the ground, each cluster surrounded by its own symmetrically grouped leaves. If you are partial to scarlet, here is something that will set your screen aflame. Don't forget to use your small titler.

Another showy plant is the fire weed. In some sections this beautiful orchid pink hue colors the landscape as far as the eye can see. This is one scene that calls for a long shot, but don't neglect your medium shot and close-up for the final punch.

Most people would pass the turtle head by, but to see a close-up on the screen is to really appreciate its beauty. It is of the figwort family and has sharp-toothed leaves and white clustered flowers which open in stages, starting at the bottom with white and gradually tapering off in green buds at the top.

As we were driving by a lake a frightened crane rose from the water. Hoping for a shot we stopped the car and walked to the water's edge. Our quarry never returned, but we were rewarded by shots of lovely water lilies. Close by we discovered an orchid growing in a secluded nook, and our camera soon captured the delicate orchid tints of this graceful flower. I had heard that there were orchids in Cape Breton, but I couldn't picture them growing so far away from the tropics.

On several occasions I have been fortunate to find flowers growing by a still pool. To shoot at a slightly downward angle from the opposite side of the pool gives a delightfully mysterious effect. Eliminate the sky and show the pool with its colorful reflections. The simple procedure of dropping a pebble in the center of the pool, after the camera starts, adds the needed animation and the surprise element.

The common milk weed is a flower that seems to be passed by more than any other flower. I suppose that it is so common that most people ignore it. Its flowers are more like berries growing in clusters with a rosy hue. It photo-

(Continued on Page 302)

WILLIAM STULL, A.S.C.

THE STAFF
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REMARKS ON CINE SPEEDS FOR AMATEURS

By G. EVERETT MARSH

AFTER the cine amateur has become on familiar terms with his camera and can operate it with much the same ease as his still camera, he may aspire to shooting races, to slow motion, to animation, or to lapse time photography. An understanding of the principles underlying these adaptations is essential and they are herewith briefly presented.

We have to deal with three cine speeds, namely:—

1. Normal speed, 16 frames per second, (16 f.p.s.). This is the usual amateur camera speed and it is the amateur projector speed invariably. In this case the speed of action on the screen (screen-speed) is the same as the speed of the subject or object, (object-speed).

2. Superspeed, a speed greater than 16 f.p.s. Since the projector speed is constant, the screen-speed will be less than the object-speed, and we have what is called "slow-motion."

3. Subspeed, a speed less than 16 f.p.s. The screen then portrays a scene taking place at a rate above the natural or normal one. The projector speed, designated by S_p , will be assumed to be constant at all times. If it is above or below the normal value of 16 f.p.s., the action on the screen will be unnatural and when it drops a point or two, flicker arises. When the camera speed, S_c is equal to the projector speed, S_p , the screen speed, S_s , will be the same as the object speed, S_o . That is, when $S_c = S_p$, we have $S_s = S_o$, and the picture correctly presents the scene in the matter of rate of movement.

In the case of a rapidly moving scene, as a race of some sort, our interest is increased if the action is slowed down on the screen. The camera is operated at a speed greater than 16 f.p.s. and the screen speed is equal to $(S_o \times S_p / S_c)$, or $S_s = 16S_o / S_c$. Thus if the camera speed is 64 f.p.s., the action on the screen will be $(16S_o / 64)$, or $S_o / 4$, or $\frac{1}{4}$ as fast as the actual scene. The added interest that the shot provides is secured at the cost of extra film. The duration of transit of the film through the camera is here one-fourth of the usual time, and 100 feet of our beloved pan rushes madly from one spool to the other in a minute and a couple of seconds! By reason of this decreased time of camera operation, the need of accuracy in exposure is increased and a keener consideration of all photographic factors should be given.

To illustrate, let us assume that we are going to "slow motion" a high dive of two seconds duration. What should be the camera speed if the screening time is to be six seconds? From the relation, $S_c = 16 T_s / T_o$, where T_s , T_o are the durations of screening and performance respectively, we have $S_c = 16 \times 6 / 2 = 48$; that is, the camera speed should be 48 f.p.s.

If the camera speed is subnormal for slow moving events, the screen speed is equal to $S_o \times S_p / S_c$. As an example, and using the slowest speed that the ordinary camera has, a shot was made of a turtle race at 8 f.p.s. The screen speed is $S_o \times 16 / 8$, or $2S_o$, that is, twice the actual speed. For lower speeds special methods of camera control must ordinarily be used.

This last relation holds for lapse time photography, the filming of events that progress so slowly that they require long periods of time, from the cine standpoint, for their completion. The name "tachygraphy" (to write rapidly) has been suggested and used for this procedure, the opposite of slow motion. The following is an illustration: a rosebud requires 24 hours to open, let us assume, and we wish to show it on the screen as occurring in one minute. The number of frames comprising the shot is 16 times the duration of screening in seconds, or 16×60 , 960. Assuming the bud unfolds at a uniform rate throughout the 24 hours, the rate at which the frames are exposed is given by dividing the duration of scene in seconds by the number of frames. The duration is 24×60 , or 1,440 minutes; the camera speed is therefore $1,440 / 960 = 1.5$ minutes; or one frame every $1\frac{1}{2}$ minutes. Expressing this in general symbols, we have, since T_s , screen time, is 60, and T_o , object time, $24 \times 60 \times 60 = 84,400$, as the camera speed, $T_o / (16T_s)$, or $86,400 / 960 = 90$ seconds, as before.

In a problem of this kind the screening time is the controlling quantity and should be first settled on; the other variables can then be calculated. As is well-known, there is a particular and proper duration for the screening of a particular shot, the duration that evokes the maximum of entertainment value with no suggestion of tedium. This duration is the one to aim at and attain by adjusting the others to fit. A clear understanding of the simple principles expressed above will contribute to the success of your cine performances.

The Floral Spectrum

(Continued from Page 300)

graphs well and should be on the film of all who seek wild flower pictures. Return to it in the fall when its pod has burst open and you will be surprised at the beauty which you find there. Shoot it through your titler and you will be charmed with the result. It may seem, by this time, that I am harping unnecessarily about the use of a titler, but until you have used this instrument for this kind of work, you are missing a great deal. Try it on violets and you will see a richness of color and texture that is astonishing.

High on the slopes of Mt. Rainier, about 5500 feet above sea level, is a mountain meadow known as Paradise Valley, and covered with over 600 varieties of wild flowers. Here we find the lovely alpine lily with its white bell and yellow center, growing in profusion. It is about ten inches tall, and the best way to photograph it is to lie flat on the ground. A long shot to set the locale is desirable, but close-ups will bring out the full beauty of this charming flower.

Close by one will find the purple heather, the same variety as seen in Scotland. Here and there a little white heather mingles with the purple. Here, too, it is possible to photograph great expanses of blue lupine which is prevalent throughout the west. Use care in choosing your angle. A low angle is most desirable, shooting just over the top of the flowers. If you shoot it against the sky it will lose its color.

Indian paint brush or scarlet painted cup makes a fine show on Mt. Rainier. If one can stand the climb up to the snow line, this brilliant scarlet flower can be photographed growing within six feet of the snow. Choose a low angle and shoot with the glacier and blue sky as a background. The shot that seems to please most audiences is one that shows it actually growing close to the snow.

The dainty harebell, more commonly known as the bluebell, dances merrily on its thin stalk. It is easy to photograph. The Indian pipe, although a parasite, is an interesting little plant. It is all white, both flower and stem, and has odd little scales instead of leaves. The tiny flowers are bell shaped, usually growing singly at the end of each thick stem. Of course one need not go all the way to Mt. Rainier to photograph the wild carrot or Queen Anne's lace. It seems to grow everywhere. Its fine white lacy texture is brought out in all its delicate beauty when shot against a blue sky.

Moving eastward to Glacier National Park, one can photograph bear grass at its best. It is not generally known how it received its name, for bears will not touch it. Its stalks are sometimes cut down by ground squirrels for food and

(Continued on Page 304)

JUST RIGHT

WITH the emphasis on getting the most out of every foot of available film, it is a big help to know that one of the three Eastman negative films is just right for every shot—in the studio or on location, indoors or out. Eastman Kodak Company, Rochester, N. Y.

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when little light is available

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for backgrounds and general exterior work

EASTMAN NEGATIVE FILMS

The Floral Spectrum

(Continued from Page 302)

its long leaves are used by Indians for making baskets. This very showy flower is a delicate creamy yellow and grows five feet tall. It blooms profusely during the early part of July and is outstanding in any setting. It photographs well against the deep forest background or the distant glaciers.

At the end of June or the beginning of July, the alpine meadows on Mt. Clements are golden with glacier lilies. In any direction that one may look, nature has provided an interesting background for the photographer. One may shoot freely without fear, for good composition is on every hand. Don't hesitate to lie down amongst these fragrant flowers for close-ups. It is a spot that makes one reluctant to leave.

There is another lovely yellow flower to be found in Glacier Park, growing amongst rocks or in gravel. It grows close to the ground in heavy clusters and has a bluish green leaf. There was a belief among early prospectors that its presence indicated silver deposits. That is why it came to be known as the silver plant.

The wild geranium is plentiful here. Its flower is a light pinkish purple, growing singly or a few in clusters. It grows about as tall as the cultivated geranium and is very attractive. Horsemint is deeper in hue than the wild geranium and has a strong pleasant odor. Its flowers are very hairy, somewhat courser than the thistle and more open. The heavy clusters make a very colorful display. It grows about a foot tall and photographing at a slightly downward angle will bring out its full beauty.

The Blackfeet Indians use the cow parsnip or sacred rhubarb in some of their ceremonials. It is a white flower resembling Queen Anne's lace, but much bolder in appearance. Growing three to six feet high, its massive leaves support a heavy stem. It is very striking when photographed against a blue sky.

Throughout this vast area the brown-eyed susan grows in wild profusion. It is similar in appearance to its sister, the black-eyed susan, but has a rich brown center instead of black.

In the meadows at the base of Grinnel Glacier one can see the beautiful pink spiraea. Care must be taken not to overexpose this lovely flower, or it will register on the film as white. In the immediate vicinity the dainty moss rose is to be found growing close to the ground. Its brilliant yellow flower will add warmth to a wild flower film. Growing from the damp woody banks, the rose colored monkey flower adds cheer to its dark surroundings. A fast lense is required to capture the color of this forest-bound beauty.

Traveling further to the south we find one of America's most beautiful

wild flowers growing close to the geysers. It is the fringed gentian—official flower of Yellowstone National Park. This lovely violet blue flower should be shot at a slightly downward angle to bring out its true rich coloring and form. The sandy soil of the geyser basin makes an excellent color contrast as a background. It is claimed that there are 600 different species of wild flowers growing in Yellowstone National Park, enough to satisfy the desires of the most ardent wild flower lover.

The wild iris and Indian pink grow in marshy spots. One may get their feet wet making close-ups, but the result is worth the effort. The yellow stonecrop makes a showy picture. It grows in small clusters and has a rich orangey yellow hue.

If you give your horse his head, he is sure to go and munch on an elk thistle. This odd looking plant is entirely different from purple thistle. It grows on a straight prickly stem and the flower is mostly green in color, tipped with a very pale lavender, nearly white. Its oddness creates a place for it in any wild flower film.

One of the loveliest pictures that I ever saw was a greatly enlarged photograph of the oxeye daisy. It was not in color but it was very striking in its appeal. The angle was low, slightly above the height of the flower, bringing the full plant in close-up. It may have been taken on slightly sloping ground for the daisies extended as far as the eye could see. In the distant background a mountain rose majestically into a sky of fluffy clouds, without distracting from the close-up of the daisy. Mother nature provides many interesting backgrounds for her lovely flower gardens. We many not all be so fortunate as to find such a setting, but with a little care in the choice of angles, all our flower shots can be enhanced.

A film of wild flowers, although lovely in itself, requires a theme to lift it from the monotony of one flower shot after another. There are several methods to be pursued in order to give interesting treatment to such pictures. One might use the theme of the seasons as a motive, showing winter as the opening sequence, and, as the snows gradually melt, lead into the first greens of spring and its budding flowers. Continue through the summer with all its brilliant flowers and end the picture with the milk weed pods and falling leaves.

Then there is the personal touch—children wandering down lanes and through fields, in search of wild flowers. The personal theme might incorporate a class in botany, showing the teacher explaining about the varieties of flowers, as they walk through the fields and woods.

Flora and fauna would make an interesting film. Shots of bird life and the smaller wild animals will add zest to wild flower pictures.

If one were really ambitious and cared for research, an interesting story

could be told of the use of certain wild flowers in the field of medicine. Our grandparents depended upon the roots of flowers and herbs to cure their ills, so why not revive this interesting topic on film?

Poets have always been inspired by the beauty of the wild flowers. What could be more appropriate than the use of poems as titles for a wild flower film?

It is never too late in the season to start a film on this interesting subject. Begin collecting your shots now—long shots, medium and close-up, particularly the latter, and a theme for uniting them into a complete whole will suggest itself to you.

"Any man that walks the mead,
In bud or blade, or bloom may find
According as his humours lead,
A meaning suited to his mind."

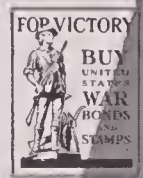
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Illumination On Walls

(Continued from Page 286)

I want the lens aperture to be $f:2.3$. So I use the meter at the position of the subject and adjust the lighting until the meter indicates $f:2.3$. Then I step back and have the lights on the wall adjusted until the scene balance appears just right visually, with the background brighter than the subject.

We are now ready to shoot, and have assurance that the camera will record the scene so as to give exactly the right subjective impression in the finished picture.

Sometimes a very bright background is encountered. One that will appear much *brighter* than the subject. (See Fig. 3.) The same visual reaction described above will occur, only to a greater degree.

In this case I simply follow the same procedure previously outlined, only I figure on a greater differential being required. So I arrange a full f -stop differential by using, for example, the No. 64 matte when 32-speed film is being used.

This procedure gives exactly the effect desired. It is scientifically correct because it causes the camera's eye, the lens aperture, to be adapted exactly as the human eye adapts itself for each different type of illumination balance on a scene.

FOR FILM WESTON 32 SPEED UNDER ARTIFICIAL LIGHT

Type of Scene

Matte

NORMAL—Background slightly darker than principal subject.....	No. 32
EFFECT—Background slightly lighter than principal subject.....	No. 40
EFFECT—Background moderately lighter than principal subject.....	No. 50
EFFECT—Background much lighter than principal subject.....	No. 64
EFFECT—Background very dark.....	No. 24

Sometimes I encounter a scene in which an unusually dark background is supplied. It may be a wall made up of dark wood panels. (See Fig. 4.) A mean proposition—but there it is, and I have to light it.

Well, first I consider how the eye adapts to the scene. The eye, in this case, although adapting primarily to the principal subject, still influenced to some degree by the very dark background. Such a background causes the eye to open its iris a little more than usual. The result is that the principal subject will appear subjectively *brighter* than usual.

Now to faithfully record this appearance with the camera I find it advisable to set up a differential as described above, only in the opposite direction. In this case, where I am using 32-speed film for example, I select a No. 24 matte for the meter. Then I measure the illumination at the position of the principal subject. If I want to use an $f:2.3$ lens aperture, I have the illumination on the subject brought up until the

meter indicates $f:2.3$. Then again I step back and have the illumination on the dark wall brought up until it gives visual balance. I do not mean by this that I over-light the dark wall until it appears as a light wall. A dark wall was desired and the result will be a dark wall. A typical case of effect-lighting. However the result in the camera will be an exact representation of the subjective visual effect desired.

Illumination on walls can be one of a cinematographer's greatest problems. However I have found that I can analyze each scene and consider how the eye will automatically adapt itself to the scene. Then I follow the indicated procedure of setting up a differential and selecting the appropriate matte for the Norwood meter.

By this simple method of using a matte for a higher than normal film-speed when I want the back-wall to appear *brighter* than the subject, or one of lower than normal speed when I want the background to appear *darker*, and then in either case taking my meter-reading in the normal way, from subject-position, and visually balancing the background-lighting to this standard, I do not have to give any more attention to lighting the background to produce the differential brightness-contrast I want between subject and background. The meter does that for me automatically, with no further thought on my part.

The accompanying table, set up for film of Weston 32 speed, is of assistance in selecting the correct matte. This system causes the camera lens aperture, in effect, to follow the action of the human eye which is always automatically right in this matter. The screen results of this method have been quite gratifying. END.

Aces of the Camera

(Continued from Page 296)

Garmes returned to photography. He photographed "Lydia" and "The Jungle Book" for Alexander Korda. And then did a number of films for 20th Century-Fox. Now he is under contract to Hunt Stromberg who has just loaned him to Samuel Bronston Productions to photograph "Jack London," the life story of that famous writer.

When the war is over, don't be surprised to see Garmes back in the producing field. It is this writer's guess that Garmes will never be satisfied until he gets an Academy Award for producing the best picture of the year to set alongside his photographic "Oscar."

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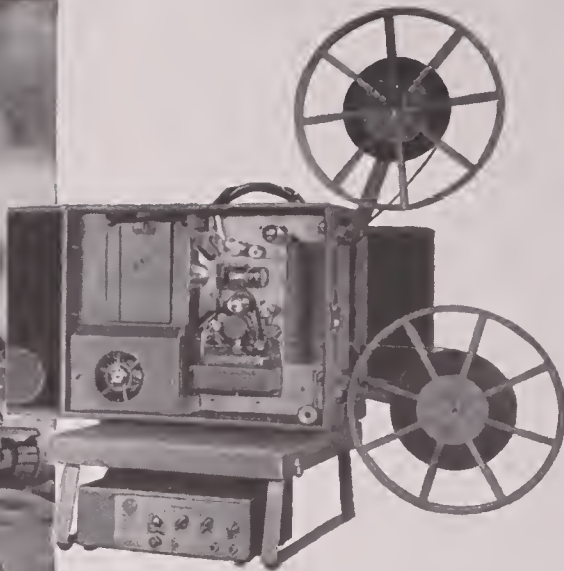
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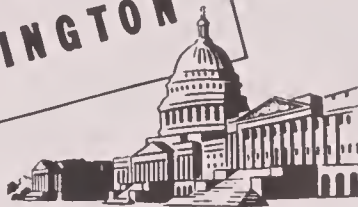
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Working within a few feet of the enemy's guns during a recent maneuvers, Signal Laboratory technicians develop a set of combat pictures. Problem was to develop pictures without a generator and using only a small bulb for printer lights. Technicians shown are Sgt. Malcolm C. Bulloch, Sgt. William Claridge and Sgt. William Robertson.

THROWN on their "own" during night maneuvers, the 4th Signal Photographic Laboratory Unit recently found itself faced with the problem of developing and printing film—both motion and still—without disclosing position by use of a noisy generator.

This called for a bit of improvising. The problem had them right under the enemy guns and the pictures had to be ready for study by the high command before dawn.

Unable to use a generator, the lads were forced to substitute automobile headlight bulbs for the regular printer lights. This was necessary because they were using a storage battery in place of the generator and the automobile lamps consumed less voltage. A standard printer was used and a small watchman's electric lantern placed inside a cardboard box provided a satisfactory safelight.

The enemy would have had to walk right into the Army truck which housed the improvised laboratory in order to discover it. No light showed and there was no noise.

Throughout the night film was developed without interruption and the pictures were ready on time, completed within easy pistol range of theoretical enemy positions.

Improvisation of the mobile laboratory also gave the men an opportunity to practice for an emergency. Basically, the same system would be used in the event regular laboratory equipment was destroyed in battle.

Many of the members of this Signal

Photographic Unit are Hollywood technicians, formerly in the Signal Corps Enlisted Reserve.

Officers of the Unit include Captain Gordon S. Mitchell, for many years manager of the Research Council of the Academy of Motion Picture Arts and Sciences, Lt. Raymond R. Windmiller of the Williams Laboratory and Lt. August W. Klein of the Bell and Howell Company.

Enlisted men include many of Hollywood's top technicians in every branch of the motion picture industry.

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Commentary Writing For Documentary Films

(Continued from Page 287)

that the story of the pilot-fish would do this: "The shark hanging in air means that, unseen, in the sea, one small fish now swims alone. A little white-blue fish with stripes on its back like peppermint candy. It is hardly over a foot in length. It is the pilot-fish which has always accompanied the shark . . ."

I made a statement in brackets when I detailed the first instance above. Here, I think, I've condensed something which any commentary writer for documentary or non-fiction films should constantly bear in mind. When our scenes show a particular, detailed operation, then commentary can usually be full because it will increase the audience's understanding of what is on the screen. It should never, however, be self-obviously banal

("This is the fisherman at work in the dory. Watch him pull up his lines. Every hook has caught a fish. Boy, there's a beauty!") On the other hand, when our scenes have a broader character, when they show, for instance, a ship sailing on the high seas or give a close-up to concentrate on the character in a face, then rarely is there need for spoken comment. Music (for the ship, a sea chanty) will effectively heighten the picture as no word ever could.

And while on the subject of when to use words, there is always a point in a given sequence where commentary should commence. This is something which can't be taught. To some people it comes intuitively; others acquire it through practice and performance; some never seem to learn it. It's not unlike knowing how to "time" a speech on the stage. Usually it does not come the moment a sequence begins. An audience likes to have the chance to grasp the scene before a voice blares out at them what it is; but after a little time most audiences begin to feel that there is something they want explained, and here is the psychological moment when the commentary must start.

All this seems to have brought me right back to the first and most important point I made about commentary. The best effect is obtained not through *how much* but through *how little* commentary we use, and how we can most tellingly space and place that little. Only by so doing, will we find our words worthy of the best in cinematography.

If a documentary-maker could become the invisible man he could make a documentary of the making of a documentary that would really be a documentary. It is when the documentary film-maker is working with people his film will feature—I don't mean when he is shooting them; I mean when he is living with them, getting to know them—that they usually show their most human side. It's generally something that can't be put into the finished film, especially if it's to be a straight documentary in the factual propagandistic mold. I think both Douglas Sinclair and myself carried away certain scenes from the North and from Lunenburg that, in memory, are far more vivid than much we recorded

on film. We like to remember that noon we set sail on the "Flora Alberta." The captain and crew had been wetly celebrating the fine, dry day. The captain kept telling us:

"Now, you, you can snap what you like, you. You see, you . . ." his use of "you" as a name was a Lunenburg colloquialism, indicating friendliness, however hostile it sometimes sounded ". . . you can snap what you like. . . . Fired on one of our vessels, they did, you! By God, you, if a submarine's anywhere near me, you, I'll ram the - - - - - - - - - - , you! We've a gun aboard. Bring it here, Fred."

A sailor produced a rusty shot-gun.

"See, you. We'll ram her, you, and you can snap her, you. Hope we do, you."

We hoped so too. We were, after all, going out into the submarine zone, not far, as it turned out, from where the steamer-ferry "Caribou," from the mainland to Newfoundland, was sunk a few weeks later. The captain, incidentally, never took our names until we got back to Lunenburg. If we'd sighted a submarine, there doubtless would have been two unknown documentary film-makers missing, especially as cameras are, these days, considered virtually as tools of war.

The only signs of war we saw, however, were the destroyers and corvettes accompanying a convoy, through which we passed late one afternoon. "It's a hard life," was the constant refrain of the fishermen, and the convoys only make it that much harder. On foggy nights, when the little dories are at their lines, the convoys often come over the fishing grounds, and the dories are decidedly vulnerable.

But the hazards of war, submarine or convoy, do not keep the Nova Scotian fishermen at home. While the vessels of the other nations which formerly fished there are kept at home by submarine menace or Nazi occupation, the Lunenburg schooners like the "Flora Alberta" still go out to the Banks. And the attitude of the men is that of the captain: "By God, you, if a submarine's anywhere near me, I'll ram the - - - - - - - - - - , you!"

We both realized we were witnessing something that did belong to these war-time days, heroic in its own way, just as it was heroic even in peacetimes. But we could not foresee the course of war-time events. We could not know that this vessel, which we came to love and which we hope we recorded with the full sincerity of our feelings for her, should herself become a wartime casualty.

On April 22nd, 1943, the Canadian press carried a headline:

**SCHOONER SLICED IN TWO
20 OUT OF CREW OF 28 TRAPPED BELOW**

And the story below the headline began:

"Sliced in two by a merchantman off the coast of Nova Scotia, the schooner 'Flora Alberta,' a 'high-liner' of the Lunenburg fishing fleet, has been lost." END.



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TRADE NOTES

NORWOOD Exposure Meter

Western Electric Official to Retire in September

Harry B. Gilmore, secretary of the Western Electric Company, has announced he will retire from business September first, after 41 years of service with the company. Succeeding Mr. Gilmore as secretary will be Norman R. Frame, who has served as assistant secretary. Mr. Frame has been with the company 20 years.

J. Harold Booth Bell and Howell Executive

Bell & Howell Company, manufacturers of motion picture equipment and optical devices, has just announced the appointment of J. Harold Booth as Vice-President in charge of War Negotiations, War Expediting, Employee Training, Subcontracting, Personnel and Public Relations, Industrial Relations, Sales, Service and Advertising.

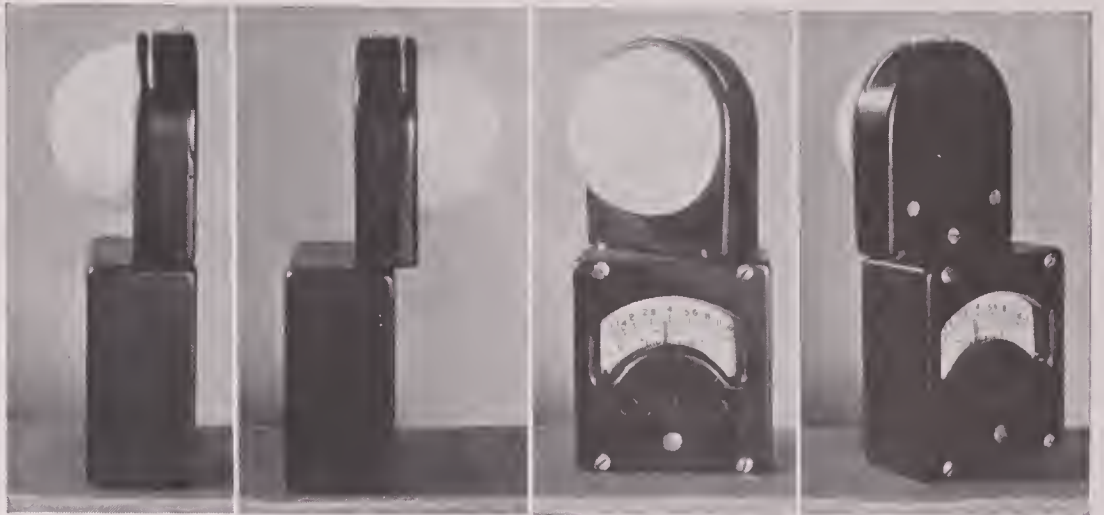
Mr. Booth entered the service of Bell & Howell Company in 1927, and since 1938 has been General Sales Manager in charge of service and advertising.

Negro Film Completed

Completion of the feature film, "We've Come a Long, Long Way," was announced this month by Negro Marches On, Inc., producers of the film. This picture is a cavalcade of the Negro race, and was directed by Jack Goldberg, for twenty years a leader in the production and creation of all-Negro films.

This Is War

Due to wartime shortages in materials, various and sundry devices have been developed in the Hollywood film studios. One of the most interesting is a contraption that picks up bent nails and straightens them for use. Before the war countless pounds of nails were lost, for no one thought of picking up a dropped or bent nail. But today it is different.



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★ We regret that "for the duration" civilian orders for NORWOOD meters can only be filled on a priority of AA-3 or better, or when a Weston "Master" (Model 715), or Model 650, Universal, Leicameter or 819 Cinemeter in good condition is offered in part exchange.



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Editorially Speaking . . .

FATE plays peculiar tricks on us. A few days ago I had no idea of ever editing this magazine again. I lunched with Bill Stull, the editor, and promised him I would write a piece for the August issue. And now, here I am sitting at Bill's desk getting the magazine out, and Bill has passed on. Such is life.

I say "Bill's desk." Actually, this desk was bought for me away back in 1929 when I became editor of the Cinematographer for two and a half years. To those subscribers who read the magazine then I send greetings; to those who do not know me I say "Hello."

It has always been my contention that a magazine should contain the material and stories that the readers desire. It is my contention, also, that unless the readers tell us what they want, we just have to go on guessing. Sometimes we are lucky and please them; sometimes we miss the mark. Here and now, the readers of the Cinematographer are requested to send in suggestions as to story material you would like to see. We will try to give you what you want, if you ask for it.

LATELY we've been reading in the trade-papers, and even to some extent in the daily newspapers, of how essential motion picture entertainment is proving to our soldiers at the fighting fronts. This is a fact in which the motion picture industry can rightfully take great pride, and one which should by all means be brought home to the American people and to the Nation's policy and law makers in Washington. We can't help wondering, therefore, why the motion picture industry as a whole doesn't arrange to send camera-crews out with light, portable, single-system sound-and-picture cameras (they could even be 16mm., if the utmost portability be needed) to the fighting fronts, to bring back a genuinely documentary record—unembellished by any "Hollywood touches"—of what motion pictures are actually doing for Johnny Doughboy at the front, and to record the actual, un-scripted comments of servicemen

THE other day I heard an amateur complaining quite bitterly over the fact that he couldn't buy equipment he desired to take on his vacation. That man doesn't yet realize that we are fighting a global war and that the manufacturers of camera equipment are in there pitching to provide equipment for the fighting men who are out there in the thick of the battle to save this world so that in future years amateurs will again be able to make all the pictures they wish. Our hats are off to the photographic manufacturers for the magnificent way they have done their bit. So, let's stop complaining—and buy more bonds.

WONDER what has become of the one-time overworked term, "camera angles." You never hear it any more, and with its passing motion picture photography has reached heights of perfection once never dreamed of. Whereas at one time good photography was the type that made audiences gasp with sheer amazement, today the finest photography on the screen is that which makes an audience forget they are looking at a picture. Directors of Photography have developed their art to a point where the picture becomes a reality. That is photographic art.

WHAT are you doing to help win the war? Have you ever stopped to ask yourself that question?

Just because you are paying your taxes uncomplainingly and are investing ten per cent of your pay check in war bonds doesn't mean that you are doing enough. When making that deposit in your savings account have you ever thought of those boys of ours wallowing in the mud and slime of the islands of the South Pacific, burrowing like wild animals in the mud to escape the bullet of a Jap sniper? Or have you visualized other boys over in Europe riding out through the darkness of the night in bombers, wondering which of them will come back and which will go down in flames?

The next time you take a hundred dollars to the bank to put away in your savings account take half of it and buy an extra war bond. Then maybe our boys will be able to come back sooner and in greater numbers. They aren't asking for pay increases or for luxuries. They are only asking for more guns and tanks and planes and bullets. Let's give them those things.

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Club Would Exploit Film Source-Books, Pix Simultaneously

George Macy, New York book publisher and head of the Limited Editions Club, the Heritage Club and the Readers Club, is in Hollywood for the purpose of forming a revolutionary new type of book club in which he plans to publish only books that have been used in motion pictures.

Macy's idea is to bring his books off the press simultaneously with the release of the pictures that have been made from the books, thus bringing about an exploitation tieup for both the pictures and books that will publicize the pictures in thousands of spots that are not ordinarily reached in picture campaigns.

"My new club will not cost the picture producers a single penny," explains Macy. "I have nothing to sell them, but those who cooperate will have the advantage of the announcement that the book they are filming has been selected as one to be published for the members of 'The Modern Masterpieces Book Club,' and will have club members all over America reading the book at the time when it will suggest to them that they ought to see the picture."

Macy points out that he has 177,500 members in his Readers Club, and expects at least 100,000 to enroll in the new club.

Sings to Millions

Estimated that Frances Langford has sung before a total of five million servicemen during her costar roud of army shows as Bob Hope's chanteuse.

Argentine Raw Film Situation Serious

Buenos Aires.—Argentina, which asked for 42,000,000 feet of raw film stock and received limited allotment of 7,200,000 feet for 1943, figures that reversal of governmental policies from original stand of pro-Axis will gain consideration for a substantial increase in footage available.

Local film industry, in lodging strong complaints against inequitable division of film between various producers and distributors—with charges that many newcomers and opportunists were horning in to use quota of raw stock as basis for promoting new companies—has been able to secure governmental consideration for a complete re-shuffle. Unless new government can secure concession from the United States for substantial increase of film footage for the year, local industry will be in hard straits.

Wallace Snaps Sicily

Sergeant Bob Wallace, former Hollywood magazine photographer, directed one of the three crews credited with the successful 'photographic' invasion of Sicily for American newspapers.

Studio Cuts Truck Mileage By 20 Pct.

RKO, by utilizing locations a short distance from the studio and building exteriors on the stages at Pathe instead of at the ranch, has cut its truck mileage 20 per cent for the first six months of 1943, as compared to the mileage of the same period during the previous year.

In 1942, RKO's trucks traveled 80,526 miles in the period from Jan. 1 to June 30, while in 1943 this figure dropped to 59,654 for the corresponding period.

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In This Issue...

Nude But Not Lewd

Post-War Dream Camera



September
1943



Precision in a blackout

THE LIGHTS were turned on to illustrate this story, but actually both the Du Pont Research and Control Laboratory assistant and the machine she controls work in a darkroom.

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Pathe Cameraman, Howard Winner with his Eyemo "somewhere in Africa." At right is Capt. John D. LeVien, who distinguished himself in Algeria by leading the 90 troops who captured the Italian Armistice Commission.

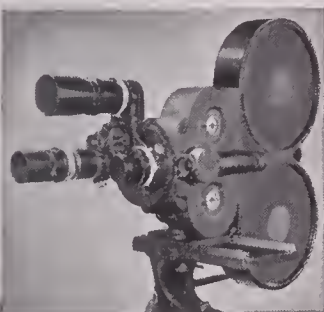
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

SEPTEMBER, 1943

NO 9

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The Front Cover

This month's cover is a shot of glamorous Rita Hayworth, Director of Photography, Rudy Mate, and camera crew making Columbia Pictures "Cover Girl". In the picture from left to right are: Miss Hayworth, Rudy Mate, A.S.C., Allen Davey, assistant cameraman, Julian Hilson and Kenneth Hunter, of the Technicolor staff, and Burney Guffey, operative cameraman. Cover photograph made by Ned Scott.

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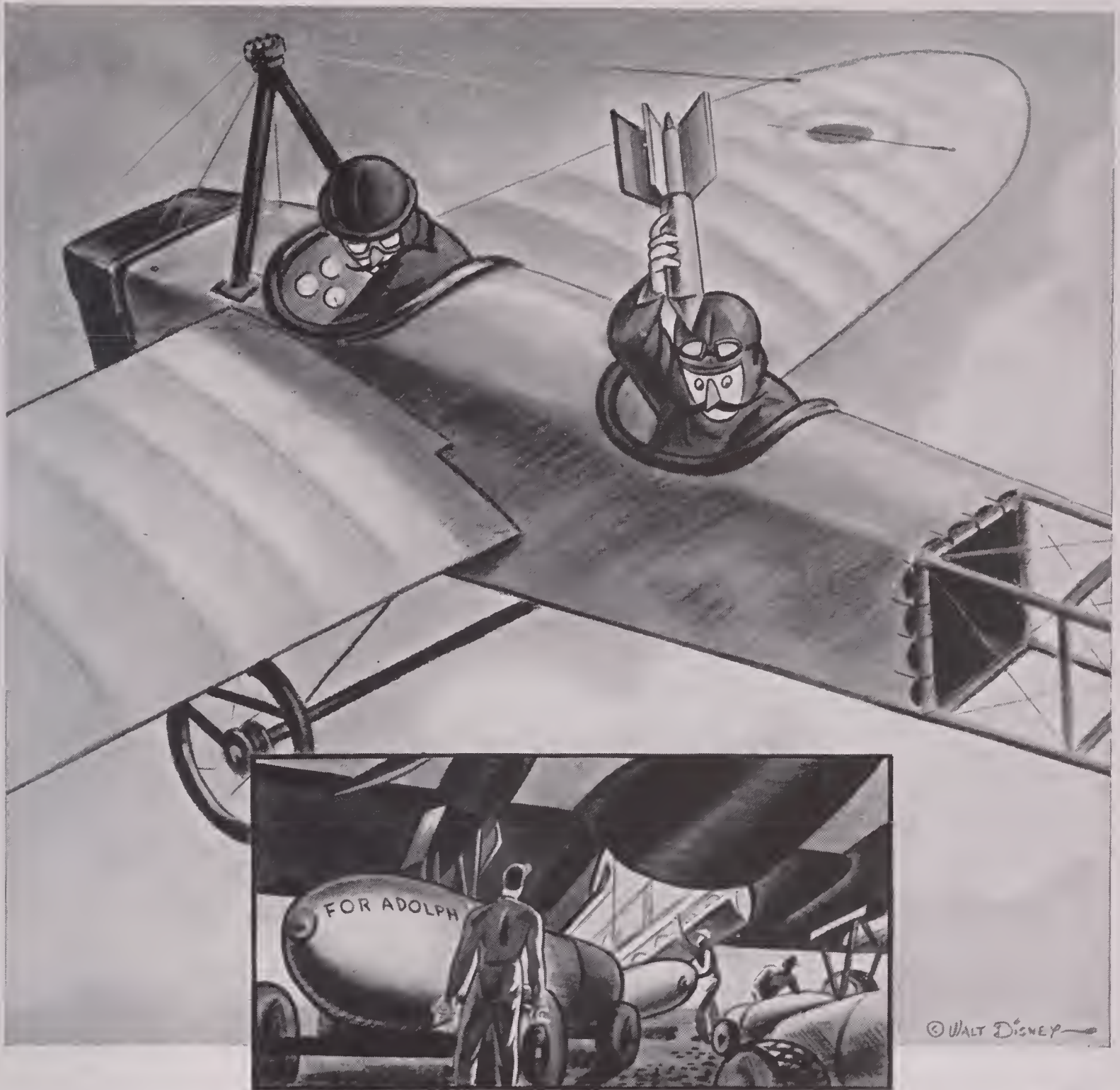


Illustration from Walt Disney's Feature, "VICTORY THROUGH AIR POWER," Major Alexander P. de Seversky's best-selling book.

*FANTASY OF FACTS . . .

World War I — a 25-pound bomb was news! Tossed by hand from an open plane, it raised its little cloud of debris — and spoke of things to come, today's huge blockbusters, which are precision-released from giant bombers with devastating effect. ADEL assists in their delivery with highly-efficient hydraulic, electric and hydra-electric equipment. ADEL equipment on leading United Nation's planes was an evolution of original plans for making cinematographic equipment. From a unique lens focusing device came a carburetor dual control mechanism which, in turn, led to the development of other aircraft products. ADEL'S peacetime plans include advanced cinematographic equipment, made with the engineering skills that created ADEL'S international acceptance in aviation. Hasten the day of Victory by taking Pluto's good advice.



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Nude But Not Lewd

By HILDA BLACK

TAKE it from pretty-red-haired, glamorous-looking Maurine, there's more to photographing nudes than appears on the surface. As a matter of straight fact, what appears on the surface is usually where all the trouble begins.

Ask any photographer who has made a study of nudes and he'll agree with you.

To begin with, says Maurine, they are the most difficult of any camera studies to photograph. That would be true even were it not for the strict rules of what is "proper" and what "improper" in nude photography.

"Nudes, I suppose," continued Maurine, have fallen into disrepute because there have been so many bad ones. Badly posed, badly executed. The reason for

that is simple: every avid 16mm. fan thinks he is going to be a great cameraman. And he starts thinking in terms of nudes.

"Why does every photographer's thoughts turn that way? I don't know, unless it's because intuitively we all know that there is nothing more beautiful than the human body. We just naturally turn to the most beautiful thing we can think of to photograph.

"But does the new camera addict think of the difficulties ahead? He does not. 'Nothing to it,' is usually his attitude. And so, with only the sketchiest knowledge of his subject, the novice sets out to photograph the most intriguing—and most difficult—of all subjects—nudes.

(Continued on Page 338)



Nude study on opposite page took 7 hours to light. Maurine, who made it says it is best she ever did. Top of this page is another Maurine study. And here is picture of Maurine herself. She is one of Hollywood's top portrait photographers.



Fighting With Film

By HAL HALL

THE business of fighting our enemies in the current global war is not being done entirely with guns and bombs and bayonets. Playing an important part on every battle front and in every bombing mission, motion picture cameramen, many from Hollywood, are marching and flying side by side with fighting men, shooting with film instead of bullets.

Specially trained to carry out their work from the air, one of the most important groups of combat cameramen are those attached to the Army Air Forces. These cameramen have a real job cut out for them, for their's is the job to record on film any and all things that will:

- (1) Aid in saving the lives of our men.
- (2) Expose any and all weaknesses in our planes and machines so that they may be made better.
- (3) Photographing the enemy's war machines so that we may learn their secrets, tactics and modes of operation. It is not necessary to state how much aid this will give our fliers in combatting them.

Training the cameramen for this job is in the hands of a magnificent organization called the Army Air Forces' First Motion Picture Unit, with headquarters at the Hal Roach Studios in Culver City, California. There units of from 20 to 25 cameramen are carefully trained, not only in the mechanics of their job, but undergo a rigid and thorough physical training, to insure their being in peak condition. Their lives will often depend upon their individual stamina and proficiency in the use of small arms. These men must and do possess a high degree of skill and courage.

The Officer in Charge of Aerial Cinematography of the Army Air Forces' First Motion Picture Unit is Major Elmer G. Dyer, long a member of the American Society of Cinematographers and for years one of Hollywood's outstanding cameramen. Some of the most spectacular aerial cinematography that has come to the motion picture screen in the past years has come from Major Dyer's camera. So, when Major Dyer trains a cameraman for aerial work, that man is learning the tricks that it has

Upper left, Major Elmer Dyer, Officer in Charge of Aerial Cinematography, Army Air Forces First Motion Picture Unit, in ship ready for flight with camera. Top, Lt.-Col. Paul Mantz, Commanding Officer of the Unit. Bottom, Lt.-Col. Owen Crump, in charge of production.

taken Major Dyer many years to acquire.

Perhaps a clarification of the three important jobs of the aerial cameraman mentioned above might be in order. So we quote from information furnished by the Public Relations Officer of the unit.

"In analyzing these three operations it is better to explain them singly. In the work of saving lives, our men fly in combat planes in the thick of the fighting, busy photographing not only the enemy, but our own men and planes as they fight. They photograph our planes as they are hit; they learn the weaknesses, however small they may be. Emphasis is specially placed on these weaknesses, particularly as they affect our combat crews. In one short fight they can learn that more armor plate is needed to protect the crews on certain vulnerable parts of the planes from the



number of wounds, if any, that the crews receive. If they show that more are receiving leg wounds, then armor can be added to prevent this; if body or head wounds, the same thing applies. Films will show just how long pilots can fly at peak effort before too much nervous tension sets in, or he becomes too tired to do his best. The figures showing that we lose but one plane to five or more of the enemy's losses bear out the facts of our superiority. We mean to keep it thus.

"In exposing the operations of the enemy we further aid in defeating them. As an example, it might take one pilot or gunner from ten to twenty bursts of fire to bring down one plane, while another plane goes down from one burst. In the thick of the fight the gunner hasn't time to notice just what vulnerable spot he hit to bring the plane down. All he knows is that he hit it. But when recorded on film, our men can easily see what happened and the next time will know a particularly vulnerable spot to aim for. This has happened more than once and will happen again. And when this applies in reverse to our own planes, we take steps to prevent it happening again. And not only do our units fight in the air, but also on the ground, doing the same thing for the ground forces.

"Some people may think that being in the Motion Picture Unit of the Air Forces is just a soft berth for the duration. Such is not the case. The men in this unit realize that as soon as they are ready for it they will see overseas action. For they are needed badly. And as training goes, they undergo a great deal more than the average, for they have to double in brass. They are thoroughly trained in the firearms they will come in contact with. Rifles, revolvers, sub-machine guns and anti-aircraft guns. They can take them apart and put them together again, in addition to being experts at firing them, and feel equally at home in their gas masks. Each man is also given a thorough course in Judo.

"In addition, these men are equally proficient behind the camera and with

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Upper left, Major Dyer and technical staff. L. to R., Lieut. F. H. Nolte, Pfc. D. B. Dickerson, Cpl. A. B. Canfield, Captain O. S. Lovering, Director, and Major Dyer, preparing for ground aerial shots. Upper right, Major F. L. Clarke, pilot, discusses problems with Major Dyer. Center right, Capt. Gilbert Warrenton supervising photographing of aerial machine gun in action. Standing below him is Captain Richard Mayberry. Bottom, Lieut. T. E. Tutwilder, cameraman, and Lieut. Russ Saunders, director, await take-off orders. All photos from Army Air Forces.





Hollywood and Minorities

By PETER FURST

THE movie industry has come in for plenty of kicking around, slander, hitting below the belt and distorted accusations, all undeserved, from such sources as the Chicago Tribune, the New York Daily News, isolationists in Congress, some movie columnists and a very few disgruntled members of the industry itself. Usually their reasons were Hollywood's alleged "interventionist propaganda," and general liberal policies. Only recently, Hollywood was visited by a young lady reporter from a Chicago paper. She may not have found much evidence of "communism" among our producers, but she must have been supplied with plenty of dirt by the wrong people, because the series of "exposes" she wrote were among the nastiest pieces of mud-slinging this writer has seen in a long, long time. Reading those pieces, one would think that none of us correspondents have a nose for real news, because none of us somehow seem to be able to get on any of those wild things the Chicago paper and its hirelings would have us believe go on in the world's movie capital.

Judging from all these violent outbursts on the part of these groups, one would think that Hollywood is a liberal's

paradise. To tell the truth, Hollywood, at least since the beginning of this war, has not given liberals too much cause for complaint. Our movies may not have said all they might have or could have said, but at least they didn't play ball with "the wrong side" either. On the contrary, in a good many cases, Hollywood has tried to show the way, only to be frustrated in its attempts by official or unofficial censorship, such as the State Department or religious groups, to which Hollywood is still very susceptible.

The one legitimate complaint liberals have had against the movie industry, however, is the question of the treatment of minorities in films. This article is not written with the intent to criticize without giving a fair trial to everyone. It is not written as a pure condemnation of those who have not seen fit to recognize the Negro on the screen as what he really is, an American who is working for victory. Neither, however, is it intended to be a defense of the appeasement policy, nor does this writer necessarily endorse all of the methods used by those who want to see the Negro get a new deal on the screen.

Because, while there has been much too much delay, there has also been action.

There have been many set backs, but also there have been advances. There have been disappointments, yes, but we have also found much cause for rejoicing. We have come a long, long way since D. W. Griffith's "Birth of a Nation," in 1914, which caused riots and disturbances all over the nation because it showed the Negro as a terrorist. We've had a "Gone with the Wind" which showed the Negro as a dull, plodding servant without ambitions or desires of his own, but then again, we have had Warners' "In This Our Life," with its beautiful portrayal of a young Negro who wanted to become a lawyer because that is the best way for him to fight discrimination. And only recently we have had pictures like "The Ox-Bow Incident" with its indictment of lynching and its portrayal of a colored preacher, and Columbia's "Sahara," with Humphry Bogart and Rex Ingram, the colored actor, but more about this later.

Of course, there are other minorities who have raised their heads in protest against their screen treatment. The Russians, the Latin Americans, the Chinese, the Filipinos, all have come in for their share of cinematic slurring. Today's problem, however, is the Negro. There are thirteen million Negroes in the United States, hundreds of thousands in the armed forces and behind the work benches of the war factories. Lena Horne, the colored singer and actress, star of "Stormy Weather," has this to say about the problem of the portrayal of the colored man on the screen as practiced by most of our studios:

"We are not asking for any special favors for the Negro performers. But why always cast them as superstitious,



cringing, singing, dancing, carefree, crap-shooting characters? That is both distasteful and untrue and helps further anti-Negro propaganda.

"All we ask is that the Negro is portrayed as a normal person, with normal emotions, ambitions, and desires. Let's see the Negro as a worker at a union meeting, a voter at the polls, as a civil service worker or an elected official. Perhaps I am being naive when I voice such desires. Perhaps these things will never be straightened out on the screen itself but will have to wait until these problems are solved in real life."

Some people don't think Miss Horne is so very naive when she voices these opinions. There's one group in Hollywood that looks toward the all-Negro film for salvation. There you show the great talents of the colored entertainers, you accustom people to seeing Negroes on the screen. A person who has seen "Stormy Weather" or "Cabin in the Sky" might conceivably more readily accept a colored person when he appears among white people on the screen other than as a servant. That may be true and this group has many followers even among the colored screen actors.

No story on Hollywood's treatment of the Negro would be complete, however, without some praise where praise is due. And praise is certainly due in the case of Columbia's "Sahara." This picture is Hollywood's worthiest effort to date so far as the Negro on the screen is concerned. This is at last a picture that comes up to all expectations and has already been duly recognized in such liberal publications as the newspaper PM in New York and in Negro newspapers all over the country.

"Sahara" is the story of an American tank commanded by Humphry Bogart in the North African desert during the

battle against the Nazi Afrika Corps. Rex Ingram, the distinguished Negro character actor, plays the part of a British Sudanese sergeant who is picked up by the tank, together with his Italian prisoner of war, portrayed by J. Carroll Naish who has played more nationalities on the screen than anyone else in Hollywood. Ingram, who knows the desert and its treachery is made a full-fledged member of the crew, already composed of Americans, Australians and Englishmen. Even the Italian is taken along, despite the lack of water. Ingram, the Negro, is accepted as a complete equal by everyone including an American Southerner, played by Bruce Bennett. During the tank's wanderings across the desert there is an attack by a Nazi Messerschmitt which is shot down by the tank's guns. The pilot is saved and taken prisoner by Bogart who orders Ingram to search him. The Nazi protests vehemently.

"No Negro is good enough to touch an Aryan," he explodes. But Sergeant Bogart knows a truly democratic answer to that one:

"Search him," he says, "your forefathers were Pharaohs when his were still roaming the jungles of Europe. We don't believe in his kind of racial superiority." When the tank finally reaches a lone Berber well in the desert, Bennett the Texan, and Ingram the Negro, climb down in search of water. In the depth of the well, surrounded by the Fascist enemy, they discover they can be friends. "I guess we have a lot to learn from each other," says Bennett. Ingram is later killed in an attempt to get water for the others during a Nazi attack.

Those are the kind of pictures all those interested in real unity want to see on the screen today. What is needed on the screen is a much clearer understanding

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Top opposite page, scene from "Somewhere in Sahara." Upper left this page, Rex Ingram and J. Carroll Naish in a scene from the same picture. Top, right, Humphrey Bogart, as a Yankee tank commander, and Pat O'Moore wait for the oncoming Nazis. Center, Naish watches disappearing tank that failed to take him to safety. Bottom, Naish becomes Ingram's pack mule.



Iowa's Health In 16mm.

By D. H. BONNIE* and W. H. SCHULTZ**

TIME was when borrowers of the Iowa state health department's 16mm. library were satisfied to show whatever pictures were included on the film list. But not now.

These days, if they don't see what they want, they ask the department to produce a picture on the specific subject in which they are interested.

A case in point is that of the woman who telephoned this spring and asked for a film on smallpox to be shown on an undetermined but approximate date next winter. Undaunted when informed that the department does not have such a picture, she said:

"I know, but I've heard that you make your own pictures. Can't you make one on smallpox?"

She was told that the film could and would be made (it's needed anyway), but her picture will have to wait until previous requests are met. Ahead of it on the production schedule are a picture on cancer, now nearing completion, and a story about emergency medical care in flood disasters. Fighting for position are two additional requests, one on home sanitation and housing, the other on restaurant sanitation.

What started out modestly enough three years ago with a magazine Cine Kodak and a theory that Iowa faces and places would increase the demand for health films has become one of the department's leading educational activities. The only casualty has been the

magazine Kodak, but in its stead has come a Cine Kodak Special and with it the equipment to make sound pictures from raw film to release prints.

In the toddling period, when the magazine camera was in use, the department's part in the film was limited to writing, shooting and editing. Recording and printing were done outside. Those were the "proving" days and the first film was the experiment which had to justify the entire program.

The picture, which was a story of the place of milk in nutrition, took hold (in spite of its imperfections) with the characteristically strong grip of a healthy infant. Entitled "Modern Magic" and made in color, the film since has had wide distribution in Iowa and various other states have been sold copies at cost.

That was the beginning and it came quite easily. From then on the program sprouted upwards like a growing boy, but it was not without growing pains. First of these was the demand for films themselves. After the original picture, not a few of the department's division heads decided they would like to have their own films, too. Requests came so quickly and were so many and varied that a compromise had to be reached.

The following picture, which by chance had been suggested at about the same time by someone outside the office, filled the breach. It was a motion picture description of the purposes and work of the health department, including thumb-nail moving portraits of each division.

At this stage the Cine Kodak Special came along. The solutions it provided

to problems which arose with its predecessor are obvious. Varying frame lines were eliminated; dissolves, fades and other trick effects made possible with the new camera gave rise to smoother transitions and more cohesive stories.

The camera, however, was the least of the problems, though probably the first. Sound was the big thing on the limited budget available and was the largest single expenditure on the milk film. It was apparent that the budget wouldn't stand many blasts such as it took for the 35mm. reduction which was used. With the advance demand for pictures already laid down, it was decided that if the money could be raised it would be cheaper in the long run to purchase a 16mm. recorder than to go on with reductions.

The money was provided with less argument than was anticipated, indicating how well the first film had proved itself. An Auricon recorder with synchronous camera motor was purchased but it was to be some time before lip synchronized sound would be attempted.

As no projector with a synchronous motor was available, some way had to be developed to synchronize offstage narration with the picture. This was solved by making a new face for an electric clock and dividing it into 36 places to coincide with the sound speed of film. The scenes are measured and the narrator's script is marked with the corresponding numbers on the clock. The narrator, usually obtained from local radio stations, either reads on cue from someone else, according to the clock numbers on the recording script, or by watching the clock himself. Before recording the narrator sees the film several times to familiarize himself with the action.

After recording the sound negative is checked by running through a sound projector but without going through the picture aperture. Extreme care is taken to prevent damage to the sound negative, further reason why the picture aperture is dodged. As the film goes over the sound drum, the machine is stopped at the beginning of each scene and the corresponding clock number is written with ink on the film.

Previously, of course, the entire picture has been edited and the scenes cut to the required footage. Then comes the final synchronizing of the sound against the picture. With the two spools taped

* Photographer.

** Public Relations Director, Iowa State Department of Health.



together on the rewind to insure even takeup of both films, the sound track and pictures are run together over the sprockets of the measuring device. This locks the films together and the numbers marked on the sound track are checked against the scenes. If further cutting is necessary, it is quite simple to know where it should come.

The Iowa health department has its main offices in a house which once was the governor's mansion. About the only space left for a sound room after this program was started was in the attic. Two rooms, a recording room, 8x10, and a control room, 6x10, were built. Enough space was allowed in the control room for two dual turntables for music, one disc recorder, a niche in the walls for a projector to show films through the dividing glass window into the recording room which is also used for previews, and a bench for the film recording equipment.

The sound room, because of its small size, is far from ideal acoustically but it is serviceable. Though it was deadened with Celotex, rock wool and an air space, there were echoes at first. This was overcome by draping monk's cloth over two of the walls.

At the outset of the program and until war came, reversal film was used for the original photography. When the war hit it was next to impossible to buy reversal stock, tests were run on negative film. It was found that the results were better than had been earlier obtained by reversal process and even more gratifying was the fact that it was cheaper and possible to do the developing and printing in the department. A further savings was made in turn, as a result of this change, because work prints could be made from odds and ends of film edit-

ing, thus protecting the negative from undue handling.

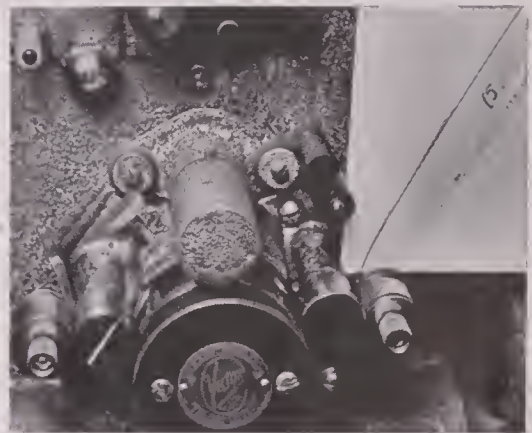
Past experience with negative film in days long gone by was discouraging, but with the recent developments in film emulsions and developing agents surprisingly good results are obtainable now. Diamine glycin developer is used and while this developer requires more exposure, it has been found that an increase in exposure of one lens stop compensates for the difference. The grain is just as fine as reversal film of the same speed. When prints are made on fine grain release positive, there is little loss of quality.

Two printers are used—for the pictures a step printer converted from a Model A Eastman projector and for the sound a printing head of an old continuous printer mounted on the frame of an obsolete 35mm. projector. The 35mm. sprockets have been replaced by 16mm. sprockets with an extra takeup added.

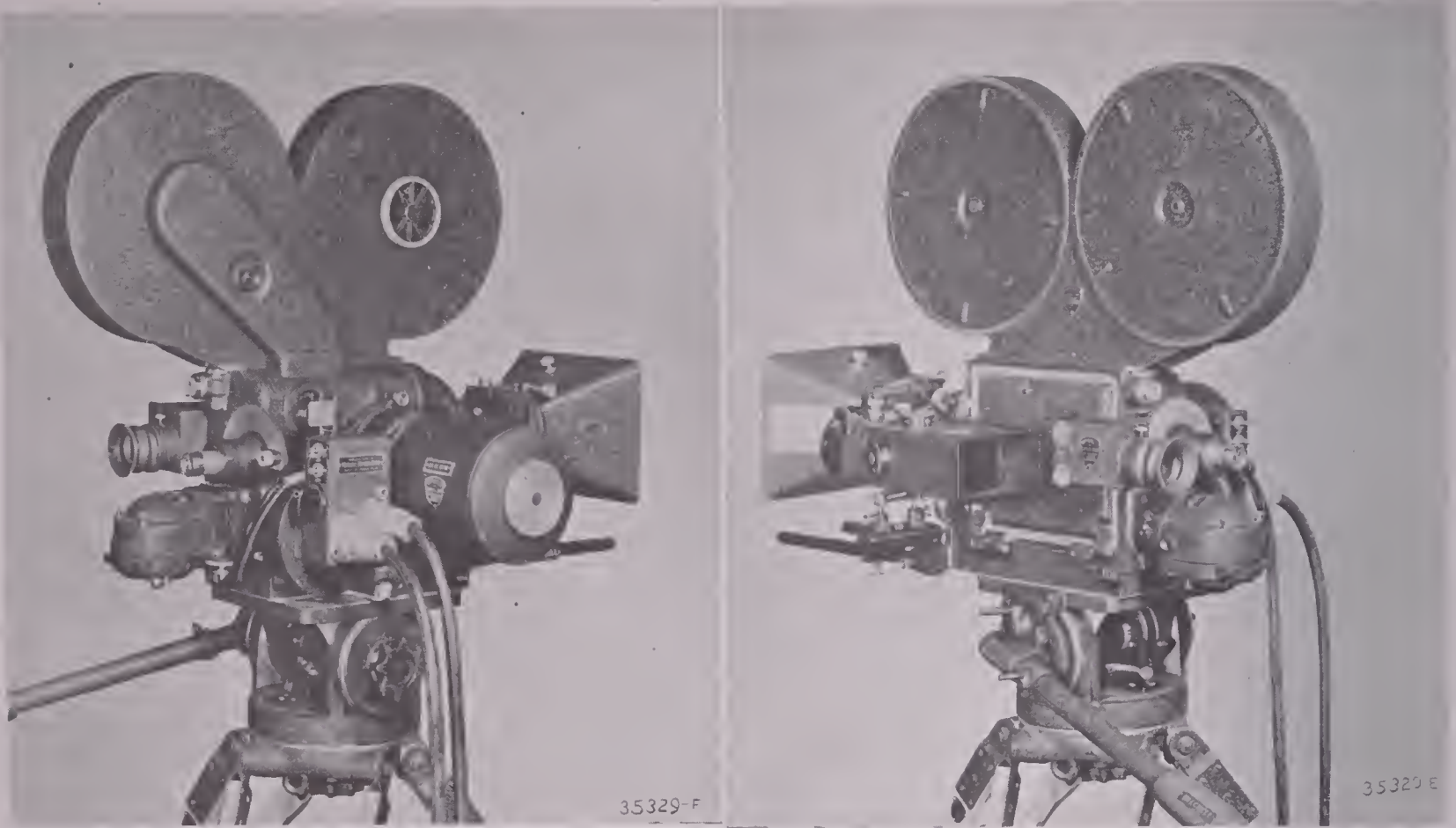
Esthetically the sound printer doesn't have much in its favor, but the important thing is that it does the work and has taken the film program a long distance. Offstage narration was employed exclusively on the second film completed—the one which describes the department—and also was used on the next four films produced.

Following the second effort, which was entitled "For Iowa's Health," came in relatively quick succession, "Eyes for Safety," a color film on supervised safety and health in swimming; "Wells, Health and Wealth," a color film on sanitation of private wells which in six months moved to the top of the list in

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Opposite page, left, is scene from the Iowa health film. Right is illustration showing "bomb" used for safe storage of radium capsules. Upper left, this page, Iowa Health Commissioner, Walter L. Bierring, M.D., demonstrates method used to record his voice for the health film. D. H. Bonine operates recording controls. Top right, W. H. Schultz registers Kodaloid drawing for animated scene in Iowa cancer film. Right, center, synchronization marks for Iowa health film are marked with ink on film. Sync number is written in before next scene is run. Bottom, in final synchronization sound track and picture are run together and checked.



Two views of the new Mitchell camera.

Mitchell 35 mm Single System Sound Camera

By E. J. TIFFANY*

ONE of the revolutionary new photographic developments which will be available to the motion picture industry at the close of the present global war has just been announced by the Mitchell Camera Corporation. It is a new 35mm. single system sound motion picture camera, now available only to the needs of war.

This outstanding single system camera was developed two years ago with the sole purpose in mind of producing a camera of the highest quality, containing both sound and pictures for newsreels, travelogues, commercial advertising and educational purposes.

Since the entry of the United States into the war this camera has been in great demand by various departments of the Government. With it, it is now possible with one compact unit to photograph the record high quality sound all in one complete unit. The entire unit, with camera, camera case, friction head and case, and tripod is extremely light weight.

The camera in addition to the stand-

ard focus tube, filter slide, veeder counter, buckle trip, revolving four-lens turret and shutter opening of 175°, has the silent Mitchell compensating link movement and a recording impedance drum. The film threading is comparable to any sound camera or recorder. A 24-volt or 12-volt motor can be mounted on the side of the camera. These are controlled by a rheostat to take care of any variation in battery voltage.

The standard 110-volt variable speed Mitchell motor can also be used on the camera. A tachometer is mounted on the rear of the camera. The combination matte box and sunshade with pola screen holder, bellows, three-inch filter gauze holder, is capable of handling a 24mm. lens. An opening on the side of the sunshade permits the finder to be installed close to the lens to reduce the parallax of the finder and to permit a close object as well as a distant object to remain in the field of the finder mattes without making any adjustments. The standard Mitchell magazines, friction head, and tripod can be used with the camera.

An erect image view finder with adjustable built-in mattes is mounted on the

upper left-hand corner of the camera on a support bracket, and is equipped with an adjustable screw to permit the finder to be set in any position. A new feature of this finder is the type of mounting which permits the finder to be quickly lifted upward to permit the door to be opened for threading the camera. After threading, the finder is returned to the photographing position without any adjustments. This is done by releasing the lock lever which enables the finder to be swung in an upward position and automatically locked. By releasing the lock lever the finder automatically returns to its normal photographing position.

Another new feature of the Mitchell single system sound camera is the new rack-over installed on the side of the camera. By forward motion the camera is racked over to permit viewing through the door finder the object to be photographed. It is pulled backward to permit photographing of the scene on the film.

The single system sound camera is constructed to handle either one thousand foot capacity or four hundred foot capacity standard Mitchell magazines with wind guards to prevent the belt from being blown off the pulley by excessive pressure while flying in an airplane and to protect it in stormy weather.

The camera is constructed so that either RCA or Western Electric sound systems can be mounted on it without alteration. An RCA galvanometer is mounted on the first of these cameras. The galvanometer is installed at the rear of the camera and is operated from a

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*Mitchell Camera Corporation Engineer.

On With The Show

By EDWARD PYLE, Jr.

VISUAL AIDS SPECIALIST

THE EVER increasing use of 16mm. so-called "non-theatrical" motion pictures, emphasizes the importance of applying showmanship and skill in their presentation. These 16mm. sound films can be broadly classified within three groups—Educational, Advertising and Entertainment.

Knowledge of some of the fundamentals and limitations of 16mm. film and presentation equipment, and taking advantage of every opportunity to control the mechanical variables encountered, will assure that the audiences view the films, without too obvious comparisons with 35mm. theater showings.

The 16mm. film size, less than one fourth the area of regular theater film, in itself means terrific enlargement in order to cover even a six-foot wide portable screen. This indicates that, to avoid distortion and assure clear and brilliant projection, the operator should keep projector lenses perfectly clean. Accurate focusing is most important, and, as 16mm. projectors warm up considerably during projection, the focus will occasionally vary, necessitating focus adjustment during the showing.

The cooling system on most 16mm. projectors limits the lamp size to 750 or 1000 watts. This means that the maximum screen size consistent with a good clear reflected screen image, is about eight feet wide, however, the conventional six foot portable tripod screen is large enough for most gatherings. The screen brilliance and picture sharpness on such a screen, illuminated with a 1000 watt lamp compares favorably with 35mm. theater projection from arc projectors. Although 16mm. arc projectors have successfully equaled the 35mm. projection in many cases, they are not considered "portable," so will not be discussed here.

The above mentioned favorable comparison is only favorable to that small portion of the audience who can sit close to the line of projection. This limitation of view position is due to the natural characteristics of the glass-beaded screen reflective quality, to compensate glass crystals are applied to the flat-white screen surface, to increase the screen reflective quality, to compensate in part for the comparative weakness of the 16mm. projector lamp. The glass beads function similarly to a mirror, hence reflect the projected light, directly back from the screen surface. One only needs to stand, first directly behind the projector and look at the screen, and then move to either side, to become well aware of the terrific "fall-off" in light reflection towards the sides

of the audience. Consequently, if possible, arrange the audience in a long narrow group, projecting down the length, so that the majority can view the films to the best advantage. A helpful expedient in a crowded banquet room is to project diagonally across the room to afford a favorable viewing angle for everyone.

The actual placing of screen, speakers and projector are most important. Anticipate the size of the audience, and use a screen size to fit the audience. A 52-inch screen is wide enough for groups up to about fifty in number, whereas a six-foot screen is suitable for larger meetings. This latter size is the largest that is easily portable, based on a tripod. Place the screen at the narrowest end of the room, or diagonally in a corner. In most cases it is not wise or safe to leave the screen elevated during preliminaries, so mark the tested position of the tripod legs on the floor, with thumbtacks or white chalk. The bottom of the screen should always be a little higher than the tops of the heads of the seated audience. Better visibility can often be provided by mounting the screen tripod on three chairs.

Next in importance is the position of the projector. Have a choice of several lenses, for instance, a 2-inch, 3-inch and 4-inch. This flexible selection will permit projection over the heads of the audience so that no one's view of the screen is obstructed by the projector or operator, and also there will be less distraction by the noise of the projector in operation. Of course, move the projector back or forth until the projected light exactly fills that screen. If the only available table is not high enough to permit projection over the heads of the audience, put a chair under each leg of the table or projection stand. Try to avoid the use of a center aisle, as this space is the best possible viewing position for maximum screen reflection, and should be used by the audience. Keep in mind that the principle of screen reflection diminishing towards the sides of a room also applies to the vertical plane. If the screen is placed as high as it should be for best visibility, then the projector should likewise be placed as high as possible, to allow the maximum reflection from the screen to the majority of the audience. This principle is usually overlooked, and it is common to see a screen placed too high, and the projector sitting on a low table, shooting up at the screen, providing ideal viewing from the balcony, if there was a balcony. Remember, the beaded screen necessary to boost



the brilliance of 16mm. projection, is like a mirror, and set up the equipment accordingly.

Placing the speakers (note the plural) efficiently requires an understanding of a little acoustical engineering. There are two positive "don'ts." Never set the speaker or speakers on the floor, or on a nearby piano. The floor is too low, and a piano often picks up reverberations from the speaker and distorts the sound. For groups of over fifty, two speakers are advisable, one on each side of the screen. It is simple to mount a jack in the back of the first speaker to permit use of a second, and some makes of projectors come with the speaker attachment provided. This permits a better spread of the sound, and helps to make up for the usual miserable acoustics of the average meeting place. Speakers should be mounted about as high as the middle of the screen. If no portable speaker stand is carried, mount the speakers on a chair on top of a table, or find a hat rack or clothes tree to hang from. Sometimes a small chain and strong picture hook can be used to hang them against the wall. While on the subject of speakers, let's mention that most places where "non-theatrical" films are shown, have no acoustical qualities whatever. As mentioned above, two speakers will help. But, also, in a bare room of excessive echo tendencies, it's best to adjust the

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POST-WAR "DREAM CAMERA"

By JAMES R. OSWALD

MOST movie makers have probably at one time or another visualized in their own mind what they feel constitutes the ideal camera and projector, and many have voiced their opinion on the subject. Manufacturers of motion picture equipment are already planning their post-war products, so now is the time for the amateur cine fan to make known his views in the matter. John Jones, for instance, with whom movie making is just a newly acquired hobby, says: "I like the compactness and simplicity of operation found in my magazine loading camera. There is no chance of the film becoming jammed because of improper threading, and all adjustments and "gadgets" are kept at a minimum to insure good results. That means a lot to me!"

His advanced amateur friend, Bill Brown, who has been taking it all in with a grin, finally says: "All well and good, but wait until you REALLY get wrapped up in this fascinating pastime! Only then will you know the value of a turret front, single frame device, and back winding feature. Yes, simplicity is alright in its place, but if you care to go at this thing seriously, if you demand those truly professional results, you need a camera that is versatile. Whether or not this versatility necessitates "gadgets," depends upon how you define the word "gadget," but a certain amount of accessories ARE essential, of course."

And so it goes down the line . . . each cine fan having his own personal likes and dislikes . . . each forming his own viewpoint of the ideal, post-war "dream" camera. From the typical comments of John Jones and Bill Brown, it isn't difficult to surmise that there is no such thing as a real, all-around, ideal, "dream" camera. While you might give your right eye for a 6 inch telephoto lens that I have no use for, I, on the other hand, might give my right arm for that certain wide-angle lens which would be of so much value to me. Things that one person consider important to his movie making endeavors, are frowned upon as a handicap or a nuisance by another. The needs of each individual cinematographer are so different, the uses to which a cine camera can be put so varied, that a tailor-made job would almost be necessary to construct what each one considers as the "ideal" outfit.

Although I have pointed out that you can argue pro and con any make or model, there nevertheless ARE certain features which, I am sure, EVERYONE desires in a movie camera. Economy is always a big item . . . but not at the sacrifice of quality . . . we ALL like a dependable, precision instrument. When I

speak of economy, I mean not only in the original cost of the product, but more so in the cost of the many attachments and accessories that usually augment our equipment from time to time.

Having discussed the importance of economy and quality, let's turn now towards weight, size, and shape. We all like our cine cameras as durable and light as possible, which probably suggests their construction of some sort of aluminum alloy, as in many models of the past. Weight, to a large extent, is determined by the number of features built into the instrument, and of course is much greater in 16mm. models than in 8mm. Since there is so much room for variance here, all we can do is sum up our requirements as LIGHTNESS with STRENGTH.

In size, as in weight, we don't like to lug around any unessential, cumbersome apparatus just to give the impression that we are carrying something. It goes without saying that when weight is kept to a minimum, size must be also, so nothing more need be said in this respect. Here again, however, 8mm. always takes the lead over 16mm. in compactness.

There are two or three basic shapes which have always been prominent in amateur motion picture cameras before the war, and very likely will be in the post-war cameras to come. The familiar rectangular, box-shaped design, the favorite of one manufacturer in particular, has proved popular over a period of many years. The main advantage of this type is the fact that it will rest flat on a table or other smooth surface, without benefit of a tripod. Most magazine loading cameras belong in this group. These "box" varieties usually have "waist-level" viewfinders in addition to the regular "eye-level" type, a distinct aid in making angle shots with the camera placed on the ground, aimed skyward.

Another basic shape which has been equally as popular as the aforementioned "box" variety, is the oblong type camera. Among different manufacturers there have been many modifications of this basic oblong pattern, but the general shape has remained the same throughout the years. This design also has its good points, one of which is its "straight line" threading feature, enabling both reels to be placed on the same plane, without sacrificing maximum footage capacity.

Lest we become like John Jones and Bill Brown in discussing the ideal, post-war "dream" camera, from here on you're on your own. Film capacity . . . speed range . . . lens types, etc., are purely a matter of personal preferences, which are different in each case, and the best I could do would be to voice my own per-



sonal views on the subject. I've had the upper hand so far, however, and since there have been no complaints, might as well stick my neck out a little further. Should you be inclined to disagree with me, though, remember these thoughts I express are just MINE . . . towards MY ideal, post-war camera.

Because I'm an average home movie enthusiast, this perfect "dream" camera of the future will be designed something like this: In addition to the features which we covered earlier, it will have a capacity of 100 feet (I use 16mm.), be easily adapted to 400 foot magazines, and run at least 25 feet with one winding. It will have a range of about 4 speeds, including 24 frames per second, for synchronizing sound. Provision will be made for back-winding the film in lap-dissolves and double exposures, with an accurate frame counter for this work. A "single frame" device might be included, but would only be used occasionally. More important is a timing device or delayed action release, permitting the cameraman to get into the picture himself. As to lenses, I rather prefer to select my own, but since indoor movies fascinate me so much, an f1.5 or f1.9, in focusing mount, would be my start. For the same reason I would select a wide-angle lens before a telephoto. Were great depth of field required, an additional f3.5, fixed focus lens would be of value for more limited work, where a slower lens speed would fill the bill. A turret front on the camera to accommodate these lenses is a great convenience, I'll admit, but would seldom be used in my work.

This then, is my conception of a "dream" camera which I hope some day will be a reality. But what about the projector? So far nothing has been said about this important piece of equipment which, after all, puts the finishing touch

(Continued on Page 349)

When it's *impossible* to get
what you want

When it's *difficult* to find
what you need —

JUST REMEMBER

that in spite of everything —

YOU CAN STILL HAVE

EASTMAN

NEGATIVES

NOT

“JUST AS GOOD

AS

BEFORE THE WAR”

Actually —

EASTMAN NEGATIVES

are

BETTER THAN EVER!

J. E. BRULATOUR, Inc.
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Filming an "Incident"

By LaNELLE FOSHOLDT

TRY shooting a "war" on a football field. Shooting "wild" is too mild a name for it. Incendiary bombs dropping—fire engines missing you by inches, the noise of the gas alarms and the scream of the sirens are just some of the things that made up a day of "wild" shooting for us when we filmed an air raid incidents drill recently. Not until the rushes came back did any of us have a complete idea of what actually went on.

The Administrator of the Emergency Services of the O. C. D., Mrs. Vella Finne, asked the vice president of the Long Beach Cinema Club, Midge Caldwell, if some of the club members would help solve one of their major problems—showing people their own mistakes.

The next Sunday an "Incident Drill" was to be staged on a football field. They would furnish the film if we would furnish the cameramen. The Civilian Defense group had put on several practice "Incident Drills" in the past, where conditions in time of bombing were simulated and the different units such as fire, police, medical, gas squads, air raid warden, messengers and a control center went into action to combat them. The only trouble afterward when mistakes were mentioned everyone was sure they hadn't made any or it must have been someone else.

Mrs. Finne called a meeting and Midge Caldwell took charge of the photographic plans. Charts were studied where the control, police and medical centers were mapped out on them. Five cameramen were placed in strategic spots to photograph all action in their location, with Midge Caldwell and Vella Finne direct-

ing their attention to errors. They kept one cameraman near them to cover anything extra and assigned two still cameramen to cover the entire territory.

Sunday arrived with not too favorable weather. Cine-cameramen called in were Clarence N. Aldrich, Ray Fosholdt, Frank Tallant, Pat Rafferty and Cliff Lothrop. Bombs fell. Wardens, auxiliary police, firemen, ambulance crews and decontamination squads went into action. Department heads looked on critically for mistakes but the fast shooting cameramen actually recorded them.

Some excellent work was filmed, a lot of minor mistakes revealed and a good many laughs were had over some unusual circumstances. The air raid wardens took such good care of the casualties in one instance that when the first raiders arrived there was nothing but transportation left for them. None of the drills were rehearsed in any part, so the film is an actual recording of the action.

Sightseers who were actually on the program and supposed to cause confusion by picking up bomb fragments and poking around collapsed buildings where people were trapped, put on such a good act that they created lots of amusement for the onlookers and comedy for the film.

The cameramen had been warned to stay away from gas areas but one overzealous chap moved in for a close-up and was last seen being hauled away by the decontamination squad, who took their practice seriously. Luckily it was near the end of the incident and he had all his pictures.

(Continued on Page 348)

Iowa's Health in 16mm.

(Continued from Page 329)

demand; "A Challenge to Infection," a color film on sanitation in barbering which has been referred to by a national barber's organization as marking an epoch in barber education, and "Open This Door," a short supplementary film to the latter.

Then—the first go at synchronized lip narration. It was the early winter of 1942 and the chairman of the Iowa Infantile Paralysis Committee was readying plans for the annual infantile paralysis campaign. He asked the department if a 16mm. sound trailer could be made to personalize meetings throughout the state.

The scenes he wanted offered little difficulty but the matter of lip synchronization with the short talk he hoped to give was something else. How to deaden the sound of the camera was the large item as funds had not permitted purchase of a blimp to go with the synchronous motor.

There was one thing to do. The aid of the state carpenter was enlisted and in short order a satisfactory blimp was at hand. A plywood box was constructed with a layer of rock wool both on the inside and out. It was held in place by cloth covering. A removable glass frame in front gives access to the lens. A similar frame on top provides for focusing. One side of the box is removable to allow entrance of the camera.

The trailer was completed in three weeks and got in just under the deadline for the beginning of the campaign. However, when the campaign was over the latter part of January, the trailer was only getting started. As a matter of fact it is still being shown now and then, campaign or not.

With this success came the courage to try direct synchronization on a location. At this time a script was being written for a film on rural school nutrition which was to be called "Lunch for Johnny." Short speeches for Johnny and his teacher were written into the copy and later successfully filmed in the school room.

Lacking a mike boom, it was necessary to hide the microphone in some other way. For the scene in which Johnny talks the microphone was placed in the ink well in his desk and hidden from sight by the student who sat in front of him. His teacher talked at her desk and the microphone was simply placed behind her books when she spoke.

A mike boom would have made shooting much easier, so now a projector stand has been converted with the use of electrical conduit pipes to serve as a boom. The change was made by removing the center pipe of the stand and replacing it by a seven-foot section of the same-sized conduit. A 12 foot section of three-quarter inch conduit divided into two six-foot lengths is used for the arm. It is

(Continued on Page 342)

FOR ALL TO SEE

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EASTMAN NEGATIVE FILMS

WE ARE pleased to announce that Edward Pyle, Jr., Visual Aid Specialist, has joined the staff of this publication as an Associate Editor. Mr. Pyle will supervise the reviewing of commercial, educational and amateur motion pictures sent in for comment. Mr. Pyle's background in the field of Visual Education, technical experience, and active avocation of many years as a leader in various filming groups, offers much to constructive analysis of films submitted by our readers. We consider it a pleasure to offer this service at no charge to our readers, and trust you will continue to take advantage of it.

"ACME OIL CASE," 500-foot black and white scenario film.

This is apparently a group production of the Indianapolis Movie Club, although no such credit is given. Direction by Dean Smith, and the rest of the crew and cast is too numerous to mention.

The story is a genuine Sherlock Holmes double-murder mystery, with "Holmes and stooge Watson" cleverly solving "who done it." A good deal of credit is due for the titling job. Excellent opening titles, with the large cast introduced on several flip over cards. Clean, good sized white hand letters are used, on a pleasing neutral dark background, affording good contrast and perfect legibility. Titles are a conspicuous weakness in many scenario films, particularly when a lot of dialogue is attempted. However, the "ACME OIL CASE" is decidedly an exception to the average. Sub-titles for the dialogue were frequent and very well cut in, indicating that the editors were thoroughly familiar with the titling of the old-time silent movies.

Several scenes called for night-time effect exteriors. These were especially well handled, probably with the use of a chemical fade on a regularly exposed daylight scene. Some nearly perfect chemical fade-ins and fade-outs separated various sequences appropriately.

The film really has only two minor imperfections. First, the 500-foot, 8mm. length could probably be effectively reduced. And secondly, the illumination on many of the light colored interior walls was excessively "hot." The actors were usually lit O. K., but too brilliant walls detracted from the action. The all-important subject of wall illumination is too thoroughly explained and illustrated in the August issue of the American Cinematographer to be repeated here. Aside from these two points the "ACME OIL CASE" is one of the best amateur scenario films viewed for some time, and

the makers can well be proud of such a finished product.

"CRADLE OF LIBERTY." Documentary film, 400-foot black and white. Home-processed on Dupont sound recording positive. Filmed by G. B. Burnwood.

The outstanding feature of this reel is the excellent quality of Mr. Burnwood's home-processing, which is equal to the best laboratory work. Clear photography, good composition and camera angles, well edited throughout; however, the use of very inferior titles definitely detracts from the good points of the reel. There are plenty of titles, all of which are well worded and of about the right number of words, BUT the size of the letters is so small that they are most difficult to read. The camera could easily have been moved in closer to the title board, to thus provide larger and legible letters. Apparently bad luck in processing, or else underexposure made most of the titles barely discernible on the screen; this combined with too small letters defeated the purpose of the titles.

Of historical interest are the many views of homes, buildings, etc., in and around the city of Philadelphia. These scenes are all well exposed, with the possible exception of some of the close-ups of inscriptions on statues and buildings, which had an overexposure tendency. In filming such historical edifices we sometimes forget our medium, namely, that we are using MOTION pictures. Like most such films, this one includes many static, motionless "postcard" shots. This effect can usually be avoided by having people, cars, etc., in some or most of the scenes. Of course, he may have intentionally avoided such action if he thought the costumes or cars would "date" the film. Even so, this reviewer would prefer fewer "postcard" scenes.

Aside from the misfortune of inferior titles, this film is generally well handled.

"HUBBY FINDS A HOBBY." Scenario film, 300-foot, 16mm. black-white. Filmed by C. H. Benjamin.

This is a good example of planning a film, following the plan with generally good results. The story starts with hubby and wife, in the living room, discussing the bare wall space over the radio. She notices an ad for an art exhibit. She goes downtown to Greenwich Village to look over various sidewalk displays of paintings. Hubby is seen at home, unwrapping a large box of oil paints, brushes, easel, etc., and proceeds to engage in his new hobby and applies paint to a canvass on an easel. Wife comes home, rather abruptly, carrying apparently a painting she had purchased. She sets it down and then pro-

ceeds to hold up against the wall several paintings, one after another. These are no doubt the ones hubby was supposed to have painted during the time she was downtown. The film abruptly ends.

As for treatment, Mr. Benjamin skillfully uses some double exposed titles, and lap dissolves. An effective filming of the wife, in closeup, within a picture frame, and again, himself in the same frame. These closeups are well photographed, with a jet-black background, and he carefully fades in good white letters across the bottom of each introduction the names "Hubby" and "Wife."

Let's hope hubby has not forsaken his home-movie hobby, for that of painting, and can find time for both.

"SUMMERTIME." Travelogue, 250-foot, 16mm. Kodachrome. Filmed by C. H. Benjamin.

This reel shows some views about a lake, and scenes of flowers growing in the fields. In general the photography is good, with exposure a little on the "under" side. This effect, however, is decidedly offset by this filmer's use of excellent double-exposed titles. He frequently applies smooth lap dissolves effectively. Although he has his wife appear in some of the scenes, the reel would have more interest if it had more genuine closeups, which handicaps many films.

"RAILS ACROSS THE COUNTRY." Documentary film, 400-foot black and white. By C. H. Benjamin.

This reel is just a series of views of trains passing, some shots of a roundhouse and switching yard, and numerous sky and cloud shots. General photography is consistent, all too dark, indicating under-exposure or excessive use of dark filters while not allowing for same by opening up the lens. The title does not seem to be too appropriate, as most of the views of trains seem to be in what appears to be one location. This filmer apparently was fascinated by trains, but needs a little more variety of locations and camera angles to make his reel interesting to others.

Consistent with other films he has made, Mr. Benjamin is a past master in the making of titles, with a splendid opening title and excellent sub-titles, using clear white letters double-exposed on a good neutral dark scenic background without too much detail. He avoids the weakness of many title makers, of using too elaborate backgrounds for sub-titles. His fine titles largely make up for the dark monotone of his subject.

(Continued on Page 340)

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Nude But Not Lewd

(Continued from Page 323)

"The strict taboos that have been placed on commercial photographers regarding the subject is largely due to these amateurs whose efforts too often result in a picture anything but lovely."

But if Maurine has little patience with these amateurs, she has even less for the nasty-minded little people who insist the only reason for wishing to photograph nudes is to see a "beautiful young girl with her clothes off."

"It's too ridiculous," she says. "Photographers do not feel that way about it at all."

"Faces speak to you. So should bodies. They should express moods, temperament, animation. Many of them do not because the person has, for any number of reasons, various inhibitions, frustrations, complexes. . . . Many people have been trained from childhood to regard the body as something to hide, something of which they should be ashamed."

"In reality, the body should be something beautiful, like the fluid, graceful lines of a beautiful painting, or the lines of music, poetry or any of the arts."

"Nudes are not easy to light, and are difficult mainly because the desire is to capture the charm of the figure as an entirety. Limiting it to one angle usually fails to convey the beauty of the whole."

"Occasionally the beauty of pleasing lines is sufficient in itself. But not always. I strive for a pleasing composition of the figure, and then try to express through it a feeling of life and animation."

"There is a finely drawn line between warm, stirring beauty and suggestiveness of an unpleasant nature. It is the photographer's business to sense this difference, and the slightest change of pose can easily alter what would be truly beautiful to something unsavory, even ludicrous."

"I particularly like the body to assume an attitude of naturalness. These wierd positions, with neck drawn out of line, body apparently resting on nothing more substantial than thin air, are silly to me. It isn't a pose one would naturally adopt sans benefit of camera, then it shouldn't be in the picture. Natural lines and feeling are best. Doing things you would not naturally do make an awkward picture."

The above nude is also by Maurine, who says it is exotic but not well lighted, because it was made from the red negative of a color shot.

"I have no preference as to beauty," she says. "If it's beautiful—that's good enough for me. However, I do think that, for photographic purposes, the dusky, deep-toned skins are best. Blondes with strikingly fair skin are lovely to look at, but less photogenic. At least, that's my personal opinion. That's why many of my studies are of the native, or island, type."

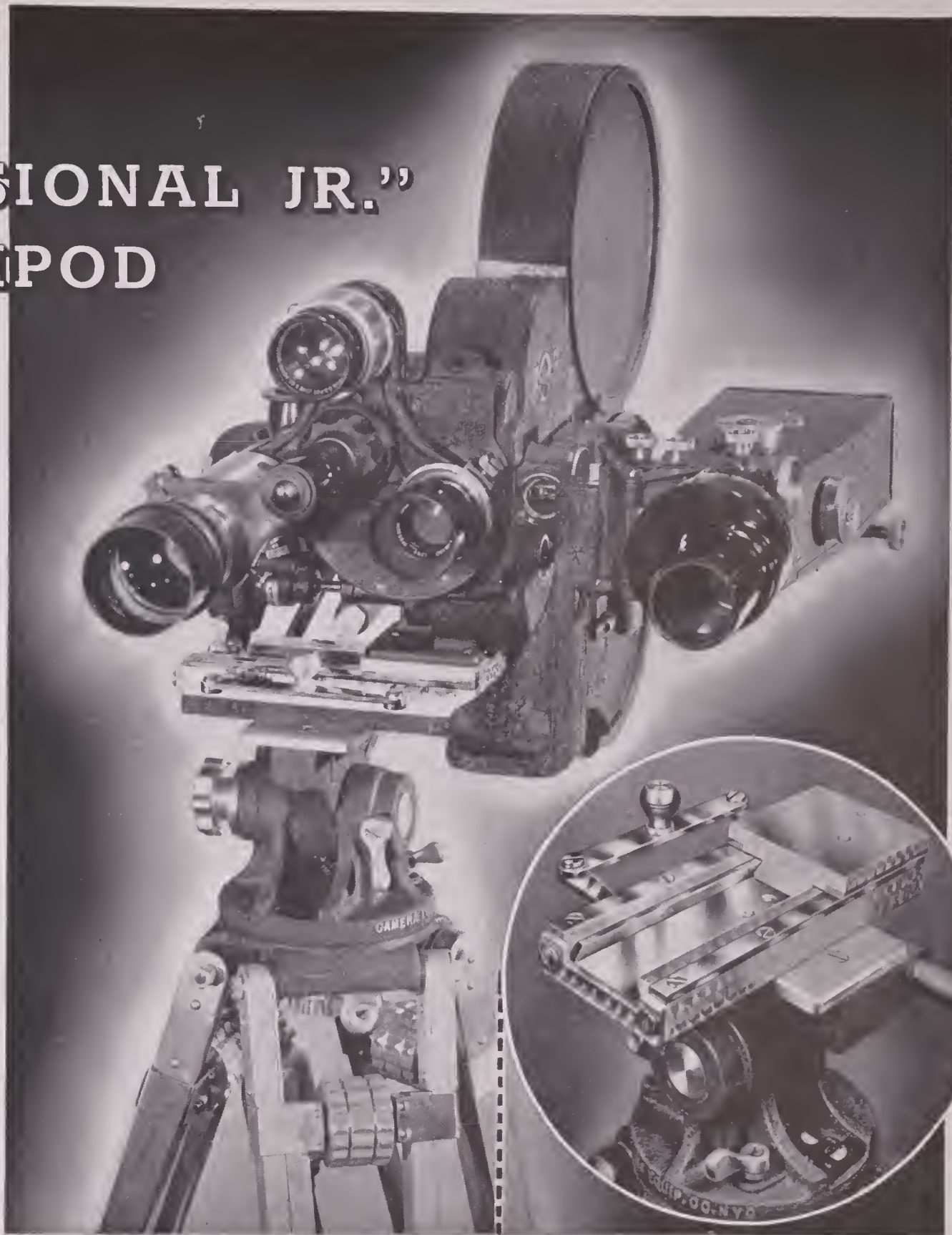
"Photographing nudes is really a challenge to one's ability. It's a game to see if you can get the proper lighting and pose."

"Frankly, nudes are not commercial. Where can you sell them? For calendars, posters? Very few places, really. And then there are such strict regulations as to just how the anatomy may be exposed, and what portion of it must be in light and which in shadow. It really doesn't pay for all the effort involved—if you consider it from a dollars-and-cents viewpoint."

(Continued on Page 344)

THE NEW "PROFESSIONAL JR." * TRIPOD

WITH REMOVABLE HEAD



The B & H Eyemo camera shown here mounted on the "Professional Jr." Tripod and Shiftover has been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

*Patent No. 2318910

Unsurpassed in Quality, Versatility and Rigidity

★ The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this 14 lb. superfine tripod. The tap-plate can be set for 16mm. E.K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Jr." Tripods and Cameraquip Shiftover Alignment Gauges are used by the U. S. Navy, U. S. Army Air Bases, Signal Corps, the Office of Strategic Services and other Gov't Agencies—also by many leading Newsreel companies and 16mm and 35mm motion picture producers—for important work.

SHIFTOVER ALIGNMENT GAUGE

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing-type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking device.

★ The Shiftover has a "snap-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to tap-plates of tripods having 3/8 or 1/4-20 camera fastening screw.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.

1600 BROADWAY NEW YORK CITY

Among The Movie Clubs

Home Movie Previews

(Continued from Page 336)

"SPIKE BECOMES A SCOUT," 1000-foot Kodachrome, silent, with accompanying narration synchronized on three 33 1-3 speed records.

It was supervised by Mr. Conway, and was intended as an enlistment film to encourage boys to join the Boy Scouts. The members of Troup 5, Onondaga Council, Boy Scouts of Syracuse, New York, contributed their splendid acting ability and other assistance.

Briefly, the story shows "Spike," a city tough kid, being taken along on a summer camping trip with the Scouts. Spike is skeptical of the benefits of Scouting, but after various demonstrations by the Scouts is finally convinced and joins up.

The film is an excellent culmination of a worth while project. Photographic treatment, direction, acting, story and narration are each indicative of the skill and a lot of hard work of the Scouts, leaders and others contributing their efforts. Synchronizing the descriptive narration, on three recordings, in itself presented many complications, but the results are exceptionally good. Mr. Conway supplied a specially prepared stroboscopic disc about four inches in diameter, to enable 16mm. projectors to be run at the normal speed used when the recordings were made. Another "strobe" was supplied to set the record speed to exactly 33 1-3 rpm.

The plan was to charge a fee of \$7.50 per showing before various civic groups, to attempt to reimburse the sponsoring group for the cost of production. A good sum was taken from the first local

(Continued on Page 345)

Frisco Cinema Club

TWO interesting films were shown at the August meeting of the Cinema Club of San Francisco. They were "King's River Canyon—on the Sky-line Trail," 16mm. Kodachrome, and "Listen to Britain," 16mm. black and white.

The Kodachrome feature was loaned to the club by the Sierra Club, and proved to be a color sensation. Most of the members declared, after seeing it, they will never be happy until they have a chance to film the beautiful and awe-inspiring Sierra scenery.

"Listen to Britain" is a film made by the British Information Service, and highlights the sights and sounds of the British people working, playing and fighting in a country at war. It made a tremendous impression on the club members.

The meeting, well attended, was held at the National Defenders' Room of the Women's City Club on August 17. On August 24 the club's technical group met for a discussion on "Composition."

Syracuse Movie Makers

MEMBERS of this club were very active during August, holding three meetings. One at which they reviewed member films, another for election of officers and the third a special lawn party showing at the home of member Arthur E. Tucker.

Long Beach Cinema Club

ON AUGUST 18th members of the club met at Quality Laboratories of Sam E. Tate. Tate took them on a tour through the processing plant and explained in detail each evolution in the processing of a motion picture the club members had filmed at their August 4th meeting. It is believed this is the first time any amateur club has taken its members into a plant to actually watch the development of its picture. The affair proved extremely interesting.

Utah Cine Arts Club

FOUR interesting films were shown at the August meeting of the Utah Cine Arts Club, held on August 18th at Jordan Park, Salt Lake City.

The films were: "A Trip Through Yellowstone," Kodachrome, by G. Van Tussenbroek; "The Sea Gulls," Kodachrome, by Raymond B. Hollbrook; "In the Beginning," by Fred C. Ells, and "Early Summer," by (don't gasp) Tatsuchi Okamoto, of Japan (of all places).

Outstanding of the group was "In the Beginning," a reverent account of creation, with titles from Genesis. This picture was a Grand Prize winner in a competition sponsored by the American Society of Cinematographers.

Following the showing of the films, the members participated in an interesting open forum.



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Reversible. This 16mm film comes in 50 ft. and 100 ft. rolls. "Twin Eight" Hypan Reversible is available in 25 ft. (double-width) rolls. **Agfa Ansco, Binghamton, New York.**

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8mm and 16mm
HYPAN REVERSIBLE FILM

KEEP YOUR EYE ON ANSCO—FIRST WITH THE FINEST

Iowa's Health in 16mm.

(Continued from Page 334)

fastened to the upright with a metal sleeve bolted to an old Simplex idler wheel. The wheel turns to raise the arm and it can be swung in any direction. By simply pulling out the main upright and replacing the original pipe, the stand can be reconverted at will to its intended purpose.

The mike boom will be used for the first time on an outside semi-long garden shot in the cancer picture currently being filmed. This won't be the only innovation, however, in this picture. In it, for the first time, animated drawings also will be included.

The script calls for animation to show the growth of both normal and malignant cells as well as spread of the latter throughout the body. For these scenes a solid rack has been built with pins to register up the drawings. Kodaloid was used to make the drawings.

Scripts for the department's films are written by a layman but for technical accuracy an outline of the central facts desired is first drawn up by the doctor, nurse, engineer or other professional person for whom the picture is being produced. The major difficulty in this regard is in reconciling the natural differences of treatment between the lay writer and the professional personnel.

Before the outline is prepared a conference is held and agreement reached on the nature of the precise type of audience before which the film will be shown. The nutrition film, "Lunch for Johnny," illustrates the process.

It was quickly conceded by both the nutritionist and the lay writer that the film had to be given a rural slant but further breakdown was necessary. The film was to serve one purpose, that of stimulating school lunch programs. The strongest impetus for good lunches comes from rural women, students and the teachers, so the final decision was to regard them as the central audience.

From her experience in the field, the nutritionist understands the varying reactions, pro and con, of these groups to lunch programs. She was asked then to prepare her outline with them in mind and to aim her points according to their mode of thinking. In this way she was able to start her outline with and weave it around preconceived attitudes familiar in themselves to the selected audience and thus provide a solid base for the script.

Similar selection of audience and direction of outline are practiced with all the pictures. The script is written from the outline which is only of points and not of continuity and after the first draft, successive drafts are worked out jointly by the lay writer and division head involved.

Briefly stated the policy for both outline and script is:—begin with what the audience already knows to put them in agreement with the film, to nod their

RCA-Equipped Land Cruisers Help Navy Recruit Waves



THREE-WAY sound reproduction equipment specially designed and produced by the RCA Victor Division of the Radio Corporation of America for use in Navy Recruiting Cruisers of the truck-and-trailer type has proved highly successful in a year's operation of eight such land cruisers in various parts of the country.

Adapted for broadcasting phonograph recordings, radio pickups and live talent and speakers at a microphone, either

heads and say, "Yes, that's the way it is"; superimpose the new ideas the film is to relay to them with the hope that the positive "yes" will continue.

This cooperation has ironed out much of the grief which certainly would arise if both parties were to go their own by the ways. It also makes it easier to hold to the original purpose of the film which is thoroughly discussed before everything else in order to stick to one or at most two lines of thought.

Acting talent is readily available. A doctor, nurse, or public health engineer is needed. The department has all three. A farm woman, school teacher, lifeguard or pharmacist is wanted. They're not hard to find. Most people still like to see themselves in pictures and when there is sound, too, that makes it a double feature.

It's true that to date neither a Spencer Tracy nor a Bette Davis has been discovered, and it's also true that Hollywood isn't passing out any Academy Awards for these pictures, but Iowa exhibitors are holding out their hands for bookings and coming back the second time. That's all the state health department wants.

separately or mixed, the installation in each cruiser includes four loud speakers driven by two 15-watt amplifiers.

To meet power requirements under all conditions, each unit is equipped with a gasoline driven generator producing 110-volt AC current, cables to run to standard local power service where outlets are available, and storage batteries for emergency use.

Telephones, operating on low-voltage current, self-generated by the action of the speaker's voice on the diaphragm, provide means of communications between cab and trailer, whether parked or in motion.

Stoll Anniversary

WITH the week ending August 7th, 1943, Clarence G. Stoll, president of the Western Electric Company, reached his fortieth anniversary with that organization.

Mr. Stoll joined Western Electric as a student apprentice in its Clinton Street Shop in Chicago, after graduating from Pennsylvania State College in 1903. After a succession of promotions in the manufacturing department, he became vice president in 1926 and was elected to the presidency in 1940.

He was in charge of the Company's factory at Antwerp, Belgium, in the World War year of 1914. Today, after more than 25 years of executive responsibility in operating in peacetime the world's largest telephone equipment business, he is once again directing in wartime a great establishment committed to the job of furnishing more than a third of America's production of military communications for the Allied Nations.

On With the Show

(Continued from Page 331)

tone control on the high side. Most of the normal "highs" are lost on 16mm sound tracks, particularly on reductions from 35mm., hence the excess low tone must be compensated for by proper projector tone control.

It is a good plan to tie all cables at each end to the leg of a table to prevent the audience from tripping over the equipment.

To conclude this treatise, I will list the accessories I have found necessary and frequently useful. The normal fifty foot speaker cord is often too short, if you want to make it inconspicuous by running along the sides of a room, so I carry a spare seventy-five foot cord. Three 25-foot electrical extension cords, heavy enough to carry the load of a 1000 watt lamp, enable you to reach any outlet with the shortest possible length of cord. Several different types of double plugs and adapters come in handy. A couple of extra 30 amp house fuses, and, of course, extra projector fuses, exciter lamps and projector lamps are needed. Two pieces of small link chain enable the speakers to be hung from a clothes tree, or from some strong picture wall hooks also carried. A roll of ordinary picture wire has many uses, such as tying the speaker cord to a pillar in case of stretching it overhead, or wiring the cables to chair legs to prevent tripping damage. Very useful gadgets are four ordinary dime store rubber door wedges. These can be used under the projector table to level it up, or under the projector itself to provide greater tilt. A pencil flashlight in the pants is handy for emergencies.

For daytime shows, try in every way to darken the meeting room. If this is not entirely possible, project a smaller image on the screen so that the picture brilliance can be normal. Arrange with an audience member to turn the lights off and on at a signal.

So that the "non-theatrical" audience can fully absorb the visual message without being aware of the technical limitations of the film and equipment, the exhibitor must apply sufficient mechanical aptitude and showmanship to assure an efficient presentation — on with the show. END.

Mitchell 35mm Single System Sound Camera

(Continued from Page 330)

portable amplifier which has two microphone connections with two mixing pads and one main gain pad which feeds the galvanometer. The amplifier used with the RCA galvanometer is a push pull type, Class B amplification which results in automatic noise reduction. The sound track is positioned a standard distance ahead of the picture aperture.

The Mitchell single system sound camera is a compact portable unit which can be used in the field of action by our fighting forces, making an instant record



Colonel MacDonald and Friend—a 35mm. Model A DeVry

... SAID THE MAN WHO
Directed Its Filming
 "For field service our cameras had to be light and rugged. I would estimate that around 95% of 'DESERT VICTORY' was ground through DeVrys, whose performance and ability to stand up under gruelling desert punishment constantly surprised us!"
 (From "FILMING DESERT VICTORY" by Lt. Col. David MacDonald Hon. A.S.C., as told to the late Wm. Stull, A.S.C.)



—for Excellence in the Production of Motion Picture Sound Equipment





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of both picture and personal reaction in sound of the action that has taken place before time has had an opportunity to dim the memory. The camera is also suitable for photographing from airplanes explaining the tactics used by the enemy.

This camera has a great post-war future which will enable the studios, newsreel photographers, and commercial advertising men to go on extremely difficult locations without being burdened with excess amount of equipment and still maintain the high quality picture and sound.

BUY
MORE
BONDS

Nude But Not Lewd

(Continued from Page 338)

"Then, too, every prospective buyer knows exactly what he wants—or thinks he does. He has his own individual concept of beauty, and you can't swerve him from it. Now, add to the regulation difficulties of nudes, the whims of a buyer, and you can plainly see that our problems are multiplied a thousandfold.

"To begin with, there are very few perfect bodies. And, of course, we seek perfection, even though we seldom find it.

"It's often amusing to see how a model looking for a job will try to hide her defects. If she has a tummy—and most otherwise beautiful girls do—she doesn't want you to suspect.

"So she 'lifts' the body, as we say. Draws the abdomen in, raises the breasts, takes a deep breath and holds it. Then calls your attention to it—'See, I have no stomach at all—I'm perfectly flat.' She is, too, until she forgets for a moment and relaxes. And then that tell-tale tummy heaves into unsightly view.

"To correct this flaw, the photographer must be extra careful of pose and lighting. He will usually have the model reach heavenward—that pull draws the stomach muscles up and in. But it's only a camouflage, and we know it.

"It's really amazing what things you discover when you look into the ground glass and note with desperation things you hadn't noted till then.

"What appeared perfection at a casual, appreciative glance, on closer analysis discloses a little knob on each hip, and abrupt, unpleasant dip above the thigh, one bust distractingly smaller—or larger—than its mate, protruding, knobby ankle bones.

"Then there's always that abdomen we mentioned a moment ago, and that must be kept trim by stretching the torso up, and holding the breath as long as possible.

"Elbows have their own unique manner of acquiring sharp points when viewed through the ground glass. And hands and feet, too, often look like something the model forget to remove with the rest of her clothing.

"If you can manage to forgive these failings and convince the model that you are thoroughly pleased with her,

then you're off to a good start. You've created a spirit of confidence and cooperation. And that's really important. The model must be relaxed and capture your own enthusiasm to create a 'thing of beauty.' That is not possible if there is friction between model and photographer; if there is strain it will show.

"It is fatal if you are critical and the model knows it. She will never be relaxed, and gone are your chances for getting a good picture.

"My favorite nude took me seven hours to get. (See why I insist nudes are not commercial?) I was determined to have it right. And so was my model. Luckily, she has an almost perfect body, so there were no weighty problems of camouflaging to consider.

"However, the lighting was difficult. What I desired to achieve was just the suggestion of feminine line and contour, without exposing any part of her anatomy to full view. Therefore, every line has to be just so. If she moved even a fraction of an inch the ensemble was thrown out of line, the beauty of the unit was broken.

"We posed and we changed lights, and we worried and we worked. Several times, just as I thought I had it, the model tired and had to rest. But we persevered, and eventually got what we wanted.

"The result was all that I had hoped for. Every line, from head to foot is perfect. There is just the suggestion of feminine face, neck, arm, breast, abdomen, well-round hip, thigh, calf, foot. In its simplicity of line and tonal quality it resembles a woodcut. I consider it my best nude.

"Did you know that I do all the make-up for my subjects? That's a little art I learned when I was 'standing in' for Jeanette MacDonald a few years ago, before I became interested in photography. As a matter of fact, that's where I first became interested in photography.

"I pestered the cameraman to explain certain shots to me. Got them to tell me why and how they did thus-and-so until they nearly went mad. And when I told them that in five years I would be the best photographer in Hollywood they howled and brushed me aside. But they did teach me all their tricks, for which I'm grateful.



"Another thing—I show my subjects what I want them to do, what I'm trying to achieve. I'm not an actress, the Lord knows, so when I go into one of my poses to get the idea over, they probably think, 'Well, if she doesn't mind making herself ridiculous, why should I?' That's one reason that most of my studies seem relaxed and at ease.

"So when I make them up and pose them exactly as though they were going before the critical eye of the motion picture camera, the result is that each finished photo is like a little 'frame.'

(Continued on Page 350)

*On the Spot
in the*

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*The Most Complete 16mm
Sound Motion Picture Studios in the East*

FROM SCRIPT TO SCREEN

DeVry Asks Amateur Aid For New Camera Design

JUST as the radio industry turned to the world's "HAMS" on certain television problems which had "stumped the experts," so one of the world's leading manufacturers of motion picture equipment is giving the amateur and professional "movie maker" an opportunity to contribute to the redesigning and mechanical refinement of the 8mm. motion picture camera and projector, which it is believed will be tomorrow's home movie unit.

Invitation to take part in a general 8mm. motion picture camera and projector design competition has been issued by Wm. C. DeVry, president, DeVry Corporation, son of the late Dr. Herman A. DeVry, inventor and manufacturer of the first portable motion picture projector. This invention brought motion pictures to the classrooms and crossroads of the world.

The design competition starts September 1 and closes December 31, 1943. Awards of \$1500 in U. S. War Bonds will be made for camera design and mechanical ideas, including over-all redesigning of both camera and projector and suggestions as to the mechanical refinement of both units—ideas that make filming and projecting simpler, easier—ideas that may reduce the cost of manufacturing this equipment, thereby increasing the size of its market.

Of the competition, Mr. DeVry says that it is launched in response to scores of letters he has received from movie makers asking what mechanical developments in motion picture equipment can be expected out of the war. Many of the letters, Mr. DeVry adds, contain voluntary suggestions, developed out of the writer's experience.

"What 8mm. development needs," Mr. DeVry explains, "may be a complete redesigning of both camera and projector to fit them to the needs, desires and uses of the average amateur motion picture enthusiast. We hope the amateur will give us for his equipment the kind of cooperation we had from Hollywood cameramen and theater projectionists in developing our professional line."

In regard to mechanical improvements, Mr. DeVry points specifically to fundamental camera and projector requirements, such as shutter, view finder, film safety devices, lamp house ventilating systems, focusing and framing devices, etc. "Maybe we've taken the efficiency of these for granted, as other manufacturers have taken baby carriages, kitchen furniture, washing machines, and so on. Suddenly some user

leaps the barriers and gets the ear of a manufacturer with an idea that revolutionizes the industry. We're inviting that kind of idea."

The 8mm. camera and design competition is being given wide publicity by DeVry, its distributors and its dealers. It is anticipated that awards can be announced by February 1, 1944. Any new models developed out of the competition, however, will have to wait till war's end, since DeVry's facilities are now devoted 100 per cent to vital war material. For excellence in the production of motion picture sound equipment DeVry has been awarded the Army-Navy "E."

Home Movie Previews

(Continued from Page 340)

showing, but subsequent bookings were almost nil. Mr. Conway particularly asked for suggestions as to how the film could be exploited, so the makers could get back their cost, plus a little income for Troup 5. He had already shown it locally, and had largely exhausted its commercial value there.

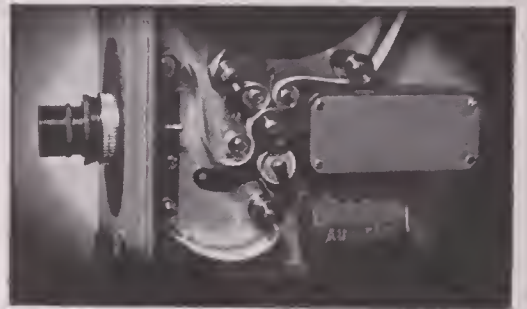
As to its potential use in other districts, the technical difficulties in presenting the film, limit its use to the very few projectionists (amateurs) who might have a 33 1-3 record player, and be interested enough in the Scouting movement to attempt to properly present the film, and try to keep the records synchronized. This reviewer found the problem more difficult than anticipated.

In the first place, 33 1-3 rpm. record players are hard to find. And the average amateur's 16mm. projector will not take the 1600-foot reel on which the film is mounted. Sound projectors will take the large reels, of course, but only a few of the older models have the variable speed control needed to synchronize the projector speed with the record player. The stroboscopic disc supplied for attaching to a projector would not fit either of two projectors available for this reviewing, hence the synchronizing had to be done by guesswork, and I do mean work—constantly adjusting the projector speed to attempt exact synchronization. This strobe disc probably only is readily attachable to the particular make and model of the producer's machine.

(Continued on Page 350)

Auricon SOUND CAMERA

for 16 mm sound-on-film



- ★ High Fidelity Sound
- ★ Self-contained in sound proof "blimp."
- ★ Minimum equipment; maximum portability. Camera and Amplifier, complete, weigh only thirty-seven pounds.
- ★ Kodachrome or black and white pictures with Auricon sound track will reproduce on any sound-film projector.
- ★ Can be operated in the field from an Auricon Portable Power Supply.
- ★ Auricon Camera with type "C" lens mount (but without lens) and Amplifier complete with microphone, instructions, and cases \$880.00



AURICON 16 mm RECORDER

- ★ Variable-area sound on film, for double system recording with a synchronous motor driven 16 mm. camera. Amplifier has background-noise reduction and mixers for combining speech and music. With dynamic microphone, instructions and cases for Recorder, Amplifier, Accessories . . . \$695.00
- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

AURICON Division,
E. M. BERNDT CORP.
5515 SUNSET BLVD., HOLLYWOOD, CALIF.

**MANUFACTURERS OF SOUND-ON-FILM
RECORDING EQUIPMENT SINCE 1931**

Fighting With Film

(Continued from Page 325)

sound equipment. If one man is killed, another takes his place immediately, each man being trained to operate any of the cameras in use. He can load the camera and operate it himself, and also operate the sound apparatus if he has to as there must be no waste or loss of time in recording on film all that can be of use. And they will do more and more in each succeeding month. Just recently a throat microphone was developed that will enable the wearer to be right in the thick of combat, his voice recording all that is going on about him, unaffected by the sounds of guns, motors or explosions. That this will be put to good and expert use will shortly be seen. But it will probably not be known to the general public until after the war, just what

purposes our units are being put to. But they are fighters, all of them, not only with film but with guns and brains."

Another vitally important job being performed by the Air Forces' First Motion Picture Unit is the making of training films for the Air Forces to use in training its flying cadets. These films must be precise and accurate, so great care is exercised in the selection of the personnel to make them. The leaders and most of the men helping them have been recruited directly from the studios in Hollywood. Lt. Colonel Owen Crump is in charge of production.

Thus it may be seen that Hollywood's Aces of the Camera and Hollywood's production geniuses are playing an important part in the world struggle.



Captain Clark Gable, left, and Major R. W. Seawright discuss camera angles during filming of "Wings Up."

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Princeton Additions

Recent additions to the editorial, production and executive personnel of the Princeton Film Center, Princeton, New Jersey, include A. E. Milford and Leroy G. Phelps, formerly with the domestic film production unit of OWI, and Gates Ferguson, recently a member of the public relations staff of N. W. Ayer & Son, Inc., and former advertising manager of B. F. Goodrich and International Telephone and Telegraph Corporation.

Filming Rainbows

THERE'S nothing quite so breathtaking in a color film as a gorgeous rainbow glowing either in the sky or shining in the spray of a waterfall. The colored band seems to be completely polarized as evidenced by the fact that it will appear and disappear when viewed through a rotating polarizing filter.

This curious fact becomes very useful when it is noticed that the background of sky is actually suppressed in tone when the rainbow appears at its brightest. This points to a way of making a rainbow actually photograph more brilliantly than it would under natural conditions. Just shoot the rainbow with the handle of the polarizing filter parallel to the middle of the bow and it will record with dazzling intensity. Be sure to allow a filter factor of about a stop or so because of the absorption of light in such a filter.

Because the spectrum band is rendered apparently brighter through a properly orientated polarizing filter, it is possible to see secondary rainbows with the greatest of ease even though they are invisible to the unaided eye. This fact may prove of value to meteorologists.

I have actually filmed rainbows in color with a polarizing filter and this method really works extremely well. Try it next time you see one.

CHARLES H. COLES.
2nd Lt., Sig. Corps.

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Hollywood and Minorities

(Continued from Page 327)

of the issues involved in this war and our common aim in destroying Fascism with all of its theories, including that of racial superiority. Pictures like "Gungha Din" and "The Lives of a Bengal Lancer" contributed much to the friction between whites and colored in India. "Four Feathers" vilified African natives. "Down Argentine Way" and certain Westerns in which the villains were Mexicans antagonized our Latin-American neighbors. Films showing only Negro servants or crap shooting comedians certainly do nothing to contribute to unity at home between the white and black man who is fighting side by side. We must never lose sight of the fact that there are hundreds of millions of people on our side who are colored, and Fascist bullets aimed at the fighters for democracy are not marked "white" and "colored." Fascism is against all people, white or black or red or yellow.

Of course, an article of this sort would not be quite fair if it did not give due recognition to the fact that Hollywood as such is not the deciding factor in these matters, that on the contrary, the studios have done a great deal toward eliminating racial discrimination and prejudice. But more often than not their honest efforts are stymied by censorship. The finest example of Hollywood's attitude on racial questions was exemplified several years ago when at the Academy Awards Dinner, Hattie McDaniel was acclaimed for the greatest supporting performance of the year for her work in "Gone With the Wind." More than 10,000 members of the creative personnel of Hollywood voted her that honor over all the white actresses, and never in the history of the Awards has such an ovation been given a player as was given that splendid colored actress that night.

Fortress in the Sky

APPPOINTMENT of the Princeton Film Center of Princeton, New Jersey, as distributors of **FORTRESS IN THE SKY**, a three-reel Kodachrome film documenting the Boeing Flying Fortress, has just been announced by Harold J. Mansfield, Boeing's Director of Public Relations.



DeVRY CORPORATION WILL AWARD \$1500.00 IN U. S. WAR BONDS TO YOU WHO HELP DESIGN THE 8 MM MOTION PICTURE CAMERA & PROJECTOR OF TOMORROW

You've thought a lot about the perfect 8 MM MOTION PICTURE CAMERA & PROJECTOR... how they should look... how their operation might be perfected, simplified.

DeVRY will pay \$1500.00 in U. S. War Bonds (maturity value) for your over-all design ideas... for your suggestions as to how camera & projector mechanism can be improved.

DESIGN: Submit your Ideas—in rough or finished drawing—as to how you think the new 8 MM MOTION PICTURE CAMERA or PROJECTOR should look. Supplement your drawing with brief comments, if you desire. Enter as many drawings as you wish. **MECHANICAL OPERATION:** You may submit working models, mechanical drawings, rough sketches. *The idea is the thing*—how to simplify, improve, perfect either camera or projector operation. For instance, PROJECTOR: ventilating system (lamp house); optical system; film movement; reel arms; tilting device; film safety devices; take-up, framing, focusing and shutter mechanisms, etc. Can you suggest particular developments of these features. CAMERA: (single or turret lens mount) view finder; shutter, footage indicator; loading mechanism; winding key; exposure guide; lens mount; focusing; single frame release mechanism, etc.

Design ideas must be original, practical. Mechanical suggestions must be original and contribute to the over-all simplicity and effectiveness of operation of either camera or projector mechanism. Art or design ability not essential! You don't have to be an artist to enter this competition. You may supplement your designs, drawings, or models with written explanations. You may get an artist, or designer to help you.

FOR FULL PARTICULARS & OFFICIAL ENTRY BLANK—MAIL COUPON TODAY →

HERE ARE THE 26 AWARDS	
FOR CAMERA DESIGN	FOR PROJECTOR DESIGN
1st Prize.. \$200.00 in War Bonds*	1st Prize.. \$200.00 in War Bonds
2nd Prize.. 100.00 in War Bonds	2nd Prize.. 100.00 in War Bonds
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6 \$50.00 U. S. War Bonds for the six best individual mechanical ideas.	6 \$50.00 U. S. War Bonds for the six best individual mechanical ideas.
4 \$25.00 bonds for the four best supplemental designs, or mechanical suggestions, contributing to the over-all camera design and operation.	4 \$25.00 bonds for the four best supplemental designs, or mechanical suggestions, contributing to the over-all Projector design and operation.
<small>Contest closes at Midnight December 31st, 1943. Awards will be announced on or before February 1st, 1944. Do not contribute anything until you have read full particulars of the competition and signed and returned Official Entry Blank. See coupon below. *All War Bond amounts are of maturity value. In case of ties, duplicate awards will be paid.</small>	

Do not send us your design suggestions or your mechanical ideas until you have carefully read the conditions of this competition. Simply send your name and address and we will see to it that complete information, Official Entry Blank and certain suggestions from our Engineering Department are sent you by return mail without any obligation whatever, FREE.



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in the Air—

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Optical science together with our craftsmen, doing their duty on the job in the production line, will hasten victory.

Our production is keyed to fill the requirements of our Government, and of others on orders with priority certificates. "GOERZ AMERICAN" lenses for civilian use will again be available after Victory.

To hasten Victory —
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Filming an Incident

(Continued from Page 334)

Several others were chased out of bomb zones by air raid wardens who weren't used to having photographers in the way. Finally the officer in charge announced over the loud speaker that the photographers were part of the drill. One interesting part of the film shows a bomb crater situation with hydrants and water mains out and the fire department utilizing its suction hose to drain the crater and put out fires.

The gas incident was well photographed. The air raid wardens reported to the gas reconnaissance officers who came and made a test with their sniff-kit and pronounced it mustard gas. This brought out the area decontamination squad dressed in rubber suits and looking like men from Mars, followed by the human decontamination squad who came and took care of the victims. We wondered why one scene of first aiders putting an injured victim into an ambulance feet first always brought a laugh. We were informed that was the way dead victims were transported.

Of course, there is always one camera pest in every location and we had one that day who tried to be in every picture and mug the camera as much as possible.

Fast film was used and the photographic perfection of the picture was sacrificed for speed in catching the action.

After the film was edited and titled, it was shown to various heads of the different departments in Civilian Defense and was considered excellent as an educational picture. The mistakes were pointed out to each group so they could be prevented from making the same error.

All those who worked on the picture enjoyed it and felt they were helping in a small way towards the war effort. We know Cine fans all over the United States have been very eager to do something for their country and we hope this may suggest to others an interesting way of contributing their photographic ability to our "Home Army."



New Non-Metal Screen

A new full line of projection screens designed to supply all civilian supply, educational and visual training needs, yet made of non-critical material, has just been announced by Radiant Manufacturing Corp. of Chicago, the major part of whose production is now going to the Armed Forces.

Portable, table, wall and ceiling screens in a variety of sizes, all with the famous Radiant "Hy-Flect," glass-beaded screen surface, will be available for immediate delivery. Many outstanding features of former Radiant lines have been incorporated again in the new line. All new models are available *without* priorities.

S.V.E. Projectors Available For Pre-Induction Training

THE Society of Visual Education, Inc., manufacturers of S. V. E. projectors, has been granted permission by the WPB to release a limited quantity of the Model DD Tri-Purpose projectors to schools giving pre-induction training courses.

The Model DD shows both single and double slide films and 2x2-inch miniature slides in black and white or Kodachrome. It is a Tri-Purpose projector of high quality, being equipped with a 150-watt lamp, Anastigmat lens, S. V. E. rewind take-up, and is especially suited for use in classrooms or small auditoriums.

For prompt delivery, S. V. E. requests that schools submit orders with a priority rating. The automatic rating procedure under CMP-Regulation 5A may be used on orders for less than \$100 worth of equipment. Orders must be accompanied by a certification stating that the school has pre-induction training courses, signed by the officer in charge of the courses. Further information may be secured from any S. V. E. dealer or from the Society for Visual Education, Inc., 100 East Ohio Street, Chicago (11), Illinois.

P.S.A. Salon

The P.S.A. International Salon of Photography has been announced for October 25 to November 13 in the de-Young Museum, Golden Gate Park, San Francisco, California. Closing date for entries is September 30. C. Stanton Loeber, of San Francisco, is Salon Director. Judges are: Floyd Evans, of Pasadena, California; Shirley Hall, of San Marino, California; Fred Herring-ton, of San Francisco, California; Jack Wright, of San Jose, California, and William E. Dassonville, of San Fran-cisco, California.

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Carlsen Promoted



MR. J. H. McNABB, President of the Bell & Howell Company, makers of motion picture equip-ment and optical devices, announces the delegation of T. C. Carlsen to the position of Superintendent of Parts Manu-facturing. Carlsen holds this position at the Rockwell Plant in Chicago, Illinois. He started with the company in 1927 as a tool and die apprentice, and went to assistant to the Plant Engineer, then to Chief Methods Engineer, and while in these responsible positions acquired the necessary directive ability to fill his present post.

Also announced is the promotion of Knute Petersen to post of Assistant Pro-duction Manager. He is also Wage Co-ordinator, Assistant Secretary to the Company, and Secretary of the Central Control Planning Committee.

Still another promotion is that of Harold J. Peterson to post of Chief Tool Engineer.

Post-War Dream Camera

(Continued from Page 332)

to our movies, by proper exhibition. What then is the ideal projector like?

I don't think it's necessary to go into much detail here, as most movie makers aren't as finicky about projecting their movies as they are about filming them. Nearly everyone will agree, as in the case of the camera, that economy coupled with dependability, are the main items looked for. A precision machine with a lamp of proper brilliance to suit indi-vidual needs is a valuable asset, as is a projection lens of the correct focal length to fill the entire screen surface. Pre-war projectors were well on the road to per-fection, and there is little criticism to offer, and few suggestions to make, on that score, for the post-war product.

Well, I guess that about covers my subject of "dream" cameras and projec-tors. Whether your name is "John Jones" or "Bill Brown," I happen to be Jim Oswald, and if our views coincide . . . all well and good. If not . . . each one is en-titled to his own opinion. Whether or not the manufacturers will lend ANY of us an ear in designing their future cameras and projectors, remains to be seen. At any rate, we can DREAM, can't we?

DeVry "Movie News"

No. 1 of Volume XV, DeVry "Movie News" is just off the press. Its 12 pages are packed with interesting pictures, comments and data pertinent to Audio-Visual Education.

For a free copy address your request to DeVry Corporation, 1111 Armitage Avenue, Chicago 14, Ill.

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Nude But Not Lewd

(Continued from Page 344)

Maurine, who looks a great deal like Greer Garson, and has the same striking coloring of red hair, green eyes and fair skin, has very definite ideas of what she wants to do.

"I'd rather do nudes than anything else," she says. "Of course, as I've already told you, they're not commercial. But I've an idea—call it my ambition, if you will."

Maurine's ambition, if she ever has enough money to do exactly as she pleases—and she promises herself that one day she will—is to do books of nudes. Of all things, she wants to do the mythologies of the world.

For years she has longed to do them. The Greek mythology, the story of Adam and Eve, the Icelandic sagas, folklore of all nations.

"Wouldn't it be wonderful," she asks, her green eyes alight, "to see those things really take form and come to life? Nobody has ever done just that. It would be a thing of rare beauty, and, I believe, be a definite contribution to the culture of the world.

"Of course, it wouldn't be easy finding just the right type. What an undertaking! But, big as the task is, I mean to try it some day. Meantime, I jot down notes and catalogue as I go along—so I'll be ready for the opportunity when it comes."

We certainly hope for Maurine's sake—and our own—that those promised mythologies and fables see the light of day, via her trained camera. I've already got some of my favorite stories to suggest. And I can see myself now walking down Hollywood Boulevard scanning faces—and forms—of all passers-by for a possible Apollo, Passas Athena or Aphrodite. To say nothing of Siegfried, Thor and Brunnhilde!

Life, after chatting with Maurine, will never be the same.

New Slides For Plane Identification Kit

A SUPPLEMENTARY unit of 15 new aircraft silhouettes in 2x2-inch miniature slides for FLYING magazine's Aircraft Identification Kit, recently announced by the Society for Visual Education, Inc., is now ready for distribution to the hundreds of users of this kit.

The aircraft and the numbers assigned to them in the kit are: 113. Hawker Typhoon IB. 114. DeHavilland Mosquito. 115. Boeing Clipper ("314"). 116. Lockheed-Vega Ventura. 117. Lockheed Constellation. Three individual silhouettes on separate slides show side, bottom and front views of each type of aircraft.

Home Movie Previews

(Continued from Page 345)

In other words, the complications involved in trying to keep projector in perfect synchronization are beyond the average projectionist who might be called upon to use the film. This limits its use to the few amateurs who might have the proper equipment and who would be willing to spend the time necessary to experiment and rehearse the synchronization. Hence, in the opinion of this reviewer, the film has little actual commercial value.

Sound-on-film is the only practical way to present this kind of a subject, and the extra cost of recording and printing the projection dupe would be offset by wider possibilities in distribution. Incidentally, the central Boy Scout organization now has a good commercial 16mm. Kodachrome film, made for

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the same purpose, and is sent anywhere for FREE use. This reel is along the same lines as "SPIKE" and presents a lot of competition.

The above sounds discouraging, but this film could have wider use if the makers would re-cut it as a silent, and insert appropriate titles. In such case it would be best to shorten the several long scenes showing the Scout leaders talking.

Most groups or organizations before which such films could be shown can get any number of industrially sponsored entertainment films free of charge. Hence, they are seldom interested in paying a fee for viewing a film. Such sponsors send out films and paid professional projectionists. A film on the Boy Scout movement, either sound or silent, would have little income possibilities, and should necessarily be sponsored by headquarters, who could distribute it nationally.

WILLARD DeLuxe 35mm. Camera, 4 lens turret front, special finder, Goertz wide-angle, 2-inch and 3-inch lens, Zeiss Tessar 6-inch telephoto lenses. Regular and trick crank; automatic dissolving shutter, 200-foot, 400-foot magazines, pan tripod, masks, outfit case. New condition, price \$585.00. BELL-HOWELL, 35mm. professional Camera, special No. 341, Goertz f:3.5, 35mm., 50mm., 75mm., 125mm., three 400-foot magazines, B-H pan tripod, 32 volt motor, inverted finder, 4 cases, outfit in perfect condition \$2,965.00. 8-10-35mm. Equipment bought, sold, exchanged. MOGULL'S, 57 West 48th (Radio City), New York 19.

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HISTORICAL NOTE—Back in 1923, having perfected "safety" film—making classroom projection practical—Kodak made available 16-mm. movie cameras and projectors . . . and shortly afterwards pioneered a program of teaching films for schools.

PUT yourself in the boots of one of these young men. You've been accepted for the Army or Navy. What do you know about this war of 2,000-horsepower aircraft motors . . . Bazookas . . . submarine detectors?

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TRAINING FILMS are a great and growing part of their system. The Army and Navy have made thousands.

Don't get the idea that you're just "going to the movies," though. These movies are different. Each teaches you to do a part of your job in the Service—*do it exactly right.*

Maybe it's how to dig a foxhole. Or inflate a rubber life raft. Or take down and reassemble a 50-calibre machine gun. Or—bake a batch of bread . . .

In an Army and Navy made up

largely of "specialists," thousands of films are not too many. (Kodak is a major supplier of film for these pictures—one big reason civilians are not getting all the film they want.)

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* * *

After this war is won, you—and millions like you who have learned so much, so easily, through training films—will want your children to learn the Arts of Peace this way.

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Who will design the **BEST** postwar camera?



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OLD PROJECTOR LAMPS must be returned with your order for new lamps. The bases are made of critical material and have real value.

You will... in fact, you're designing it *today* . . . you *have* been ever since you shot your *first* movie scene! You wished for a better viewfinder, perhaps . . . or wanted an "8" with a turret head . . . or a speedier camera that would *get* a scene before it was gone forever . . . or an easier-loading camera . . . or . . . the list is endless.

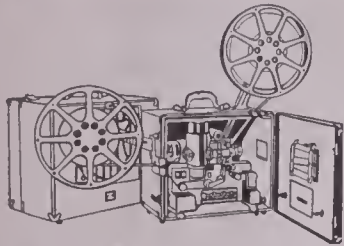
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And during all these months while our entire production has been helping win a war, you haven't stopped thinking about the *new* things you want in your *next* camera . . . and B&H Research hasn't stopped *interpreting* your hopes in logical, workable, necessary improvements.

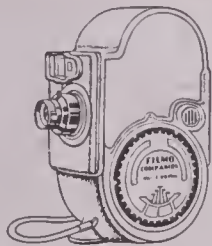
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It will be a Filmo Camera . . . made by Bell & Howell Co., Chicago; New York; Hollywood; Washington, D. C.; London. *Est. 1907.*

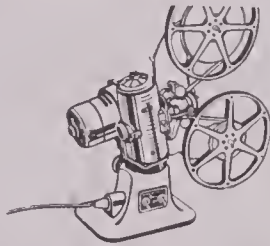
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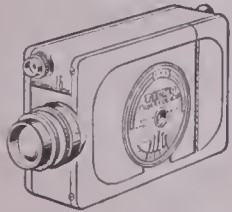
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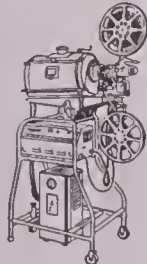
Filmo Companion 8 Camero



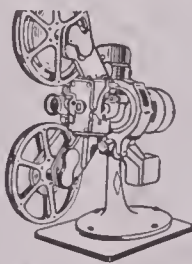
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In This Issue...

Cameramen in Uniform

16254

Artistic Pictures

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October
1943



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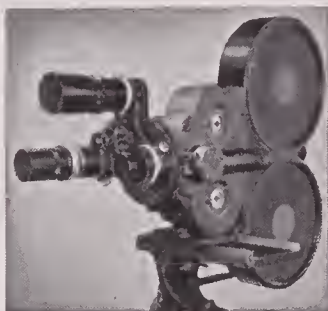
Signal Corps Cameraman T/5 Robert Quirk and his Eyemo . . . "somewhere in England." Wherever things are papping, Eyemos are filming. (Photo passed by Censor)

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AC10-43

AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

OCTOBER, 1943

NO. 10

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The Front Cover

This month's cover takes us somewhere in the South Pacific with combat cameramen. It shows a camera crew in action, photographing whatever is going on right then up in the skies. Behind the camera is Lieut. Arthur E. Arling, USNR, member of the American Society of Cinematographers, who has an article in this issue. At his left is Keith Wheeler, Chicago Times war correspondent.

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MICKEY SAYS:
 "BUY BONDS—
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Illustration from Walt Disney's Feature, "VICTORY THROUGH AIR POWER," Major Alexander P. de Seversky's best-selling book

*FANTASY OF FACTS...

Fritz had bad luck with the first aerial machine gun in World War I because it shot off his propeller! Then a synchronizing device was developed that sent bullets between the blades. 25 years later, turret gunners were damaging their tail assemblies so ADEL engineers developed a reversing hydraulic valve which automatically swings turret guns beyond danger points in 1-20th of a second. ADEL equipment on leading United Nations' planes was an evolution of original plans for making cinematographic equipment. From a unique lens focusing device came a carburetor dual control mechanism which, in turn, led to the development of other aircraft products. After Victory look to ADEL for new and superior cinematographic equipment, made with the engineering skills that gave ADEL international acceptance in aviation. Harken to Mickey and hasten that Victory!



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VENDOR

BY MAURINE

The Evolution of Transparency Process Photography

By FARCIOT EDOUART, A. S. C.

IT'S like Topsy, it just grew, and from an engineering viewpoint, the Transparency or projected-background process of special-effects cinematography, got off to a most unfortunate start. It was never invented, in the strict sense of the word—much less engineered. It just simply happened. And from its earliest beginnings, it had to take off its coat and go to work, with no opportunity for being engineered into a technologically streamlined coordination of methods and equipment.

For quite a number of years before the process became a reality, many of us throughout the industry who had been specializing on what used to be called "trick photography" had been thinking how valuable it would be if we could project a moving picture onto a translucent screen behind our set and actors, and rephotograph these two elements in such a way as to produce the illusion that the projected background was as real and as much a part of the composite scene as the actual foreground and actors. But we could only dream of it. Three key factors were lacking to make the dream into reality. We needed a simple, non-mechanical method of synchronizing the background projector and the foreground camera. We needed negative emulsions of sufficient sensitivity to enable us to record the back-projected picture. And we needed optics and light sources of increased power to enable us to get a brighter image through our background screens.

Then, some twelve or fourteen years ago, all of these things were, in relatively quick succession, thrown into our laps. The advent of sound gave us a variety of simple electrical hook-ups for interlocking camera and projector. The first "super-sensitive" panchromatic emulsions gave us the increased film-speed we needed. The projection requirements of increasingly large theatres improved the optics and light sources available for projection, and the still greater projection requirements of the wide film flurry of eleven years ago completed the development.

We had what we wanted!

Inevitably, individuals in several different studios threw these various units together as best they could, and started

making back-projection shots. That the results were successful is probably more to the credit of the skillful craftsmen who operated this pioneer equipment than to any enduring merit of the equipment itself.

Still, the many-fathered idea worked. It worked so well, in fact that the transparency or back-projection process immediately became a very vital adjunct to production. To a very great extent it eliminated long location-trips, with all the increased costs and hazardous delays such trips involve. It minimized the need for hiring a full-sized ship and, with technicians and cast aboard, cruising expensively up and down the seas in search of the right combination of backgrounds and weather. It completely eliminated the technical difficulties and not infrequent dangers involved in making by straightforward methods scenes showing our actors riding horses, autos, airplanes, speedboats, and the like. It afforded complete control of lighting on all of these scenes.

In a word, it conformed ideally to the industry's ever-present ideal of getting the best possible picture under the most completely controllable conditions, and with a minimum of time, expense and danger.

No wonder, then, that ever since, the industry's use of this process has constantly increased. In 1930—the last year before the introduction of this process, my own department made 146 composite process shots. The following year, using the projection process, this figure was more than doubled, while the cost per scene was reduced. Within two years, this figure was itself doubled, while economy and effectiveness advanced. And every year since then, we have had to make more and more transparency shots. Today, hardly a picture goes out without some of these scenes in it.



Moreover, producers and directors constantly pressed us to give them greater scope, through the use of larger and yet larger screens. When the process was first used, a scene inside a closed car, with a screen six or eight feet wide was something to be happy about. But before long, demand had forced us to find ways of using screens 12, 15, 18 and 20 feet across. But still came the cry for greater and yet greater scope. When we succeeded in using a 24-foot screen, we had already demands for shots that would call for a 36-foot screen. My most recent scenes made use of twin screens totalling 48 feet in width—and the end is not yet!

From an engineering viewpoint, this was decidedly all wrong. Our equipment was not engineered to do this work, and certainly the different components were not engineered to work together as a unit. All of us in this field necessarily had had to build our own equipment. We would usually take the best projector-head we could get and equip it with a camera-type pilot-pin movement. Some of us used Bell & Howell movements, some used Mitchells; all were readapted to this service as best we could.

It was the same way with projection lenses—projector lamphouses—electrical control systems, and everything. Though finely made, the best equipment in any studio was an engineering makeshift. It is an everlasting miracle that they performed as well as they did.

The manufacturers of the various com-

(Continued on Page 380)



The Sixth Sense In Film Mechanics

By HAL HALL

WE present here the news about an invention that may revolutionize film music and open thus far unexplored realms of dormant organic beauty.

The greatest artists such as Lionardo da Vinci, Michaelangelo, Durer and others, were unanimous in realizing that all forms of art spring from the same purpose and are subject to a common law. The knowledge of this law permits the establishing of a link between diverse manifestations of art. Savants such as Helmholtz for example, believed that it would be possible to establish rules analogous to those of counterpoint in drawings and architectural structures.

With the scientific attempts of Fischinger to interpret music by forms, we now associate a new effort by Dr. Dmitri Marianoff, former son-in-law of Professor Albert Einstein, and his collaborator, Engineer A. van Hulm, to capture music from visible forms.

"Like musical harmony, architecture, paintings and sculpture are also subject to the laws of counterpoint," Dr. Marianoff explains. "The transformation of complicated architectural designs into film registration would necessitate a synthetisation of sound waves and the music obtained would be but a synthesis of the real music inherent in the work of art it represents. Although this would leave the composer a certain freedom for creation, he would, however, always have as a point of departure the given form. Thus, his music would always retain the inspiration of the work of art it represents.

"Helmholtz already had the idea of 'sonore ornament'; he had discovered it mathematically but had no means at his disposal of representing sound graphically. He was able to make the connection between architecture and the fundamental bass, but was unable to base this on physical facts.

"Today, by the use of the new invention, music can be produced from ornaments and forms.

"The mystery of relationship of music and architecture, music and paintings, has been sensed throughout the ages. Now we can have the proof on film of these ancient affirmations. The mystery of 'geometrical music' in the works of Lionardo da Vinci, Durer, Rembrandt, can now be explained. The way in which

Pythagoras used to establish his theory of harmony proves that even the ancients showed like tendencies, which manifested themselves by repetition of certain proportions.

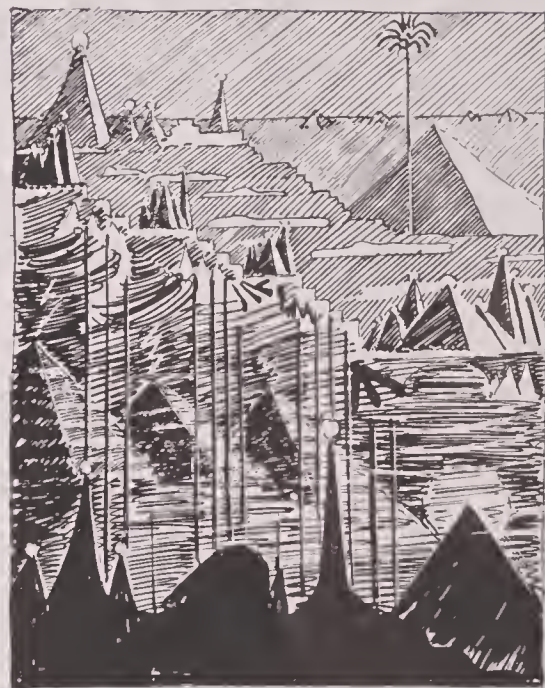
"During the Renaissance the 'Treaty of Painting' by Lionardo or the work of Durer on the art of measurements and proportions of the body, were the object of theoretical studies."

Dr. Marianoff and Hulm plan to make a series of films in which they will show how music can be captured from forms. They intend to illustrate the composition of Raphael's masterpiece, "Sixtine Madonna", which rests on the principle of the pentagram and other perfect proportions. Along with the graphic development, or rather grapho-tectonic development, one would cause the corresponding sounds to ring out while the geometrical figures were being built up. The first film planned by the inventors will be called "The Song of the Modern City".

"Film music as it is today is not organically tied with the collective film arts," explains Dr. Marianoff.

"An arranger, led by the mood of single scenes and the general theme of a picture, usually takes 'freely' from the library of world music that, which in his imagination is associated with the plot or scenery of the picture. Ignoring the logical unity with which the original composer has built his creation, the arranger takes a part of such a composition, blends it with parts of works of other composers and makes the musical background for the film. This professionally well-prepared and pleasant accompanying music does not disturb the spectator's ear and helps him digest the pictorial food. Large studios, when making an expensive picture, often put into the hands of a notable composer the writing of his own music. In most cases this is only a finer 'illustration' of the plot. It happens rarely, as in the case of George Gershwin and a few other composers, that a composition is of cinematic nature; but through its own dominating value, this music comes to the foreground as an independent factor. Instead, music should be an organic part of the motion picture in 'natural' unison with acting, sound, color, photography, etc.

"Just as thoughts are voiced through the spoken word, so the silent forms of



Top of page, Raphael's famous painting, "Sixtine Madonna."

Opposite page, this drawing shows the graphic delineation of geometric figures symbolizing Raphael's philosophy, and is the first step toward the musical transposition of the master's eternal creation.

Above, Tchurlanis' painting—"Sonata of Pyramids." Here the noted artist painted music on canvas.

nature, architecture, painting and all the visible lines of the universe that lie before our eyes—can be heard.

"... the marble blocks of a Greek Temple, its ornaments, dancing priestesses, Egyptian pyramids, landscapes, the colonnades of Rameseum—all this can be heard. Music, dormant in the architecture of Islam, India and China... in the Gothic domes and windows and facades—can be awakened to sound...."

"The noted Lithuanian artist, Tchurlanis, believed that the painted music on canvas.... How good it would be to

(Continue don Page 384)



Cameramen In Uniform

By LIEUT. ARTHUR E. ARLING, U.S.N.R.

Member American Society of Cinematographers

THIS is not to be an eye-witness account of the Battle of the Coral Sea or the Battle of Midway, as those battles have been covered by more able writers than myself and at a time when they were headline news. Rather, I shall endeavor to pass along for what interest and value they may be my experiences with the photographic equipment used in covering these battles.

While engaged in making a factual photographic report for the Navy Department on the damage inflicted on our Hawaiian military and naval establishments by the Japanese attack of December 7, 1941, I received orders from my commanding officer, Comdr. John Ford, to board a heavy cruiser which was bound for the Coral Sea area in the South Pacific, where the Japs were still making unchecked progress in their invasion of the Solomons and other South Sea Islands.

I reported aboard with one photographic specialist, Stephen M. Newmark, Splc(P), USNR, to assist me. Our camera gear consisted of one Mitchell camera, one Eyemo and two 16mm. magazine-loading Cine-Kodaks, with accessories and film.

As soon as we were quartered, I began a tour of the ship seeking suitable camera positions. It was at once apparent that a modern battle cruiser, bristling as it is with anti-aircraft batteries, provides little space for possible camera setups. After trying several crowded places I finally decided to place the Mitchell on a machine gun platform high on the mainmast above the flying bridge and just below the sky lookout. Here in a space where four 50 cal. machine guns had been replaced by two of the new 20mms., I found just room to set my tripod and command an angle of view of about 220°.

To be ever ready for that call to general quarters that came when we were in enemy waters several times a day, we kept the Mitchell threaded at all times, merely removing it intact from the tripod, which was left standing, and stowing it as a unit in a ready ammunition box which being of double compartment construction, provided protection from the tropical heat as well as the tropical showers. To cover action as it might occur at other parts of the ship, I relied on the Eyemo and the two Cine-Kodaks. One Cine and

the Eyemo I kept in the chart room on the bridge, and the other Cine I kept in my quarters, the object, always to have a camera at hand.

The Navigation Officer was kind enough to give us space to stow our film in the chart room which was heavily insulated and remained quite cool even when other parts of the ship were sweltering hot. I preferred the even temperature of this room to the extreme cold of the only available refrigerators. We dehydrated both our 35mm. plus X and our 16mm. Kodachrome, and experienced no trouble, although our film was not developed until several weeks later. We found that an empty powder bag container from the 8 inch guns made an ideal dehydration chamber. It was just the right size to take the 400 ft. roll and could be sealed airtight. Incidentally, the ship used these containers to stow emergency rations aboard the life rafts.

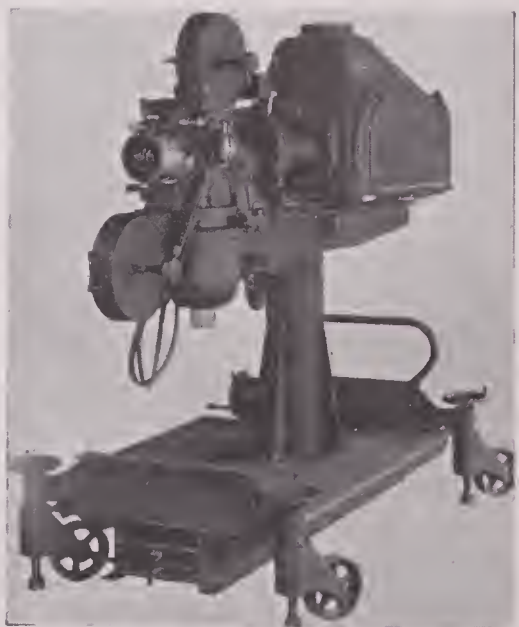
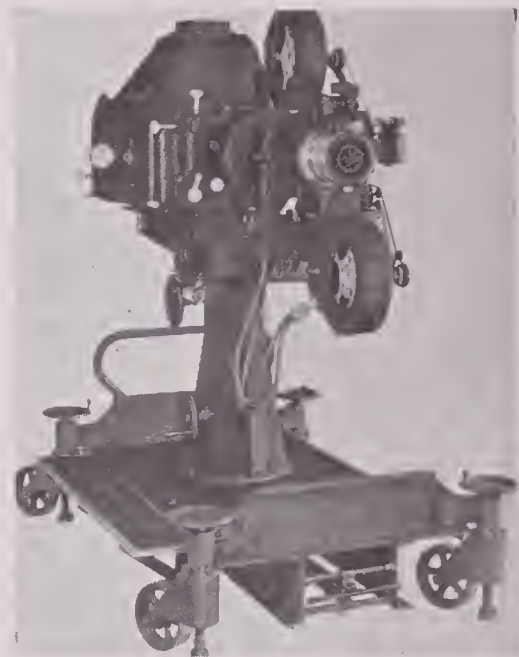
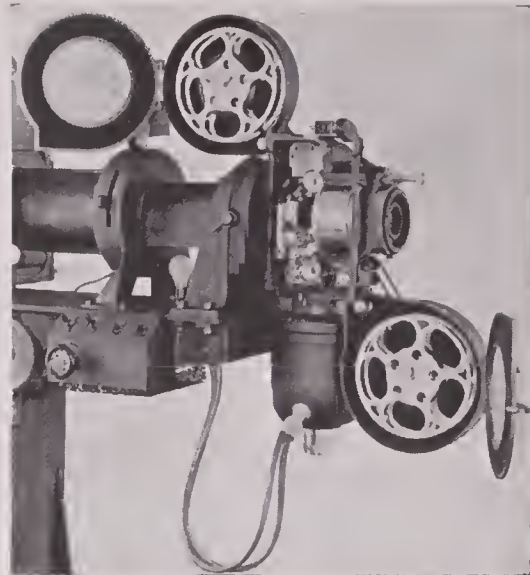
My selection of lenses proved adequate, the wide angle 25mm. and 35mm. being invaluable when shots involving men in action aboard our own ship were desired. The long focal 18 inch lens when reaching for action far away. The Akeley head proved its worth particularly when under fire. When the 5 inch ack-ack batteries let go, supplemented by the 1.1 pompoms and the 20 mus., you think all hell has broken loose. The camera does a dance (incidentally don't tie your camera down tight or the concussions will splinter the tripod), the noise penetrating the cotton stuffed in your ears rises to a deafening crescendo, and the concussions seem to hit you in the chin with such rapidity that you feel as though you were a punching bag being pummeled by an expert. At such times the good old Akeley gyro head pays off as a stabilizer.

The 16mm. Cine-Kodaks proved best for following dive bombing because the planes coming as they do from right over head and usually directly out of the sun are out of reach with a camera on a tripod. Hand-held and using lenses up to a 4 inch, usable film was secured. Shooting Kodachrome in the 16's and later blowing the shots up to 35mm. gave image size equal to a 10 inch lens.

Much good can be said for the use of the 16mm. equipment for combat photography. Namely, its compact size and light weight. The 2½ to 1 ratio between 16mm. and 35mm. film means less weight and bulk so that a greater supply can be carried. This same 2½ to 1 ratio also applies to the focal length of lenses resulting not only in the reduced size and weight but making possible shots with hand held cameras that would be impossible with 35mm. cameras direct.

In spite of the customary news story in which the news correspondent describes battle action with planes crashing and ships sinking right under their very noses, it has been my experience that a sea battle may be scattered over several hundred square miles of ocean with

(Continued on Page 385)



The New Mitchell Background Projector

By E. J. TIFFANY*

THE Mitchell Camera Corporation has just completed its first complete portable background projector and has delivered it to the U. S. Naval Science Laboratory, Anacostia, D. C.; another is under construction for the Russian Government. One of the outstanding features of the Mitchell background projector is the silent operation which eliminates the use of a booth or a blimp. Another one of the many advantages of the Mitchell background projector is the compensating link movement. When the projector is operated at a normal distance from the background screen, no noise is picked up by the sound system.

The projector head consists of a film moving mechanism, upper and lower one thousand foot magazines, and interlocking motor drive system, all mounted on the base plate of the stand. The projector head can be rotated 180° from the vertical position while in operation

thousand foot roll of film.

In front of the film mechanism a by releasing the locking lever. The projector head is equipped with Bausch and Lomb new series *f/2* super cinephore lenses. The lens can be focused by remote control by the cameraman; this is accomplished by means of a Selsyn motor. It can be manually focused by the projector operator. The shutters of the projector and camera are synchronized by releasing the lock lever at the base of the projector and rotating the ERPI 220-volt interlocking motor. The threading of the projector head is comparable to the threading of any Mitchell sound camera. The movement can be released by two levers, removed and replaced by an auxiliary aperture plate for lining up the arc and size of the picture to be produced on the screen.

The magazines are equipped with a reverse clutch which allows the projector to be operated both backwards and forwards. The clutch can be adjusted to the proper tension to take up a

condenser-water-cooled cell is constructed to eliminate excessive heat on the film. There is a four-way matte which

(Continued on Page 370)

Above, four views of the new Mitchell background projector.

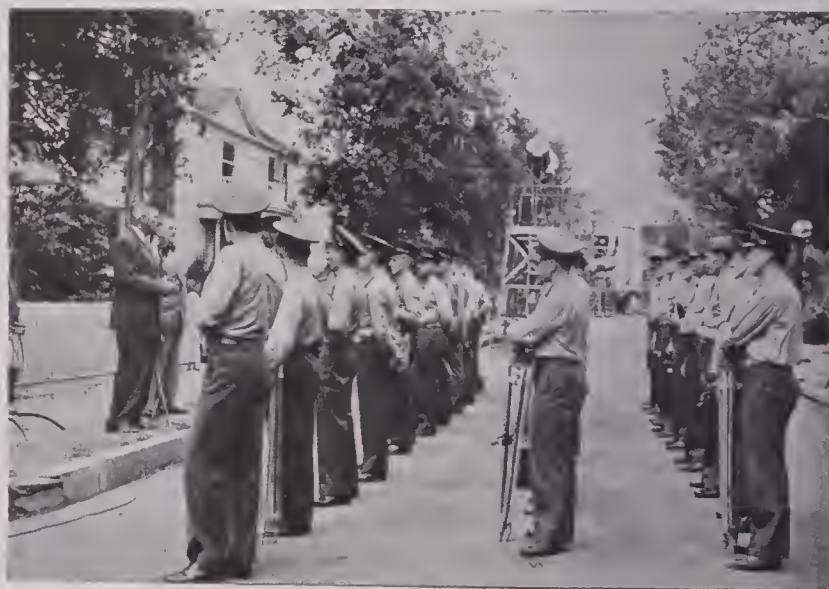
* Mitchell Camera Corporation Engineer.

Marines Learn Photography in Hollywood

UNDER the sponsorship of the Research Council of the Academy of Motion Picture Arts and Sciences, Hollywood's ace cameramen have trained combat cameramen for the Signal Corps and the Marine Corps. Specially selected men of the service are sent to Hollywood and receive a thorough course of instruction and then go back to the battle fronts on their assignments.

Recently a class of Marine cameramen were graduated from this school, and here are some photographs of their school activities: At top left Technical Sergeant Alfred W. Rohde, Jr., is being congratulated by John Arnold, A.S.C., head of the MGM Camera Department. Left center a studio technician shows class how lenses should be cleaned. Bottom left, John Arnold instructs a class in use of 35mm. professional camera. Top right, John Arnold and Alvin Wyckoff, A.S.C., give class instructions for the day's shooting. Bottom right, Mr. Wyckoff gives instruction with the aid of a slide projector.

Cameramen of our armed services who have been trained in the Hollywood studios by Hollywood cameramen, under the sponsorship of the Academy, are now seeing action at every fighting front. And reports show that they are doing a magnificent job.





HANDS ARE NICE TO HOLD—THAT'S ALL

By JAMES N. DOOLITTLE

THROUGH a couple of decades of association with what we facetiously refer to as "the Industry," I have probably photographed most of the great names. If you want a brief biographical note, I was by diligent application, inducted about the time Gail Henry was a popular comedienne and Larchmont Boulevard furnished the locale for systematic wrecking of automobiles. They hadn't yet torn down the "Intolerance" sets at Sunset and Santa Monica. C. B. DeMille was still wearing his Lasky Guard uniform and was signing edicts on the Otto K. Olson lot as "by order of the Director General."

So, you see, I go 'way back. But who cares!

Those were the good old days when we worked only fifteen or twenty hours, and were usually laid off around Christmas, and the Collector of Internal Revenue stamped our returns "No Sale."

The "great names" have either grimaced, grinned or glowered at my lens. Each has reflected the weight of some thousands—even millions—of dollars. I have known many of them in pre, pro and post glamour days, and their secrets are as secure in the archives of my memory as in the columns of Winchell or Fidler.

Each individual has had some very good reason for taking up my time—most have had several good reasons, chiefly facial and ambulatory!

We mustn't work this into a clinical dissertation, but for the moment let's dissect the feminine assembly. Easily and quickly done—face, legs and Hays office.

All right, the girl has a face. This is an area devoted to the application of nearly everything advertised in the way of unguents, salves, balms or facial cocktails. Up on top there's a growth which supports an industry, and often a loose interpretation of the noun, "hat."

Just south of the chin is the neck—noun, not verb.

Continuing southward we encounter the International Hays Line. This is distributed in an easterly and westerly direction in two parts. Manufacturers of sweaters have, we suspect, a mercenary interest in the circumstance.

Continuing in the geographical analysis—"Approaching the tropics is the lower torso,

The gals wear girdles

So it won't be more so!" Anon.

From it sprouts a couple of appendages which are used to encase Rayon, Nylon or Duco, depending upon priorities, seniorities or just "orities." We call them legs for want of a more poetic nomenclature.

Then, way down beyond the tropic of CapriCORN comes feet. Feet are terribly necessary. They are used to put shoes on. They are also used to take shoes off'n. Ladies shoes defy certain fundamental laws, dealing with the state-



Upper left, an artistic photograph of hands. Upper right, Loretta Young's hands form a graceful part of the picture. And next, a pair of hands artistically used as an illustration for a nationally advertised lotion. All photos by the author.

ment that no two masses can occupy the same space at the same time.

I forgot to mention that outward from just below the chin extend two tentacles terminating in certain digital appurtenances known as hands. As a photographer, I wish I could forget them. Hands are nice to have and to hold—but not to photograph!

Mr. Editor, you personally have stood behind my camera, have seen light poured upon a lovely subject. But have you suffered with me while, often in vain, I've

(Continued on Page 379)

Third Dimensional Films In Soviet Union

By MICHAEL KALATOZOV

AMERICA is the birthplace of the greatest art of all times—cinematography.

In its "infancy" it possessed the science of vision, but was deaf; it had a plastic tongue, but had no sound. In due time the child grew up and started to speak, being still anaemic and pale; but when it reached the next phase of development, the child acquired color in which the best things on earth are appearing now.

This magnificent creation became instrumental in greater knowledge of science and upbringing. Now this art can afford to be wise and silly, gay and tragic, and it has absorbed all that is good and bad in all arts inspired by mankind. One factor, however, is not overcome. That is—space. It still has its forms in two dimensions and wants to be liberated from these chains.

This problem of space has long perturbed the peace of inventors. But that is now solved. Soviet inventors have developed third-dimensional films. Today without aid of optical help, stereoptic movies without the aid of eye glasses is practically developed for the mass audience in the Soviet Union.

While in the rest of the world research in the sphere of stereoscopic movies was going on in connection with the aid of eye glasses, the Soviet inventors were holding out that the most progressive road would be in liberating the spectator from use of any kind of optical aid. Therefore the leaders of the Soviet movies were supporting the inventor, Semen Ivanov, who discovered a screen with a curve of special geometrical form. The special feature of this screen is that its elements, in the size, are located beyond the "solving abilities" of the human eye. On this screen we show stereoscopic film, which are photographed by a special method for unlimited numbers of spectators.

Semen Ivanov solved the problem in its principals as early as 1930, but the first stereo screen which was seven meters square was built in 1938 when Ivanov demonstrated it in front of a large audience, showing separate short experimental films.

From this time on, the stereo-movie in the Soviet Union went beyond the limits of laboratory experiments. In 1940, in Moscow, a special movie house was opened where on a large screen (approximately 20 meters square) was shown the first full length stereo-film,

photographed by the director, Alexander Andrievsky. This film was successfully shown for six consecutive months. Hundreds of thousands of spectators witnessed the unusual sight: birds flying in space all around the auditorium; the juggler's tricks with playballs, bunches of flowers flying over heads of the orchestra and over the aisles and disappearing in the depths of the screen. The flatness of the screen had gone out of existence.

The "first night" audience consisted of the consulate staff and the diplomatic corps. The unanimous feeling at this presentation was the recognition of the fact that this was the beginning of a new epoch in the art of cinematography. The Soviet Government in recognition of this achievement awarded to Semen Ivanov an honorable title of Laureate of Stalin's Award.

The brutal attack of Germany on the Soviet Union, in June 1941, prevented the Soviet Industry from continuing the work of building special movie houses in the large cities throughout the Soviet Union and handicapped the director, Andrievsky, in shooting new stereofilms. In spite of these factors, however, the work on technical developments and improvements is continuing during the war.

In October 1942, Mr. Semen Ivanov and Alexander Andrievsky completed the work on a new "illuminated stereo-screen" which intensified the brightness of images as much as nine times. Comparing it with the previous type screen, it eliminated all the shortcomings of the screen. The new invention not only improved the projected images, but gave also the possibility of *mass production* of this new kind of screen at a comparatively low cost and which requires reasonable technological process.

Like the original invention of Ivanov, the new "light powerful" screen of Ivanov-Andrievsky was highly praised and was evaluated by many scientific institutions. The outstanding academician, Kopitza, praised it highly.

An important work was going on in the field of "shooting" for stereo-screen. People familiar with the difficulties of stereo-screen know that in the published works on this subject, they meet the complaint that stresses the fact that space cannot be controlled. As an instance: the objects which are intended to project behind the screen are suddenly visible in the auditorium and vice

NOTE: Mr. Michael Kalatozov, author of the article on this page dealing with the development of third-dimensional films in the Soviet Union, is in America as the representative of his government to establish greater cooperative relations between the film industries of his country and all of the Americas.

Mr. Kalatozov is one of the Soviet's noted film directors. He has directed many films of artistic and documentary merit. Best remembered of his films in America is the one about the famous Soviet flyer, V. Chkalov, who first flew over the North Pole to the United States. That film was titled, "Wings of Victory."

Due to his varied abilities and engineering knowledge, Mr. Kalatozov has participated in practically every phase of motion pictures, from cinematography to directing and producing. For the last few years he has been the supervising director of the Leningrad Studios. During the siege of Leningrad he, along with all the citizens, took part in the defense of the city. His greatest ambition is to bring about one hundred per cent cooperation between our film industry and that of his country.—The Editor.

versa. The object which the producer would like to see appearing in the auditorium projects on the screen against his will. Separate reels distort space and cause a fatigue for the eyes. But these enigmas are common complaints.

Without any exaggeration I state that the Soviet Union has now an entire science about stereoscopic filming. In order to have an idea how fully this science has been developed, one can judge from the fact that Director Andrievsky had to shoot the first full length film actually without seeing it! He was guided solely by his calculations which he had no opportunity to verify during the process of work by projecting it on the stereo-screen, as this work was completed a few days before the "first night." Nevertheless, it proved to have no mistakes in it.

Using the clever construction of a new invention of Mr. Schwartzman, Director Andrievsky developed a new method of drawing multiple films. This by itself allows the use of it as a weapon for service of multiple cinematography and gives the new effects in this sphere. Without a doubt this successful beginning of a new development will progress in the future and will result in new achievements.

Ivanov and Andrievsky are waiting only for the appropriate moment when, with the end of the war, conditions will permit them to construct the stereoscopic movie houses, and to produce pictures for these theatres. Their experiences will be helpful to the inventors in this field.

Here in the United States there has been achieved brilliant results in space-sound. We in the Soviet Union follow up the success of American technical workers and musicians who also work in this field on similar problems.

It is highly desirable that the combination of achievements of the Soviet pioneers of stereoptic movies and the achievements of American specialists in space-sound will mutually contribute and mature this field and combine their factors into one unit which will forecast a new era in cinematography. It is probable that these new steps in cinematography will lay the foundations for a lasting friendship between the two workers in cinematography—the Soviets and the Americans.



Keep On Filming . . . Economically

By JAMES R. OSWALD

THERE is a vast army of home movie enthusiasts, particularly users of 16mm. equipment, who still contend that theirs is an expensive hobby, indeed. An even greater number of persons, "would be" movie makers, admittedly find the utmost enjoyment in their friends' home movies, but refrain from the pleasures of making their own, because they believe so doing far more costly a proposition than they can afford. "It isn't so much the original cost," they argue, "it's the upkeep."

Economy of operation always an important item to be considered in the use of any mechanical apparatus, but today there is still a greater problem that confronts many home movie fans, who are determined to keep their cine cameras grinding for the duration. Yes, even money won't always produce, for the average individual, a supply of those standard reversal films which have proved most popular throughout the years, and are now so rapidly disappearing from the civilian market. How, then, can the ordinary cine fan like you or I, who have no priority ratings whatsoever, hope to keep supplied with enough film to keep our cinematographic interests aroused, on the home front, and at the same time do so more economically than ever before believed possible? Providing the camera isn't of the magazine loading type, I think I have the solution to this problem, at least for the present time, for those who can content themselves with black-and-white filming only. Are you with me?

Fortunately there is one type film on the market with which few home movie makers are acquainted. This film doesn't come in the customary brightly colored carton; it isn't processed free of charge. Consequently, because of this lack of familiarity, there is little demand for it by the amateur, and a plentiful supply still remains available on most dealers' shelves. This film is nothing new. Motion picture laboratories, for whom it was really designed, have used it for years. It is well known in professional circles. The film to which I refer is put out by all manufacturers of the familiar reversal types, such as Eastman, Agfa, and Du Pont, and is called **POSITIVE** film, the name being derived from the fact that its chief laboratory use is in making **POSITIVE** prints for projection from **NEGATIVE** movie films (comparable to ordinary snapshot negatives).

Because of its low cost of less than one cent per foot in either 16 or double 8 millimeter size, positive film has been the cause of much experimentation on my part. I have been intrigued for years with the possibilities of this type film, during which time I have gone deeply into its characteristics . . . studied its advantages and disadvantages . . . its practicability for home use. In my opinion, positive film has remained out of the limelight entirely too long. Through the medium of this article, therefore, I hope to pass on some of my findings to you interested readers who would like to follow through with a little experimenting of your own.

Four photos above are enlargements from frames shot on positive stock by Mr. Oswald.

Since positive film is intended for laboratory use, it isn't spooled, and hence the user must resort to spooling his own. But just as a person puts up with the inconvenience of a street car or bus to save cab fare, so also must the movie maker be willing to sacrifice the convenience of the regular daylight loading film to cut his shooting expenses in half. It really isn't much trouble at all, though, to take the projector in a darkened room, slip a discarded reel on the rewind shaft, and spool the entire bulk, positive film, **EMULSION SIDE IN**. A red safe-light, if available, may be used to facilitate handling, without affecting the film.

The camera, too, must always be loaded in the darkroom if the film is wound on a projection reel. If wound on a **SOLID** type **CAMERA** reel, however loading **MAY** be carried in daylight, if preferred, although the first few feet of film which ordinarily serve as a protective leader, will naturally become fogged.

(Continued on Page 372)

Artistic Pictures

By F. W. PRATT

A MAN with a camera, cine or otherwise, covers very wide interests. He observes ocean surges, forest paths, blossoming Spring, brilliant Autumn, sheep pastures and farm life generally. Out of doors he can only select or reject. His field is far more limited than that of the artist who, painting the self same subject may omit something of which he disapproves or include some effect seen elsewhere, but not in the scene before him.

Notwithstanding this drawback, the proper grouping of materials in photographic or screen reproduction is one of the many factors that must be considered by every serious cameraman. For without an understanding of the principles of composition his filming must fail from the artistic standpoint.

The word "composition" was originally used in reference to the manner painters "composed" pictures by bringing together natural objects—architecture, figures, etc.—to produce a subject. The result was a good "composition" or otherwise.

As a result of this practice, photographers are often advised to get their ideas of "composition" by studying work of painters. This must be done with discretion. The best pictures by any medium do not advertise the fact that they have been carefully composed.

Now, if we study carefully and compare photographs that please and satisfy us, we begin to recognize certain common factors. In other words it becomes evident that there are definite means of securing such things as *centre of interest, harmony, balance, mood*, and so on. These are the common *laws of composition*, and professional painters study them very carefully, and the result is "every prospect pleases."

Now take *centre of interest* for instance. First of all we must understand the aim of a picture or photograph. Take a landscape with a single figure. The landscape may be beautiful, interesting, well arranged, and the figure well placed is definitely subordinated to the landscape.

Thus the picture is a *landscape with an incidental figure*. Make the figure larger and dominate the landscape and you make it a figure subject in a landscape setting. It is neither a landscape with a figure nor a figure with landscape. Result is mental irritation and you condemn the composition. Similarly we mentally resent compositions that are lop-sided, top heavy, over-crowded, confused, vague, empty, formal and so on.

What are the *laws of composition*—they are simply the foundation on which you build up your picture to make it pleasing and symmetrical, just as an archi-



Fig 3

tect builds his artistic home on a strong framework and solid foundation.

These *laws of composition* embrace different forms according to the type of picture we wish to construct and its general characteristics. For instance, there is the circular, triangular, pyramid, diagonal, horizontal, vertical, and so on.

No matter whether the picture moves or is a still—one or other of these forms is essential in the construction of various types of artistic pictures. To my way of thinking, artistic grouping in movie work can be most effectively arranged and greatly enhances the quality of the film. The professionals are adepts in this direction.

Now let us look at the construction of various pictures.

Scenic pictures are probably of most importance to the average movie-goer. Fig. 1 shows the picture-space divided into nine equal rectangles; the dividing lines have four points of intersection, and it is generally found that the main object or mass is best placed about one of these points while a secondary balancing mass may fall on one of the opposite points. The horizontal "thirds" suggest approximate positions for the horizon line, visible or imaginary. The horizon line should not bisect the picture.

Many a landscape subject which looks attractive to the eye is a failure on the screen. It lacks main interest. Interest in a picture depends largely on the lines of the subject matter and if interest is to be held, which is essential, the lines should guide the eye into the picture gradually up to the main point of interest. The "lead in" is usually to the extreme right or left of the bottom third spaces. The "lead in" may be cleverly disguised, but is generally a track, a

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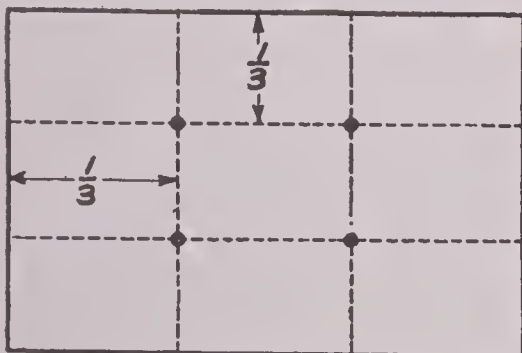


Fig 1



Fig 2



Fig 4



Fig 5

If you think
TWICE
about Negative films

You'll think
EASTMAN
both times

Because—
EASTMAN
is the best
by test,
by practice
and
by performance—

J. E. BRULATOUR, Inc.
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SAVING FILM IN WARTIME



The above two pictures of film newcomer Early Cantrell serve as excellent example of how to save film in wartime, when everyone is worried over negative shortage. The two photographs are from ONE negative. Seigfried Levi, Hollywood still photographer, shot the full length portrait of Miss Cantrell. Then, instead of using another negative to make the close-up, he simply cropped it out of the other negative with his enlarger, thus producing two excellent pictures with but one precious negative.

New Mitchell Projector

(Continued from Page 363)

is controlled by a lever on the side to cut down the size of the projected arc light to the desired size of the projector aperture. A fire shutter is installed in this same mechanism which operates when the projector machine is turned off and on. A threading light is installed between the water cell and matting device for lining up the film in frame in the aperture.

The Mitchell projector is equipped with a Peerless high candescent lamp house, 120-180 amperes. The lamp house is equipped with two condensers and is controlled by a switch on the side of the base, an ammeter to control and stabilize the desired amperage; an auxiliary resistor control panel is supplied with this unit.

The projector head and lamp house is mounted on a base plate which can be rotated 360° and tilted 10° up or down and is operated by two control wheels. The lens height when in the low position is fifty-eight inches. It can be raised to seventy-two inches from the floor by the control wheel. On the base plate is mounted a control panel which permits the projector to be operated forwards and backwards independent of the distributor and also to interlock with distributor. The speed of the projector can be controlled by a rheostat while out of interlock.

The complete projector is mounted on a sturdy base which is mounted on four casters to permit the unit to be moved about for different projection distances. The base is equipped with a telescope handle to permit the unit to be readily moved about. When not in use this

handle is concealed under the base. When the desired projection distance is obtained, the casters can be jacked up and the entire unit rests on sturdy screw jacks.

The base of the projector is approximately 6½'x4½'. The height of this unit is 7½ feet and weighs approximately two thousand pounds.

This Mitchell background projector is constructed of the same high grade workmanship as all other Mitchell products embodying the latest in engineering development.

Congressional Library Helps

Rare film prints from the archives of the Library of Congress in Washington have been made available to 20th Century-Fox Studios for use in the motion picture, "Woodrow Wilson."

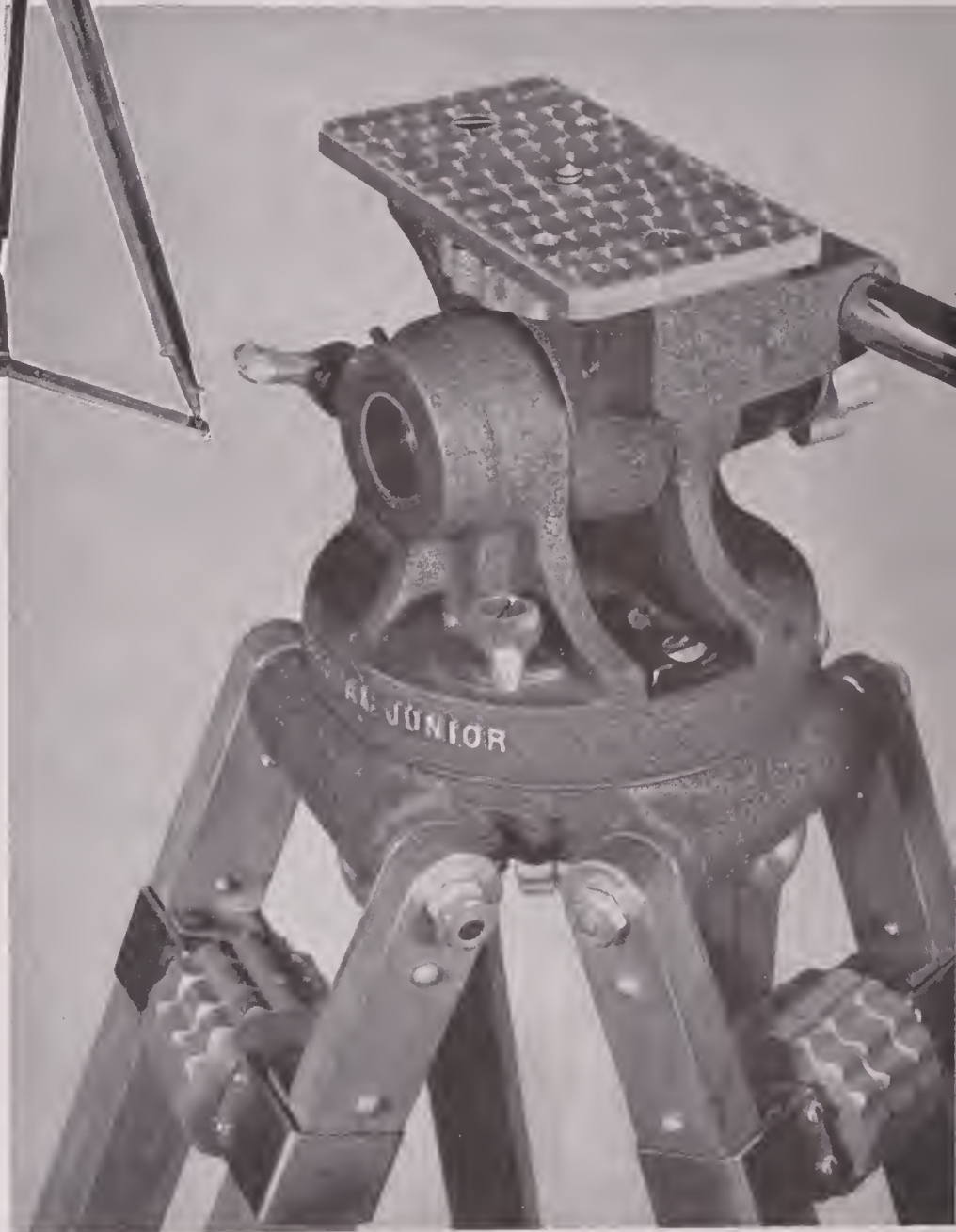
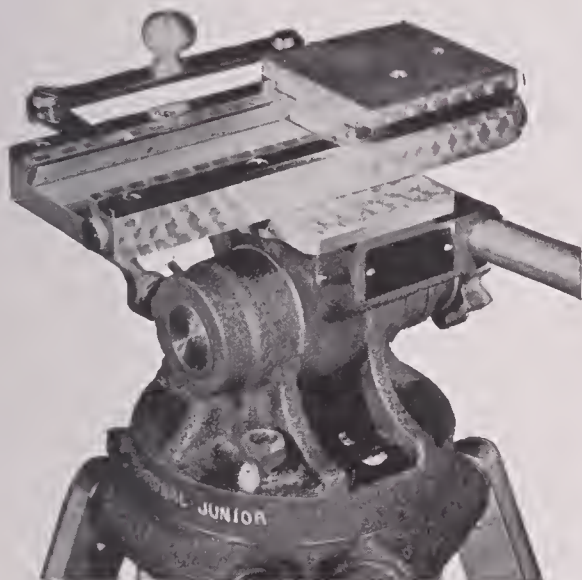
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★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking-device.

★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

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★ The new removable head feature adds great flexibility to the versatile "Professional Junior"* Tripod. It is now possible to easily remove the friction type head from the tripod legs base by simple unscrewing a finger-grip head fastening nut. The tripod head can then be mounted on a "Hi-Hat" low-base adaptor for low setups.

The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this superfine tripod. The top-plate can be set for 16mm E.K. Cine Special, with or without motor; 35mm DeVry and B & H Eyemo (with motor), and with or without alignment gauge. The tripod head is unconditionally guaranteed 5 years. Literature sent upon request.

* Patent No. 2318910.

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"Professional Junior"* Tripods, Developnig Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading Newsreel companies and 16mm and 35mm motion picture producers.

Keep on Filming

(Continued from Page 367)

Although positive film is intended to be developed "straight," and not to be processed by the usual reversal method, I have found that it CAN be successfully reversed, just as in the case of the regular type film the average movie maker has been accustomed to using. I have noticed on several occasions a third-dimensional quality in positive film which is not duplicated in any of my other black-and-white films. Certain scenes take on depth just as did the old stereoscope view cards, which were a familiar part of every living room, in years gone by. How to account for this strange phenomenon in movie shots, I have been unable to find out, unless it can be attributed to the high contrast and fine grain of the positive emulsion. (The benefits of this contrasty, fine grained emulsion in making titles, copying maps, line drawings, etc., are well known to motion picture laboratories everywhere.)

In comparison to the regular reversal type, positive film has its limitations, of course, but generally speaking, for outdoor use it rates favorably with the regular orthochromatic type films. Because its speed is somewhat slower, however, the use of positive film requires opening the lens a trifle wider than normally. As a general rule, a difference of about one stop will be sufficient, over that necessary when using an average, medium speed film. The following exposure chart may prove helpful in serving as a guide, although the figures are only intended to be approximate:

When it comes time for processing, there are many independent laboratories who will undertake to reverse the positive film, usually at a very nominal fee. The charge for such service is often less than the original film cost of one cent per foot. The Superior Bulk Film Co., 188 W. Randolph St., Chicago, Ill., and the Fromader Genera Co., Davenport, Iowa, are but two concerns which operate laboratories equipped for reversal processing. Those desiring to slash expenses still further, and who have ample time and patience to do so, may be interested in carrying out this procedure themselves. Many fine home-processing outfits are available, several of which may be obtained from the above mentioned companies, who can also supply the necessary chemicals and instructions. When a reasonable amount of care is exercised, the work really isn't very difficult at all, especially to anyone already familiar with dark room methods.

Considering that 100 feet of 16 or double 8 millimeter positive film can be shot at a total cost of less than two dollars, I think it will be agreed that home movies need not be so expensive, after all. In no other type film, however, have I found the same combination of economy coupled with quality, bar none. Everyone knows how movies far

OUTDOOR EXPOSURE GUIDE FOR USE WITH POSITIVE MOVIE FILM

Subject	Lighting Conditions			
	Bright	Hazy	Cloudy	Dull
Distant landscapes, water, mountain, and snow scenes....	f 8	f6.3	f5.6	f3.5
Open landscapes, groups, sporting events, etc., with no heavy shadows	f6.3	f5.6	f3.5	f2.7
Picnics, games, back-yards scenes, etc., in light shade....	f5.6	f3.5	f2.7	f1.9
Miscellaneous scenes in deep shade.....	f3.5	f2.7	f1.9	f1.9

8 frames per second

Figures given are for normal speed filming, 16 frames per second, unless otherwise stated. This exposure chart is for the period from 2 hours after sunrise until 2 hours before sunset, using flat lighting.

For side-lighting, increase lens opening 1 stop.

For back-lighting, increase lens opening 2 stops.

surpass ordinary snapshots, so far as entertainment value is concerned. By using positive film, cinematography can compete with still photography from an economy standpoint.

To be sure, movie making CAN be an expensive hobby; it NEED NOT be.

Artistic Pictures

(Continued from Page 368)

road, river, log and so on. So "lead in" at the side and do not center your main object, but place it about one of the intercepting points according to requirements. To digress very often we are dragged to mountain tops for famous views. Mostly very disappointing. The part is more interesting than the whole, concreteness, nearness—a picture about a particular thing. These are the elements of good shots. In distant views there should be somebody or something in the foreground.

If you look at a possible subject for a photograph you should form the habit of framing it with your eyes. You will soon find yourself marking out thousands of artistic scenes. If there is any action about you may as well have an artistic setting for it.

Scenic pictures are mostly based on elliptical or circular construction. Many of the world's greatest pictures are on the same pleasing lines. The elliptical arrangement is a safeguard against the eye wandering out of the picture as can easily happen with other more rigid construction. This is the reason why we frame views with trees and branches—they help to keep the eye about the main interest. Look around at good pictures, paintings and drawings, etc., and see how often these points occur. The drawings reproduced with this article will give readers a good idea of what to do and what to avoid in making artistic pictures, and acknowledgment is made for using them to Mr. W. L. F. Wastell, Past President, R.P.S. (England), whose authoritative contributions and drawings on "Composition" to "Amateur Photographer" are widely known.

In Fig. 4 we have the vanishing point of the street in the center of the picture. This allows divided interest. There must be only one main subject and that

New Filmosound Library Releases

Riders of Death Valley (Universal). 15 episodes, 30 reels, \$3 per episode.

Vigilantes battle claim-jumpers in search for the fabled lost Aztec mine. After it is found there is a thrilling see-saw battle to hold it. Every type of action thrill known to the chapter-play is lavished on this super-serial. The cast alone is guarantee of its extraordinary quality: Dick Foran, Leo Carrillo, Buck Jones, "Big Boy" Williams, Charles Bickford, Jeanne Kelly. Available for approved non-theatrical audiences.

Butch Minds the Baby (Universal). 8 reels, \$17.50. Virginia Bruce, Brod Crawford, Dick Foran.

The story centers around Crawford. One more conviction will send him back to Sing-Sing for life. Crawford decides to give up his "profession" of safe-cracking, and works as a janitor. The baby and he become great pals; then his old mob moves in and attempts to force him to pull one "last" job. How he gets away with it provides suspense, laughs and more than a few moments of genuine pathos. Virginia Bruce as the widowed mother of the baby, and Dick Foran as the police parole officer contribute a love interest. Available for approved non-theatrical audiences after September 20, 1943.

should be in the vicinity of one of the converging lines of Fig 1.

Fig. 5 shows the corrected view of Fig. 4. The vanishing point is well to the side and a little lower. There is variety and shape in the picture, and it becomes more pleasing. A human figure increases the interest and leads towards the vanishing point.

In Fig. 2 we find straight lines across the picture, and while the house may have some architectural interest, it is not pictorial, and has no suggestion of good composition.

A change of viewpoint, as in Fig. 3, is far more satisfactory. The road "leads in" from the side, and carries a suggestion not of one particular cottage, but of many similar buildings.

Note: The above article is reprinted from Movie News.

ARTHUR EDISON, A.S.C.



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A. S. A. Prepares First Standards For Roll Film

THE American Standards Association has just completed the first standards ever prepared for the ten sizes of amateur roll film in most common use for snap shots.

Eighteen dimensional standards with appropriate working tolerances cover the ten sizes, since one of the spool standards applies to 2 sizes of film and one of the film standards is used with 2 different spools. Nine of these apply to film spools and nine apply to the film itself and its backing paper. Two other photographic standards approved at the same time apply to the dimension of photographic paper — centimeter-size sheets and rolls, and inch-width rolls.

Amateur roll film consists of a length of sensitized photographic film attached to a continuous strip of backing paper which is substantially longer than the film, as anyone who has ever developed his own film knows. The film and the backing paper are wound on a flanged spool to provide a unit which can be loaded into a camera and removed, after exposure, in daylight.

This familiar article of commerce and sentiment and art is used, in a camera, to produce on the film strip a series of negatives, the position of each of which is governed by centering a series of numbers—printed on the backing paper—within a small window in the back of the camera.

The first daylight-loading roll film was introduced to the photographic world as early as 1895. It represented a major step in the field of amateur photography. The growth of film photography has progressed to a point at which substantially more than a hundred million rolls of film were being produced annually by the American manufacturers before war-time necessities compelled a reduction.

Some of the film sizes included in these standards date back almost to 1895, although many minor dimensional changes have been made in them as production methods have improved and as camera designs have dictated more rigid tolerances. In some cases, moreover, film lengths have been increased to permit more pictures to appear on a roll.

No published data have been available throughout the years on the dimensions used by any manufacturer. Camera-makers, consequently—and particularly those who were not also film-producers—had to rely, in designing new cameras, on their own measurements of spools and film purchased on the market. It is little wonder, therefore, that some cameras did not function properly, or that they per-

formed satisfactorily with the film of one manufacturer and not with that of another—because of slight differences in the tolerances used by the manufacturers. Dimensional limits, minimum and maximum, had to be set up for the various spools in order to insure interchangeability in cameras and also to provide adequate protection for the film against unwanted light.

The films covered by the standards are those which give pictures of the sizes listed below and are designated by each manufacturer as follows:

Nominal Picture Size (in Inches)	Agfa Ansco	Eastman Kodak	Gevaert	R. H. Macy & Co.	Sears-Roebuck
1 5/8 x 2 1/2 1 3/4 x 1 5/8 30 x 40mm	A-8	127	G-27	27	S-27
2 1/4 x 2 1/4 2 1/4 x 3 1/4 2 1/4 x 2 1/4 1 5/8 x 2 1/4	B-1 B-2	117 120 G-20	.. 20	... S-20
2 1/4 x 3 1/4 2 1/4 x 2 1/4 1 5/8 x 2 1/4	PB-20	620	G-6-20	620	S-620
2 1/2 x 4 1/4 2 1/2 x 2 7/8 2 1/2 x 2 1/8	D-6	116	G-16	16	S-16
2 1/2 x 4 1/4 2 1/2 x 2 7/8 2 1/2 x 2 1/8	PD-16	616	G-6-16	616	S-616
3 1/4 x 4 1/4 3 1/4 x 4 1/4 2 3/4 x 4 3/4 2 3/4 x 5 1/2	E-6 F-6 M-6 G-6	118 124 130 122	G-18 G-24 G-30 G-22	18 24 30 22	S-18 ... S-30 S-22

These standards, as finally approved, give the film manufacturers the assurance that, if the film conforms to the standards, it will function satisfactorily in cameras now in use. They also point the way for designers of new cameras and new accessories—and they will serve as a basis for other standards under consideration by other ASA subcommittees.

The two standards approved for the dimensions of photographic papers cover centimeter-size sheets and rolls and inch-width rolls. The centimeter sizes are of relatively little interest to consumers in this country, but they are of substantial importance to the manufacturers doing export business to countries using the metric system. The standard covering dimensions of inch-width rolls gives specifications for width, length, and splice allowance. This should be of definite importance to designers of the recording equipment and other apparatus employing photographic paper in roll form.

All of these standards are available from the American Standards Association, 29 West 39th Street, New York 18, N. Y. The 18 standards for dimensions of roll films and backing paper are published together in a single document en-

New P.S.A. Index

Helpful reference use of photographic magazines has been made possible through publication by the Photographic Society of America of a "Photographic Index."

Work of Jayne O. Quellmalz, of 450 Madison Avenue, York, Pa., the "Index," to be published in September, December, March, and June issues of the "P.S.A. Journal," enables the amateur and professional photographer to locate outstanding articles in camera magazines.

The "Index" presents 50 subject headings and authors' names related to articles published in still and motion picture camera magazines, professional journals, and trade papers. Many of the references are to the "Journal of the Royal Photographic Society," a British publication. In many cases, important articles are listed both by author's name and subject.

titled American Standard Dimensions for Amateur Roll Film Spools, Film, and Backing Paper (Z38.1.7-1943 through Z38.1.24-1943) for 50 cents. The two standards for photographic papers: American Standard Dimensions of Photographic Papers—Inch-Width Rolls (Z38.1.5-1943); and American Standard Dimensions of Photographic Papers—Centimeter-Size Sheets and Rolls (Z38.1.6-1943) are available at 10 cents each.

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EASTMAN NEGATIVE FILMS

AMONG THE MOVIE CLUBS

Westwood Gadget Exposition

Last year several hundred avid movie makers flocked to the Gadget Exposition of the Westwood Movie Club of San Francisco. Those who attended were more than pleased with both the educational and entertainment features of the program. For obvious reasons it will be impractical to duplicate the Exposition this year on the same scale.

However, for the real gadget lover the program this year will be even more intriguing than last year's, as more time will be available for detailed operation and explanation of a variety of movie gadgets which the committee in charge is gathering together. Prize winning picture will also be shown.

All interested movie makers are cordially invited to attend this open meeting, to be held in the Westwood Movie Club's room at San Fernando Way and Ocean Avenue, San Francisco, California, Friday night, October 29th.

Utah Cine Arts Club

The first meeting of the fall season of the Utah Cine Arts Club was held the evening of September 15th at the Salt Lake City Art Center.

Highlighting the meeting were a talk by Dr. C. Elmer Barrett on "What To Do With Summer Footage", and a demonstration by F. K. Fullmer on "Step By Step Editing". Dr. Barrett had many helpful suggestions to offer the members who are planning to use their summer footage in the coming award competition.

A bit unusual was the talk by Mr. Fullmer on editing, for an uncut 8mm. film by Jack Andrews was shown and discussed. This same film will now be edited in time for the October meeting along the lines suggested by Mr. Fullmer.

Syracuse Movie Makers

Following are the new officers of the Syracuse Movie Makers chosen at the club's recent election: Nedford S. Olney, President; Robert F. Kimber, Vice-President; Walter Kellogg, Secretary; Seymour C. Ratter, Treasurer; Roy Pannenberg, Sound Technician; D. Lisle Conway, Corresponding Secretary. The following were named to a newly created Advisory Board: Archibald D. Rodger, Maurice H. Schwartzberg and Earl Abbott.

At the club meeting on September 7th and 21st plans were discussed for the production of another club picture.

Metropolitan Motion Picture Club

Three outstanding films were on the program of the September meeting of the Metropolitan Motion Picture Club, held in the Victoria Room of the Victoria Hotel, New York City.

Pictures shown were, "New Hampshire On Parade," by Fred Ells, "The Animals' Country" by Frank E. Gummell, and "Ether Bound Spirit" by Leo Hefernan. Eleven new members were added to the club rolls in the past month. They were Alfred J. Colombo, Mrs. Hazel Colvil, Arthur J. Devine, Edwin A. Ehlers, Lt. Col. Frank J. McLaren, Jr., Carol Pansky, W. T. Petersen, Arthur H. Schwartz, M. S. Cashman and Charles S. Licht. Alice Burnett was elected Secretary of the club, replacing Bob Coles, who is in the armed service.

L. A. 8mm. Club

THE Los Angeles 8mm. Club held its regular meeting on Tuesday, Sept. 14th in the Bell and Howell Auditorium.

It was "Gadget Night" and the members displayed their various and sundry devices. Included were titlers, spot light, iris fading arm, focusing tube and alignment guage, cable release, editing stand, dual turn tables and sound equipment and lastly, a "Dream Camera" complete with all the fixings including motor drive and brake for slow down to 1 frame per second.

The film fare included "Caught Short," a contest winning film by Mrs. Merle Williams, a vacation film by J. G. Hogue, and "Seeing is Believing," a reverse motion film by Fred Evans.

Long Beach Cinema Club

Two interesting meetings were held by the Long Beach Cinema Club during September. At the first meeting, on September 1, 1200 feet of films were shown. They included five 100-foot reels from Val Pope, a 400-foot 8mm. black and white, "The Quadrangle", by Mr. and Mrs. Frank Kallenburg, and a 300-foot 8mm. Kodachrome, "Super Women", also by Mr. and Mrs. Kallenburg.

Hal Hall, editor of the AMERICAN CINEMATOGRAPHER, was the guest of the club at its meeting on September 15th. He spoke on the part that cinema clubs can and should play in the war effort and in the post-war reconstruction period.

San Francisco Cinema Club

MEMBERS of the Westwood Movie Club were guests of the San Francisco Cinema Club at its meeting the evening of September 21st. After a joint dinner at the Women's City Club, seven films were shown.

The program consisted of "Visiting Nurse," by Dr. J. Allyn Thatcher and Jesse Richardson; "My Garden," by Ed. Franke; "Fantastic Formations," by R. Arfsten; "The Artist and the Model," by Ed. Sargent; "Kodachrome Slides," by Leon Gagne, Henry Swanson and Eric Unmack; "Apartment Victory Garden," by Clyde Wortman; "San Francisco—the Story Book City," by Lt. Russell Hanlon.

Saint Louis Club

Following are the newly elected officers of the Amateur Motion Picture Club of St. Louis: Paul G. Scholz, President; Warren R. Becker, Vice-president; Vernon L. Rasmussen, Vice-president; Lee Wheeling, Treasurer; Neil W. Butteiger, Secretary; Ben E. Betts, Director, Walter L. Michener, Director.

Tri-City Cinema Club

PREPARING for an active fall and winter season, President Georgia T. First of the Tri-City Cinema Club has appointed the following to the program and membership committees: Program, Tom Griberg, chairman; C. F. Smick, Robert Spitznas and A. R. Bruns. Membership, Jesse W. Nutting, chairman; Birger Swenson, Elmer Jansen, W. W. Walker, Peter De Vos and John E. Hoffman.

Color Slide Salon

Of interest to the many movie makers who also make color slides is the announcement of the First Annual American Color Slide Salon, which is sponsored by the Photographic Society of America.

This salon is the first ever held for color slides and will give the public an opportunity to see the best work being done in this field. Slides will be exhibited by panel and by projection, at the Art Center Chicago from Dec. 6 through Dec. 18. Deadline for entries is Nov. 29, 1943. Entry forms may be obtained from Blanche Kolarik, 2824 S. Central Park Ave., Chicago, Ill.

Railroad Ramblings

By F. M. HIRST

REMEMBER the days when the cry of "All Aboard!" sent a ripple of joyous excitement surging through your veins? When the clicking rails sang their song of adventure—of far-off mountains and tumbling waterfalls and torrential streams, of sunny days on the beaches and visits to the folks back on the farm?

Since early childhood we have been fascinated by the sights and sounds of these fiery steeds. Our imagination has kept pace with the mad rush of the engine, and our thoughts have wandered off like the graceful streams of smoke in its wake. To hear a distant train whistle on a rainy night quickens the pulse and causes a restlessness and a longing to be on the move. It conjures up fond recollections of the trips we used to take before the war. Though trips are "out" for the duration, we can re-live our adventures with projector and screen, and hope for the day when we can again make movies of trains.

We have a penchant for shooting train movies. The old adage "Once bitten, twice shy" does not apply to railway movies, for the bite of this bug is infectious. If the first bite takes (and it generally does), endless hours will be spent making movies of trains. The desire to shoot more of these "behe-moths of the rails" is insatiable, and before long, another addict has joined the already long list of railroad movie makers.

Ten years have passed since we first shot movies of trains and we can well recall our first scene. From the crest of a hill a peaceful landscape spread below us—gently rolling farmlands and wooded slopes, with a stream in the lowlands. The shadow of a cloud moved across the face of a distant hill, adding just enough movement for pictorial interest. Then it happened! A train raced into our scene and was gone as quickly as it came. From that day on we have been lured into waiting in strange places hoping for trains to appear. Like fishing, the best ones always get away. Many times we have waited, camera in hand, longing for action, and when no action occurred, put the camera away just at the psychological moment. Isn't it exasperating!

Moving trains add immeasurably to landscapes but such shots eventually get monotonous by their repetition. The problem which faces us from now on is how to utilize such scenes to the best advantage. Should we scatter them throughout a scenic film to add animation, or should we build them up and

make a railway film, packed full of action? Personally, we have used both methods but prefer the latter. A film containing action which progresses from scene to scene should be the goal of all movie makers, and railroading is made to order for such a film. It contains no plot (and plots seem to be a stumbling block for most amateurs), but its action can be continuous and satisfying. Its actors are the numerous and ever-present railroad employees, passengers and spectators. It abounds in human interest and thrilling action. This action which takes place on a station platform seems to be so commonplace that it is ignored by most people. By observing the sequence of events which happen when a train enters a station, or the preparations which take place just before it enters, one is able to plan a method of registering such action on film. It is chock full of human interest and has good entertainment value when shown on the screen. It can readily be seen that here is the material for a good film. It has been used time and again by news photographers and amateur movie makers; we have seen it in illustrated magazines, in travelogues, in advertisements. Anyone who aspires to make a complete film (and who doesn't) will find railroading to be a fitting subject with universal appeal.

To add a touch of realism, sound effects records of all kinds of train noises may be obtained to augment the pictures. The choice of film is of course optional, but our preference is Kodachrome. One may think that it is a waste of money to use color on a black engine, but this shiny monster will reflect the blue of the sky in its high lights and polished surfaces. Then there is the brass bell glinting in the sunlight, and the blue overalls of the train crew as they work on the engine. A casual glance fails to reveal the seemingly hidden colors that will be brought to light by the use of color film. So for natural beauty and fuller enjoyment of railway pictures, by all means use color film.

In the past, movie makers who traveled on transcontinental trains had wonderful opportunities for shooting this subject. These trains are serviced approximately every 250 miles. It is interesting to watch mechanics wield enormous grease guns. While this is going on, other crew members are climbing over the engine, each doing a specific job. There is so much to shoot that one should take his movie camera up front at each service stop in order to



photograph the action for a complete sequence.

After the sequence of servicing the engine is completed, there are many other interesting activities to be filmed. Blocks of ice on trucks are ready to be loaded into the cooling systems of the various cars. On a sunny day, with a blue sky overhead, ice reflects blue tinged with green, and along the broken edges can be seen the colors of the solar spectrum as the light rays are decomposed or dispersed by refraction through these prisms of ice. On the top of the car, the crew is busily lowering these blocks into place, while on the platform pullman porters chop the ice for cooling the drinking water. Don't miss the opportunity of shooting a pullman porter as he pauses on the step to give a big smile. A rich chocolate colored skin and a smile is a happy combination that will bring cheerful reaction from any audience.

Further along the platform we find window washers flooding away the dust of the recent journey; baggage being

(Continued on Page 378)

Railroad Ramblings

(Continued from Page 377)

loaded and unloaded and cars being added to the train. Passengers climb aboard and a congenial conductor will pose as if giving the signal to start. Try for shots of other trains while at these various stops and use them to fill in the gaps for continuity—for instance, a shot of an engineer as he pulls the whistle cord prior to starting, the first puffs of exhaust from the stack as the engine starts, the bell ringing, steam spurting from the piston and the driving wheels beginning to turn. Then take shots of the train moving past the camera, a view of the back end of the train as it pulls out of the station and recedes. Edit these shots in their proper order and a thrilling cinema journey has begun to unfold.

Good train shots (especially those taken from a moving train) can be made only with the aid of a tripod. Before the train leaves the station, place the camera and tripod on the observation platform. Be sure that the camera is level and the horizon straight, then lock the tilt and pan head securely. As the train is pulling out of the station start the camera running. The filmer will find that it is impossible to look through the finder while the train is in motion, due to the vibration and movement. This vibration does not seem to register on the film, although some filmers prefer

to run the camera at a higher speed as an added precaution. Personally, we prefer normal speed, for it gives a more natural effect on the screen.

The fact that the camera has been centered on the track will insure the correct perspective. As the train gains momentum, brace yourself and keep the tripod pressed firmly to the floor of the car. When interesting scenery passes by, press the lever for a normal length shot—you need not bother with the view finder once the camera is set, but do not neglect your exposure. I find that the best meter reading is obtained by tilting the meter slightly downward and avoiding too much sky light. In this way the browns of the earth and the greens of the trees and fields will be properly exposed. You may find that your sky may not be as blue as you like it, but the scenery which you enjoy will register correctly.

Should you be as fortunate as we were, to be on the observation platform of a 26-car train, it is simple to vary your shots. Each time the engine made a turn it was possible to photograph nearly the whole train as it rounded curves and crossed bridges. Allegorically, it was a slow-moving red serpent twisting its way in an S turn to enter a hole in the side of the mountain. From the tunnel on the other side it emerged to follow its tortuous route through the Fraser and Kicking Horse canyons, till the mountains were rosy-tipped by the setting sun. A sequence of sunset

colored mountains growing progressively darker until the rails disappeared in golden ribbons ended the picture. In this manner we photographed the Canadian Rockies from Vancouver to Banff.

After the war, when military restrictions are lifted, we hope to be able to continue our railroad movie making. When that time comes, do not misunderstand and think that one has to take a transcontinental trip in order to make a good railroad movie. Nothing is further from the truth. All that is required is a movie camera and a railroad, and a little imagination. Why not go to a local station and photograph several trains as previously described? This will be your start to which more shots can be added from time to time. It would be a mistake and very disappointing to try and complete such a film with one try. The next step would be to board a train, even though it is only to the next station stop, and shoot your scene of the station receding in the distance. Also try a few shots along the way to be cut in later.

Carry your camera with you when out for a ride in the car. Shoot head-on views of trains from low angles, trains crossing bridges over streams, through scenic stretches, passing grade crossings. Shoot from bridges looking down on the train, trains rounding curves. The possibilities of views and angles are too numerous to mention. Finally, bring your train back into the station, showing it coming in from a distance to a full stop.

Some time ago a movie contest was held in which each contestant was to produce a complete picture on 25 feet of 8mm. or 50 feet of 16mm. film. The subject matter was left to the choice of the individual. A new blue and silver streamlined train had just started to run. Here was just the right subject for a film. We planned a short scenario and then proceeded to get the necessary shots. We had two opportunities each day to make our shots as this train passed through early in the morning and again at noon. Work canceled the noontime shots, so a number of early trips into the countryside were required. It may have seemed like a hardship but the results were worth the effort.

When a sufficient number of railroad shots had been acquired, all that was needed to finish the picture was a few actors. We asked our maid if she could press into service a few colored children to play the parts. The next day we received an answer: "Lawsee," she said, "you'd hafta hire a bus to hold all the chillun that wants to ack in yo' movies." At the appointed time, when we arrived to pick up the children, we noticed dark faces and the whites of inquisitive eyes peering from windows and doorways. Our destination was a railroad track that was very seldom used.

The film was titled "Perils of Paul." The story opened with two colored boys thumbing a ride on the roadside. All

(Continued on Page 381)

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Hands Are Nice

(Continued from Page 365)

tried to get her to either do something with her hands or hide them plausibly?

Simple portraiture is the matter of studying one's subject—then shoving lights around until the general effect accomplishes a result which pleases the photographer at the moment, and stimulates the hope that he will be accorded some agreement when she looks at the proofs.

Up to this point the problem is not too complicated. Of course, one meets varying interpretations of the term cooperation, depending upon whether the sitting takes place off stage between takes, or in the gallery after a long day on the sets. Amazingly, most of our film girls take punishment under certain of these circumstances that would tax the physical, if not the temperamental, stamina of more robust males.

But portraiture is not always simple, even with most of the elements in one's favor. Photography of the human form divine discloses the distressing fact that divinity represents an ideal which is but loosely interpreted in substance!

A young girl, who has survived a screen test, is known to possess most of the physical attributes which correspond to the current appraisal of "pulchritude." The less tangible but more important quality, charm, is one that cannot be cultivated consciously, nor can any director in the world wheedle, cajole or shout it into existence. The amazing thing is that even when these girls do possess charm as well as the other qualities of beauty, most of them do not know what to do with their hands when they get before a still camera.

In actual operative practice, lighting of the face takes priority. Posing the subject is a cross between what the photographer wants and what he gets. Results are a compromise, and limited to only three considerations—time, disposition and the boundaries of eight by ten.

Disposal of hands is therefore a problem of either not showing them at all or including them in such a way that they shall appear either expressive or attractively functional. Expressive hands need not be actually beautiful from a purely physiological view. They can reflect character; and they must, if the individual has any character to reflect.

I've experienced the least difficulty in the photography of girls who have had the advantage of dance training. Not "rug cutters," but the real disciples of Terpsichore. They have learned that "every little movement has a meaning, etc." One has only to think of Ruth St. Denis to know what I mean.

When a hand must appear as accessory my effort is to minimize it's breadth. This is done by never allowing it to be shown "full face." It is usually comfortably or naturally dropped, palm uppermost, in the lap. Or it can be draped at the waist, with most of the fingers back stage, or so placed as to show it "on edge."

COMING

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Like condiments in a culinary triumph, hands should never insinuate themselves into a picture beyond the point of offering the consciousness that they are a complement—indeed, a compliment to the ensemble.

I cannot ignore the circumstance that the Hays censorship office has never deleted pictures of seductive hands.

Buy More Bonds

New Afga Plant

A GFA ANSCO recently announced War Production Board approval of the erection of a new \$1,000,000 addition to its film plant in Binghamton, N. Y. Construction has already begun and schedules call for the new plant to be in production late next spring.

The addition, 25 x 450 feet, in three and four story sections, will house a new film coating unit which will materially increase coated production and enable the company to supply still larger quantities of film to the Army and Navy.

Evolution of Transparency

(Continued from Page 359)

ponent units could hardly be blamed that they did not produce the specialized equipment we so urgently wanted. The market was far too small, and the customers for too individualized to permit even the pseudo volume production known in the manufacture of ordinary professional cameras and projectors. One studio might prefer Bell & Howell type movements for their projectors; their neighbor across the fence might demand Mitchell-type registration. What one expert liked in a lamphouse or lens, the next man might condemn. The poor manufacturer simply could not afford to assume the expense of engineering a product of which he might sell but two or three single units.

Realizing this, a group of us, under the general sponsorship of the Research Council of the Academy of Motion Picture Arts and Sciences decided to attempt to get the industry's process specialists and the various manufacturers and engineers involved together, to the

end that we might at least try to set up industry-wide standards and specifications for such equipment, from which the several manufacturers involved could build equipment which would stand a chance of suiting the majority of the industry's transparency-shot specialists.

It was not an easy task to do this. An infinite number of personalities, professional suspicion and "trade secrets" were involved. But finally we managed to get together all of the industry's leading process-shot specialists, and with them the best engineering brains of the firms manufacturing cameras, projectors, lenses, arc and incandescent lamphouses, and so on. At first, I must admit, the sessions of this committee were something like a gathering of rival—and highly suspicious—tomcats. Nobody wanted to make the first move, and nobody wanted to be the first to withdraw, either.

But finally, as one or two of us began to make completely frank statements about our methods, plans and problems, the others saw the advantages of wholehearted cooperation, and the committee

became a fully cooperative unit. We threshed each problem out extensively, from every angle. Finally, as I reported to a previous convention some two years ago, we set up a series of specifications for equipment, including basic specifications, which represented definite requirements; auxiliary specifications, which were desirable methods of meeting these requirements; and accessory specifications, which indicated features that were desirable, but not indispensable. Up to this point, the project represented well over 2,000 man-hours of technical effort, and combined the views of approximately 50 experts in the field of process projection cinematography. The specifications set up were so much beyond our immediate requirements that it seemed almost over-optimistic that they could ever be completely realized.

The start of this project was in 1938. The specifications were approved in 1939. During this past year, the first complete equipments built to these specifications have been delivered and placed in service. The details of that equipment will be presented at another time: but I would like to go on record here as stating that in all respects the manufacturers have met the specifications, and in some instances, actually exceeded them.

At the Paramount Studio we now have four of these Academy Standard equipments in operation. Several more are on order, but it is likely that their delivery will be held up "for duration." Each equipment forms in itself a complete unit for conventional single-head transparency projection, affording illuminating power and convenience of operation absolutely unknown hitherto. Any one of these "singles" will permit us to make shots—either in black-and-white or in Technicolor—which would previously have demanded double-or triple-head projection only a short time ago.



For scenes which demand even greater scope, *any* three of the new heads and *any* three of the new lamphouses can be assembled into an extraordinarily efficient triple-head equipment by simply removing them from their usual bases and attaching them to our new standard triple-head base.

In this triple-head work, as I believe has been explained in papers presented at previous conventions, three complete projection mechanisms are used. The center one faces directly toward the screen; the two outer ones face inward, and their images are reflected to the screen by means of front-surface mirrors. The three images are accurately superimposed on the screen, effectively tripling the intensity of illumination on the screen. By manipulating the respective intensities of the three light-sources, or the densities of the three background prints, a very considerable degree of control of the intensity of the projected composite image is possible. The superimposition of the three images also tends to eliminate the problem of

(Continued from Page 382)

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*The Most Complete 16mm
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FROM SCRIPT TO SCREEN

Academy Still Show

THE third annual Still Photography Show of the Academy of Motion Picture Arts and Sciences will be held Nov. 26, 27, 28. As in the past two shows, only lensers within the film industry will be qualified to enter pictures.

At a meeting of the still photographers and Academy and union officials, the following classifications were agreed upon:

Best portrait, male (closeup), female (closeup), of more than one person (closeup), best character study, male, female, best posed production still, in a studio, with studio control of conditions and lighting, out-of-doors, predominantly natural light. Best action production Still: posed in studio with studio lighting; unposed in studio, with studio lighting; posed out-of-doors, unposed out-of-doors; best glamour picture, best candid shot, best poster art, best fashion study, best pin-up art of the year, best picture in relation to the War effort.

All still pictures photographed between June 1, 1942, and Sept. 1, 1943, will be eligible for consideration. Announcement of various committees, prizes and location of the exhibit will be announced later.

New B. & H. Superintendent

The Bell & Howell Company announces the appointment of a new General Superintendent for their Larchmont Avenue Plant in Chicago. He is Mr. I. G. Wilcox, recently the Superintendent of Parts Manufacture at the Rockwell Plant, formerly engaged in time study, fixture sketching, inspection and production work. Mr. Wilcox has been with Bell & Howell continuously since 1926.

Railroad Ramblings

(Continued from Page 378)

cars passed them by so they wandered off to the railroad and started to walk the rails. The larger of the two made the best progress and was soon leaving the smaller boy behind. The small boy stumbled and caught his foot in a switch and the trouble started. While he was pulling frantically and calling to his companion the scene changed. We see the new streamliner starting from the station and gaining momentum as it travels through each scene. Cutting back, we find the larger boy racing to the aid of his companion. The train is roaring through successive scenes as we cut back and forth between the struggling boys and the train. Finally the larger boy, unable to free his companion, put his arm around the smaller boy and raises his other arm to cover his eyes. In the next scene we see the train rushing headon toward the camera, and, as it comes upon us, a title flashes on the screen, "Will he get free?"—then the next title "Continued next contest."

Well! What did you expect on 25 feet of 8mm. film—a full length thriller?

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\$1500.00 FOR IDEAS

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8MM MOTION PICTURE CAMERA & PROJECTOR DESIGN COMPETITION

You who know what YOU want in the next motion picture camera you buy—what YOU think will simplify and perfect the operation of your next motion picture projector—this is YOUR OPPORTUNITY to share \$1500.00 in U. S. War Bonds (maturity value) that DeVry Corporation will award those who contribute the best and most practical ideas for TOMORROW'S 8MM MOTION PICTURE CAMERA & PROJECTOR.

What should this camera look like? How should it be equipped? What style projector do you prefer? How may its operation be simplified, perfected?

PROJECTOR: ventilating system (lamp house); optical system; film movement; reel arms; tilting device; film safety devices; take-up framing, focusing and shutter mechanisms, etc. Can you suggest particular developments of these features?

CAMERA: (single or turret lens mount) view finder; shutter, footage indicator; loading mechanism; winding key; exposure guide; lens mount; focusing; single frame release mechanism, etc.

Submit YOUR IDEAS in rough or in finished drawing—with brief comments if you desire. You may want to enter working model of a part. Drawing or designing skill (or workmanship of model) is secondary... the IDEA is what counts. But mail the coupon today for complete details—award amounts—Official Entry Blank. There's no obligation. Competition closes midnight, Dec. 31, 1943. DeVRY CORPORATION, 1111 Armitage Ave., Chicago.

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FOR PROJECTOR DESIGN
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3rd Prize.. 50.00 in War Bonds

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6 \$50.00 U. S. War Bonds for the six best individual mechanical ideas.
4 \$25.00 bonds for the four best supplemental designs, or mechanical suggestions, contributing to the over-all Camera design and operation.

PROJECTOR:
6 \$50.00 U. S. War Bonds for the six best individual mechanical ideas.
4 \$25.00 bonds for the four best supplemental designs, or mechanical suggestions, contributing to the over-all Projector design and operation.

*All War Bond amounts are of maturity value... In case of ties, duplicate awards will be paid.

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The Radiant Manufacturing Corporation have caught the spirit of the times with the illustration on the front cover of their new catalog, which is shown above. The company announces that the WPB has permitted them to release a limited number of metal screens for essential activities.

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Evolution of Transparency

(Continued from Page 380)

grain, which is of course further minimized by the use of fine-grain film stocks in making these prints.

Some idea of the advantages we have gained through this triple-head technique and the more recent addition thereto of the greatly increased efficiency of the Academy Standard units, may be gained from the following figures. A few years ago, when we first had need for extremely powerful process-projection equipment for use in a Technicolor picture, we used what was then the most powerful single projection unit in the industry, the very fine one owned by Selznick Productions. This was so outstanding that it had received an Academy Award.

By actual measurement, this outfit enabled us to give our screen an illumination of 29,000 lumens.

Later, we developed our own first triple-head equipment—an assembly of the best units available before the present Academy Standard equipments became available. This enabled us to work successfully in black-and-white on a 24-foot screen, with an illumination of some 50,000 lumens.

Today, with the Academy Standard triple-head equipment, we have worked successfully on a 36-foot screen in black-and-white, and on a 24-foot screen in Technicolor, with a screen-illumination of 105,000 lumens.

It would seem that this would represent an ideal condition in transparency projection process work. But it does not. So closely does the demand for greater and still greater scope keep crowding on the heels of technical developments that it has already proved inadequate in at least one instance. In making several recent productions we have had the problem of using a projected background in some highly important, very large-scale sequences and doing them in Technicolor. Due to the requirements of stories, action and setting, screens of 24 feet in width—or even 36 feet, the largest available—would have been completely inadequate.

For example take the case of a Forest Fire picture we were making in color. We finally compromised on a total spread of 48 feet of background-screen width! Even more would have been desirable, could we have obtained it.

To achieve this, which I believe to be one of the largest projected process-shots thus far attempted, in either monochrome or color, we used two triple-head equipments, projecting on adjoining screens each 24 feet wide. For one of these, we employed our own Academy Standard triple unit. Since we did not have enough of the new heads to assemble into another complete triple, we used another triple, built by R.K.O., largely to the new standards. With these we obtained our shot, most successfully. Yet inevitably, the demands being made for future productions are already urging us to surpass these. We have just completed a number of these dual-triple color shots.

In making these shots, the projectors are never less than 70 feet from the screen, and often 100 to 150 feet distant.

This fact may help to explain to those of you who have not been so intimately associated with studio transparency process-projection work, something of the need for extreme precision in designing equipment for this service. When you magnify a single-frame motion picture image 1x1½ inches in size to fill a screen 27x36 feet, you are at the same time magnifying every mechanical and optical imperfection in the equipment that projects it. Moreover, when you consider that in effect this enormously-magnified picture is at the long end of a lever-arm 100 feet or more in length, you will see that any irregularity of film-registration, and the like, in the original film or its passage through the projector will be disproportionately enlarged on the screen. It will show up as doubly defective in comparison with the steadiness of the actual foreground action as photographed by a modern studio camera. With the foreground steady, and the projected background portion of the scene badly unsteady, all illusion of reality would be lost in the composite scene.

It is a pleasure to report, therefore, that even though at the start of the project some of our specifications and tolerances seemed almost unattainably high to the manufacturers involved, they have in every case been equalled, and in some instances surpassed.

The convenience and precision of operating these new units should not be overlooked. The design has been so developed as to give as nearly as possible foolproof, and in some instances automatic operation in every way possible. Synchronizing of camera and projector, for instance, is automatically assured. Focusing is effected from camera position, by remote control. The projector

(Continued on Page 386)

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Letters From Our Readers

The following letter was received from Mr. J. P. J. Chapman, of Bournemouth, England, who herewith presents his ideas regarding what is needed in an ideal post-war camera and projector. We sincerely hope other readers will pass along their ideas, too, for publication in this magazine.—The Editor.

Dear Sir:—

I read with interest your remarks in the July issue on post war cameras and projectors, so perhaps you will be interested to hear from this side of the water. My remarks are, I think, shared by other serious workers, who are ever on the watch for something that will give just those extra results.

Lens Equipment:—Four mounted on a revolving head, and so designed that the longest will not shadow any other. They must be quickly demountable, and the optical units so arranged that the lenses can be cleaned **INSIDE**.

Spring Run:—One hundred feet at the very least.

Direct Image Focussing:—A better system required, with provision for cleaning the ground glass screen.

"Gadgets":—All those found on most good cameras, such as the Kodak Special.

Gate:—Must be easy of access, quickly demountable for cleaning.

Film Track:—Must be without excessive bends and twists.

Finish:—A good serviceable hard wearing surface. Chrome-Plating is not suitable in sea atmospheres. There are plenty of other metals, and a dull finish is better.

Tripods:—As this is an important extra, it can well be included. They are usually expensive and flimsy. A really good one, with a non-sticky head is greatly to be desired.

S.O.F. This would appear to be already well catered for.

Projectors:—Nearly all sub-standard machines have many faults.

Frame or Body:—Generally made of Aluminum or Dow metal, frequent demounting wears out threads. There should be hard brass inserts.

Machine Parts:—Could be of more suitable material, and where steel is concerned, harder. Too great an effort has been made to produce a highly com-

pact "pretty" result, with consequent sacrifice of efficiency and quality. Design has not been considered, too many parts have to be taken adrift to replace a faulty unit.

Film Track:—Fed in and out should have as few sharp bends and twists as possible.

Take-up:—Slipping belts are a poor compromise. A clutch which can be adjusted while running should be incorporated.

Gate:—Rapid demounting and re-assembly, with 100% accessibility to all parts. Edge grip on film.

Picture shift mechanism, the remarks on the gate cover this equally. Single claw is not sufficient; I favor the octa-cross.

Volt or Ammeter:—Should not be in lamp-house, but mounted at side with pea light. Provision should be made that this is not overloaded if lamp blows, i.e., when machine is fed through a resistance from a high voltage line.

Blower:—This soon dusts up, and cleaning is difficult. It should be demountable so that it can be washed in a suitable fluid.

Controls:—Need individualization.

General:—As 16mm. has passed the stage of the nursery, it follows there will be a revolution in design incorporating many 35mm. features. The 8mm. can hardly be incorporated at the present juncture. Final decision rests with demand and production costs. It would seem to be a subject for the Academy of Research Council and the S.M.P.E.

As this is intended to be a letter and not an article, much has been glossed over.

Finally, but not least, there is much improvement needed in 16mm. sound. Sound Heads and Amplifiers need attention.

With best wishes, yours faithfully.

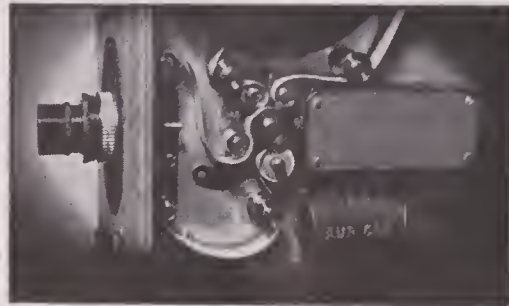
(Signed) J. P. J. CHAPMAN

Opens Syrian Office

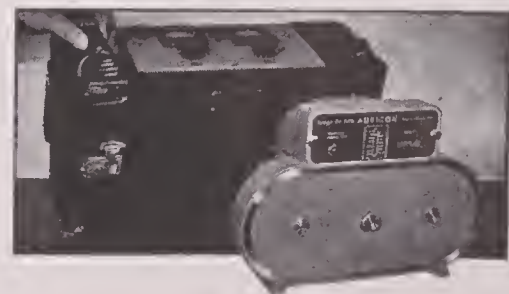
A new branch office is being opened by Warners in Beyrouth, Syria, with George Mamri as manager. Territory is under supervision of E. De Leon, manager of Warners Cairo office.

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- ★ High Fidelity Sound
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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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These precise optical units are of the greatest importance to our armed forces, for without accurate military instruments for sighting, fire control and photographic aerial reconnaissance their fighting machinery would be of little value to them.

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Our production is keyed to fill the requirements of our Government, and of others on orders with priority certificates. "GOERZ AMERICAN" lenses for civilian use will again be available after Victory.

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Professional and Amateur

Sixth Sense in Film Mechanics

(Continued from Page 361)

hear it! Yes, we are able now to 'hear' the sketch of a landscape. Musical harmonies are based upon mathematical proportions already in the lines of Michaelangelo's masterpieces. Lionardo da Vinci and all the great masters of the Renaissance used to express their perception of the inner harmony of their works, as if they were touching the strings of some unknown musical instrument. . . . The creations of these old masters give us the key to the golden door of a new sound world.

"From Egypt's pyramids, obelisks, temples and statues along the road of the centuries, down to the modern structures of Paris, London, Amsterdam and New York . . . sleeping melodies, symphonies, reveal the secret that the creation of human genius can not only be seen, but also heard.

"There is a sacred pastoral melody in the mountain ranges of California. . . . There is a song . . . not as the composer's envision it in their inspiration, but of the music that the architects, engineers and brick-layers, so unaware, had left in the lines of the skyscrapers of Manhattan. . . . They shall be heard."

Spencer Announces New Test Chart

Announcement of a new photographic test chart is made by The Spencer Company, Mount Vernon, New York.

This chart measures 16x22 inches and is printed in the full color scale and can be used anywhere to test lenses of any type, focal length or speed, for any of the usual faults. The chart sets up tests for determining resolving power, color rendition and accuracy of speed ratings. Tests for flatness of field, linear and spherical distortion, astigmatism and other lens faults can be made. With this chart optimum aperture (best opening to use) may be found for each lens; filter factors may be established as well as filter characteristics determined. Effects of supplementary lenses can also be checked.

A monochrome step-wedge included on the chart may be used for making grey scales, also for checking exposure and developers and for measuring gamma with sufficient accuracy for practical photography.

Glamour in Industry



Hollywood has no corner on beauty and glamour—proof of that statement is contained in the accompanying picture of Stella Peel. M-G-M like it so well, they've asked Stella to come in for a screen test!

Stella's picture inaugurated a new feature—the Pin Up Girl—in the July issue of the Finder, employee magazine of the Bell & Howell Co., makers of motion picture equipment and optical devices, now engaged 100 per cent in war production. The magazine is mailed regularly to the hundreds of Bell & Howell former employees who are now members of the armed forces.

Stella works in the Purchasing Department at Bell & Howell—one of the army of women on the home front, fighting the battle of production—one of the women behind the men behind the guns.

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Cameramen in Uniform

(Continued from Page 362)

actual contact made only by aircraft; such was the case in the Coral Sea battle. An attack is sudden and short-lived, especially if your own fighter planes are on the job. An exciting dog-fight is out of camera range in seconds. The crash of a Zero is just a plume of smoke on the horizon.

Some days after the battle of the Coral Sea, the Admiral in command of our Task Force ordered my ship to proceed to an Australian port, and but for a bit of luck I would have ended up there instead of returning to Pearl Harbor as I had planned. Our ship had a badly damaged plane and a replacement from a sister cruiser was ordered. Since a boat would return the aviator to his ship I quickly received permission to transfer to the ship which would return to Pearl Harbor, so with but minutes to strike the cameras and pack, I found myself bobbing around in the none too calm and sub-infested waters of the South Pacific in a boat no larger than a cockle shell, or so it seemed, loaded to the gunwales with the returning aviator, a news correspondent, my enlisted man, the boat crew and all our camera and personal gear. It wasn't until after we had been hoisted safely aboard that I learned that just a few weeks before a boat from this same ship engaged in a similar transfer had capsized, spilling two new photographers into the drink and losing their equipment.

On my return to Pearl Harbor I learned that Comdr. John Ford had stolen a march on us and with one photographic specialist had personally photographed the Jap bombing raid on Midway Island. With his film and more which was shot by Lieut. Kenneth Pier the battle of Midway, I was flown via Clipper to Hollywood to prepare for the Navy Department a blowup to 35mm. Technicolor of the 16mm. Kodachrome film.

The first screening of the 16mm. revealed a very disturbing fault; the violent concussion of the exploding bombs had caused the film to jump out of frame in the camera aperture, but fortunately it regained its normal frame after a few feet. At first the film didn't seem usable, but since no other film of the explosions were to be had we put them in just as they were and the result, as seen in the public release of "The Battle of Midway," caused considerable comment by several Hollywood technicians who thought we had done this optically just to produce this effect.

Combat photography is extremely difficult and trying. The cameraman in uniform must be patient, yet ever alert, for when things do happen they happen fast and with no chance of a second take. You risk your neck and at best the results on the screen are not likely to be as spectacular as the effects produced every day in Hollywood. As one old time Naval Officer put it, "You guys must be braver men than we, or

else just plain nutz." I am sure the latter part of the quotation was his opinion.

But photography has proved its strategic value and is playing an ever increasing part in the winning of the war.

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Evolution of Transparency

(Continued from Page 362)

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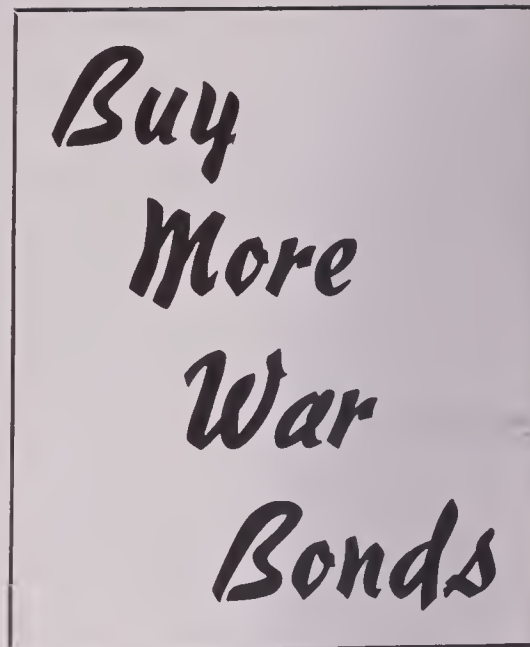
Where hitherto these background projectors have been at least as noisy as the average theatre projector, and necessarily had to be operated only from within a bulky, soundproof booth when shooting sound, the new Academy Standard units have been silenced to a degree comparable to the noise-output of a modern, blimped studio camera. Taking noise measurements at the usual 45-degree positions about the projector, at a distance of 6 feet, and using a meter which employs a 40 db ear loudness weighing characteristic, and calibrated with respect to the standard reference noise level of 10⁻¹⁶ watts per square centimeter, the noise level of one of these new machines is below 34 db.

These are not mere conveniences in operation. They add very measurably to the productive capacity of the machines. With less convenient types of transparency process projectors, with their less convenient controls and the added bulk and complication necessitated by the big soundproof booths, we could not work particularly fast; two or three set-ups of "A-picture" quality were a pretty good day's work. Today, with the new units, we find we can work our projectors with all the speed and facility of any camera! Even with two triple-head projectors and in Technicolor, our production record shows that we march along making from five to a dozen or more set-ups per day. In other words, in spite of the added complications of triple-head operation, the new equipment has enabled us to turn out two or three times as many shots per day as had been previously possible.

Looking toward the future, I feel that the fact that the fifty members of this committee were able to cooperate in drawing up these industry-wide standards, and that the executive heads of several studios (not least of which were the officials of my own studio, Paramount) had sufficient confidence in the judgment of their technicians to back that judgment with sufficiently large orders for the actual equipment so that the manufacturer could find it economically possible to engineer and build units to these high new standards, is bound to prove of incalculable value to the industry during the years that lie ahead. The war has long since had its effect on production. Location trips are becoming less and less practicable. All coastal areas are in restricted combat zones, and photography—even under strict military supervision—is virtually impossible. The demands of the military services have already made a very noticeable drain on our trained studio personnel, and that drain will increase. Yet we must make pictures; they are vital and essential to the preservation of civilian morale in wartime.

In the production "For Whom the Bell Tolls" we made most of the medium and close-up shots, comprising more than 286 set-ups, most of which are in the finished release print. We only recently had five out of eight companies shooting in one day doing transparencies, and utilized altogether eight equipments, including two triples.

The answer, as we are already finding, is partly to be found in constantly increased use of transparency process-shots, and of a constantly-increasing scope. Speaking with the utmost conservatism, it is safe to say that the fact that we now have this perfected equipment available in at least some studios has proven to be one of the industry's most valuable assets in continuing production during the difficult days we are now going through and that are ahead of us.



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In This Issue...

**Films Soldiers Want
Lapse-Time for
the Amateur**

**November
1943**



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HOW Du Pont raw film stands up during the period between manufacture and exposure is determined by aging tests conducted at the Du Pont Research and Control Laboratories.

Here we see laboratory assistants operating a Stroboscopic Photo-electric Densitometer, an apparatus that simplifies and automatically improves the accuracy of density measurements used in determining speed and contrast.

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2. Eyemo goes aloft. Cameraman climbs to bird's-eye view on observation post in Tobruk and hoists his equipment up after him.

3. The man and his weapon. He fights alongside his buddies as a regular soldier—and does the extra job of filming battle actions. Many of these men have long civilian experience as news photographers or in British and American film studios.



All pictures courtesy of Official British War Film "Desert Victory," released through 20th Century-Fox.

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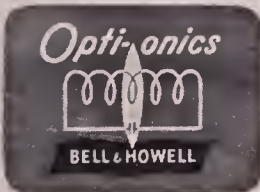
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

NOVEMBER, 1943

NO 11

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The Front Cover

This month's cover shows Cinematographer Victor Milner, A.S.C., and Director Cecil B. De Mille 45 feet in the air on a camera boom shooting a scene for "The Story of Dr. Wassell." The scene represents a section of the waterfront at Tjilatjap, Java. The film stars Gary Cooper.

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PRODUCTION STILL OF THE MONTH

By James N. Doolittle

This striking photograph is a scene from "Three Russian Girls", starring Anna Sten and Kent Smith. Miss Sten was assisting a wounded soldier (Jack Gardner) from a field hospital being bombed when Mr. Doolittle got the shot. "Three Russian Girls" will be released by United Artists. It is a Gregor Rabinovitch production. It was directed by Fedor Ozep and Henry Kessler. Eugene Frenke was associate producer, and John Mescall, A.S.C., photographed it.

Films Soldiers Want

By PRIVATE PETER FURST, U. S. A.

A FOOT-WEARY platoon of Medical Department soldiers, this writer among them, was pitching tents under the burning noon-day sun in a Texas bivouac area. The men were carrying full field equipment, gas masks, pistol belts, water canteens, full packs, steel helmets. They had marched twelve miles that morning through dusty terrain, the sweat from their bodies forming an almost solid cake with the dirt from the road.

Periodically, when the going got too rough, they had torn off their helmets and poured the warm water from their canteens over their heads. They hadn't taken much of this water, even though they were thirsty, because before they left that morning at six, the lieutenant had put two salt pills into their canteens. Their breakfast, after an hour's marching, had consisted of the army's celebrated K ration, "dog biscuits," a fruit bar, coffee powder, concentrated egg yolk and pork, and the men weren't used to that kind of diet. By the time they had finished their lunch, also K ration, and had gone through an afternoon of tear gas attacks, litter bearing, collecting "wounded" off an imaginary battle field, bandaging "broken" bones and more gas attacks, the men dropped where they stood and went to sleep. These men, mind you, weren't "old" soldiers. They were green—rookies—and for most of them this was the toughest day they had ever had in their lives.

But when someone yelled, "Mail," and the truck from camp drew up with the men's letters from home, these soldiers came alive faster than on a Saturday afternoon when the passes are given out at the company office for the nearby town.

Thus, if you made up a list of the things that go toward keeping up the morale of the American soldier training for battle, his mail from home would be way up at the top. Second in importance, without a doubt, as a morale factor, is entertainment. Mail is the main link between the soldier and his home—his family, his girl, his friends. Mail and entertainment together form the soldier's link with the life he will someday return to, and possibly sooner than he expected when he entered the army.

One could talk, perhaps, for hours about mail and what it means to the soldier, how he feels when he stands in line for a letter from home, hearing everyone's name called except his own. But this is a magazine mainly concerned with the motion picture business, and therefore this article will concern itself with entertainment.

Anyone who has ever been to a Saturday afternoon matinee in a neighborhood theater can easily imagine what goes on in an army camp theater. The men yell and whistle and laugh like a bunch of kids, the day's worries and hard work forgotten completely. Because, on the screen, before their eyes, they see the things they dream about. They see the girls they used to go out with—a little more beautiful, a little more sophisticated, perhaps, but still their girls—, they see their home towns and themselves walking along the street. That boy on the bench with the pretty blonde in his arms, that's you, soldier. The fellow in the smart, gray flannels, that's you too—or will be, soon, we hope. And in a war film—that guy at the controls of a Fortress, that might have been you, soldier, if the army hadn't decided otherwise.

Some of this might make him, the individual soldier, feel a little homesick, but that's really the way he wants it. He wants to be reminded, that's why he talks about home at the PX, on a march, in the barracks. That's why listening to some song on the radio, or the mention of his home town, or, for that matter, even of his home state, makes him feel a little sad and lonely. Quite apart, of course, from all that, he wants desperately to be entertained. He wants, if possible, to forget about the dust and dirt, and orders and reveille and full packs on his aching back.

This however, should not be taken as an indication that the men training for the battles of tomorrow do not want to see a good, rip-roaring war film. Even though there again they may see the dust and dirt of their own drill fields, it is others that are doing the working and the sweating, and it makes them feel good. The civilian movie makers should hear the howls of delight that go up when the soldiers in the army camps see other soldiers on the screen on KP or drilling on a dusty field or marching along a road with full field equipment.

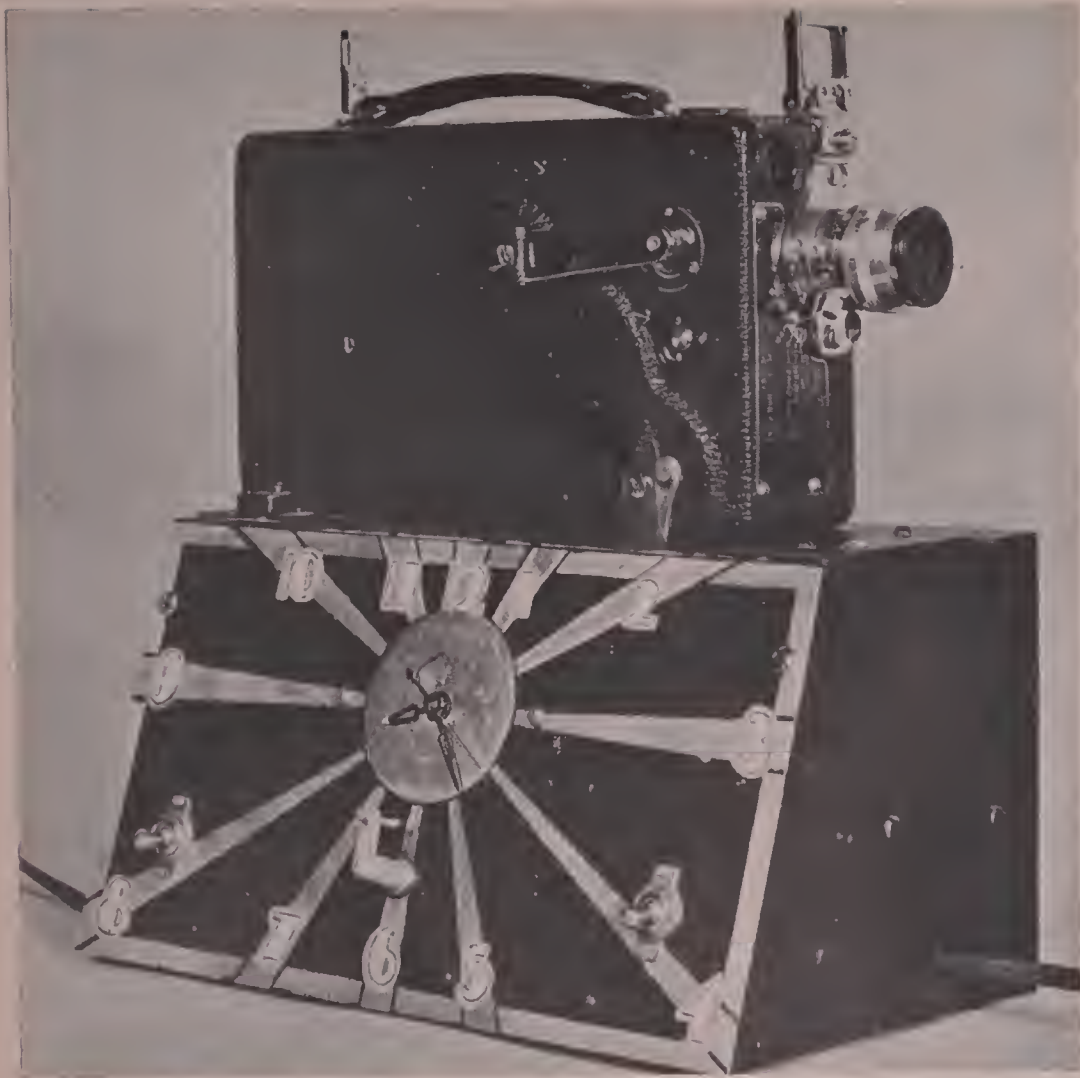
But this writer, as much as a buck private as a former Hollywood correspondent, would just once like the movie maker who put out those comedies about "army life" hear the yells and hisses and cynical laughter in the post theaters when Hollywood's version of life in Uncle Sam's army doesn't quite meet with the men's approval. You can't kid a soldier about army life. Why, he will ask, doesn't that character on the screen get a hair cut? Why, on this post he'd be on KP three days straight with hair like that. And how about that fellow's sergeant's



stripes? How'd he get 'em so fast when it takes us GI's months even to make Pfc? And how is it they get furloughs and passes so easily and their girls or someone else's are always around, and they always get to meet a pretty skirt so easily?

And why the devil is guard house always treated as a joke when the army authorities, charged with the job of making disciplined soldiers out of easy-going civilians, are always trying to impress us with the extreme seriousness of breaking army rules and regulations? A court-martial isn't funny—it's darn tragic, and might mean a lot more than merely a few days or weeks in the guard house. It might mean a dishonorable discharge, a ruined life, shame. There have been films in which every conceivable army regulation was broken; in which soldiers went AWOL; damaged government property; sang and danced and generally raised hell in their barracks—in other words, did not act like soldiers at all, but like a bunch of South Sea islanders who had never heard of discipline or army regulations.

(Continued on Page 406)



Left, the 16mm camera, with extended trigger, mounted on the lapse-time device, ready for action.

posure results. To make this quick action easier a two inch extension, resembling a trigger, was added to the original starting lever. This trigger extends down into the housing that contains the timing mechanism. The camera is secured to the housing with a tripod screw. On the panel of the housing is an inexpensive self-starting electric clock which governs the time-lapse between exposures. This is done by a simple brushing contact between the second hand and a contact point located at the figure six on the dial of the clock. Obviously, this timing arrangement is limited to action requiring one or more exposures per minute, the actual time-lapse being determined by the number of contact points around the dial.

When the second hand touches the contact point a small source of electricity supplied by two flashlight batteries closes a relay which allows 110 volts to actuate the solenoid. This relay circuit prevents the contact points on the dial of the clock from burning out.

The solenoid, when so charged, draws a lever past the long trigger fast enough to allow just one frame to be exposed. The spring motor in the camera is, of course, wound tight at the beginning of each experiment. As soon as the lever leaves its resting position it closes a micro-switch causing a No. 2 photoflood to illuminate the subject being photographed. The light remains on only for a second or two (till the lever returns) during which time the actual exposure takes place. (Consistent illumination for each frame is extremely important, however when outdoor subjects are being shot in good even light, there is no need for artificial illumination.) After the exposure is made a ratchet permits the lever to slide past the trigger, back to its normal position.

Beside the clock there are two switches on the panel. One is the master switch which turns on the entire mechanism including the clock. The other switch turns on the photoflood only, for lining up the subject, focusing and taking light readings. On the back of the housing a push button manually closes the armature of the relay so that test exposures may be made without waiting for the second hand of the clock to get around to the contact position. This is a time saver.

The lapse-time model shown in the photograph is capable of producing many interesting sequences, but it is strictly an experimental model. A great improvement would be a more versatile timing system entirely separate, leaving only the actuating mechanism (remotely controlled), connected to the camera.

Shooting a Typical Lapse-time Subject

A variety of intriguing subject matter is at hand for the lapse-time enthusiast, and most of these subjects are outside the forbidden realm of restrictions imposed by wartime regulations. To get off to a good start let's photograph the unfolding of a rose bud . . .

Lapse-Time for the Amateur

By COOPER JENKINS

LAPSE-TIME is one of those processes which has its definite place in industry but its counterpart is sheer enjoyment, novelty and entertainment, when placed in the hands of the amateur. It is inexpensive and fascinating.

As a serious amateur interested in movie photography, you probably have wondered many times about the miracles of lapse-time movies but you did nothing about it because you thought it was a realm for the rich guy. That's where you made your mistake.

Sure, there are several "store-bought" ways of photographing storm clouds gathering and rose buds opening, and you are right in thinking most of these gadgets are for the higher priced cameras which few of us can afford . . . but there are other ways of shooting lapse-time that are within our means.

What is Lapse-Time Photography?

Briefly, what lapse-time photography amounts to is this . . . The photographing of an action which requires a long time to complete, with a *time-lapse* between exposures. Then, when projected at normal speed the action will be stepped up so that it is completed in a matter of seconds on the screen. It is the *oppo-*

sie of slow motion.

The length of this time-interval between exposures is determined by (1) the length of time required for the action to be completed, and (2) the speed with which the action should take place when projected.

To accomplish this, a lapse-time device should provide a mechanical means of operating the camera in such a way as to make single-frame exposure, and a method of pre-setting the time-interval between exposures, such as one frame per second, one frame per minute, etc. . . . Another feature that is desirable but not entirely necessary is an electric switch in connection with a photoflood to provide a momentary illumination of the subject only during the time of the exposure. This feature is a life saver for photofloods as there is no need of the light burning during the interval between exposures.

An Experimental Model For Shooting Lapse-time

The camera used by the author in making his lapse-time experiments was an Eastman, Model K, which does not have the benefits of a "single-frame button." However, by quickly pressing and releasing the starting lever a single ex-



First thing to do is to set the camera and timing device on a firm tripod, table or bench and secure it rigidly. Line up the camera and focus on a "stand-in" of some kind, similar in size to the subject you will later set before the camera. The reason for the "stand-in" is that when a fresh bud is brought from a cold refrigerator into a warm room, it immediately begins to unfold, and if it is used to focus on in the warm light of a photoflood there is likely to be some action in that first minute or two that the camera will miss. Don't bring the bud in till you are ready to start shooting. The bud should be placed on a separate table or stand from the camera in order to limit its vibration to a minimum.

Now comes the pencil work. You have to establish the amount of time the rose bud will require to fully open, and then decide how long you want this action to take when you project it on the screen at the rate of sixteen, (or twenty-four) frames per second.

For example, say it takes a tight bud about ten hours to open. If you shoot one frame per minute for ten hours you will expose 600 frames, or fifteen feet of film, which at normal silent projection speed can be screened in about thirty-seven seconds. If you want the action faster shoot one frame every two minutes and see the same action in about eighteen seconds. A flexible timing device provides a great variety of possibilities.

Now that all calculations have been made and the time-interval determined, bring in the rose bud (in water, of course,) and place it in the exact position of the "stand-in," take the usual meter reading and turn on the switch for the mechanism to go to work. That is all you have to do till the flower has finished its performance.

Another subject inviting to the lapse-time photographer is the formation of storm clouds, and best among these are the thunderheads. With the naked eye

Upper left, "To make this action easier a two-inch extension, resembling a trigger, was added to the original starting lever." Upper right, interior of experimental lapse-time model showing relative position of solenoid, lever, trigger and clock. Right, Fig. 1 shows trigger, lever and solenoid armature in resting position between exposures. Micro-switch is in "off" position. Fig. 2 shows position of trigger and lever with solenoid armature at extreme end of its pull. Micro-switch is now "on" and exposure is being made. Fig. 3 shows armature and lever returning to normal resting position. Micro-switch is about to go "off". Note ratchet action at end of lever allowing lever to slide past trigger.

it is possible to observe the turbulent action taking place within the cloud but it is infinitely more impressive when the action has been stepped up to four times its normal speed. This action is much faster than plant growth and must be photographed with considerably less time-lapse between exposure. Most cloud formations are best shot at from one to four frames per second . . . and will produce amazing results on the screen.

Some of the simplest things produce unexpected but welcome results. The writer once photographed a burning cigarette that was supposedly placed on a living-room mantel and forgotten. This action took about eight minutes and the time-lapse between frames was three seconds. Shot in Kodachrome, it produced some unexpected results in that it showed the resin melting around the cigarette as it charred its way along the pine board.

An easy subject on which to test your equipment right in your own living room or work shop is an old fashion tallow candle. Secure the base of it into the neck of a bottle and light the candle allowing the tallow to drip down the sides of the candle and bottle till the candle is expired. When this film is projected it will show the candle rapidly becoming shorter as the melted tallow builds its shapeless formations. This natural action is interesting to observe in reality but when stepped up by the lapse-time camera it becomes extremely fascinating.

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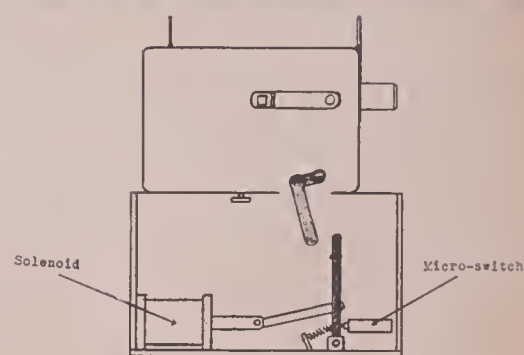


Fig. 1

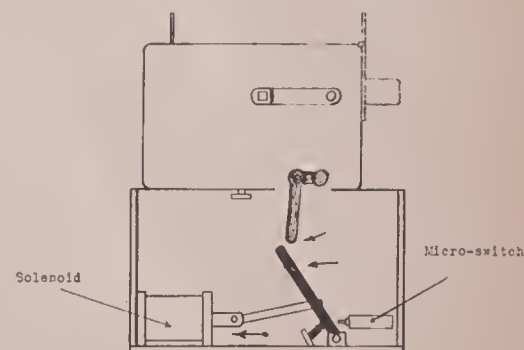


Fig. 2

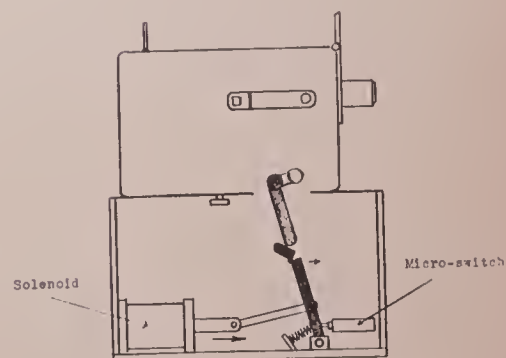


Fig. 3



At left is Early Cantrell, discovered by the author while doing an outstanding role at the Pasadena Playhouse. She has dark auburn hair, and will soon be given a screen test. Lance expects her to get a contract for he says he knows that any of Hollywood's Cinematographers will successfully transfer her ability, beauty and personal charm to the screen. Above is the author.

Cinematographers Responsible For Agents' Success

By LEON O. LANCE

MY business is finding new talent for the screen, and then presenting that talent to motion picture producers. I also represent players who are already recognized. I'm what Hollywood calls "an agent."

There are a lot of us agents in Hollywood, because it is practically impossible for a player to obtain a role or a contract with a motion picture company unless he or she has an agent to speak for him or her. A player can't very well walk into a producer's office and brag about himself; tell what a great actor he is. Likewise, a new player who has never faced a camera can't tell a producer what a great future he has, and that the producer is missing a great bet if he doesn't give him a screen test. So, that's why the agents are necessary.

And speaking of screen tests, that's

why I am writing this article for the CINEMATOGRAPHER. I, as a Hollywood agent, want to tell the world that Hollywood's top cameramen are really responsible for ninety per cent of the success of any Hollywood agent. In the hands of the cinematographers lies the success or failure of any agent in putting a new face on the screen, for it is these men who make the tests which generally decide whether or not the new player gets a contract or a role in a picture.

I don't believe that agents as a whole realize what they owe the cameramen. Most agents, after they have secured a term contract for a new discovery, go back to their offices with smiles of self-satisfaction on their faces and tell their friends, "Well, I put over a big deal today. I sold a brand new girl to

such and such a studio on a seven-year contract."

What the agent should do is look up the cameraman who photographed the test of his discovery and say, "Buddy, I can't tell you how much I appreciate the great work you did in testing my client. *Your* work got that young girl a seven-year contract, and I'll get ten per cent of her earnings during the life of that contract. But *you*, not I, are responsible for that contract, Buddy. Sure, I found the girl and had faith in her ability, but if you hadn't put her on the screen in the way you did she would be taking a train back to Podunk tomorrow."

I, in particular, am extremely grateful to the Hollywood cameramen, for they have meant a great deal to me inasmuch as I am constantly seeking new faces. In fact, I get more satisfaction out of bringing new personalities to the screen than I do out of just getting more jobs for established players. Consequently, I therefore lean more heavily on the art of the cinematographers than if I didn't bother to bring out new talent. Let me say here and now that the cameramen have never let me down. Whenever I had a new player whom I felt had ability and secured her a screen test, that test has always been beautiful.



Testing a newcomer who has never been in front of a camera before is a bit more difficult than photographing a player who is camera wise. The newcomer naturally is nervous, doesn't know just what she should do with her hands, how she should walk or turn her head. She has heard so much about screen technique that she is sure she is doing the wrong thing. So, if he wants to do a good job, the cameraman has to be doubly careful in lighting and other details. In other words, he must have the desire to make this new girl look her best. I find that cameramen are all anxious to see a newcomer make good, and they really *give out* to give the newcomer a chance. I have also seen cameramen take a new player aside and quietly talk to her until her nervousness disappeared.

After a player is signed to a contract the agent still depends upon the cameraman for her continued success. A good screen test will get a new player a job, but it is still the cameraman who has a great deal to do with her keeping that job, for the girl must continue to look glamorous in all her pictures. It is the cameraman who attends to that while the agent smiles and collects his commissions and forgets all about the man whose art means so much to the player's and the agent's success.

Many have been the women who can thank the cameramen for their glamour. There are many feminine stars who in real life do not look glamorous, but on the screen they are simply gorgeous,

due to the ability of a cameraman to devise the lighting that will hide their defects and bring out the charm of the actress. That is why some actresses insist on having the same cameraman photograph them in every picture in which they appear. Age creeps up on actresses just the same as on women in any other walk of life, but Hollywood's cameramen have a way of keeping the stars looking young. And don't think this doesn't mean something to the agents. If an agent has a star getting \$5000 a week that means \$500 a week income for that agent. Shouldn't he be grateful to a cameraman who by his lighting skill can prolong the screen life of the client by many years? Why

a double chin begins to be visible on a leading man, and the cameraman can continue to wipe it out by his lighting, shouldn't that agent feel that his success lies in the hands of the cameraman?

Only recently a former feminine star came back to films after many years ab-

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Upper left is Laurie Hayden, another Lance discovery. She, too, will soon face the cameras for a screen test, and Lance says he has faith in both her and the cameramen, so expects her to get a contract. Upper right is red-headed Peggy O'Neill, under contract to Charles R. Rogers. Lance discovered her, but Rogers didn't bother with a test for he said he has enough faith in Hollywood's Cinematographers to know they'll keep her glamorous. Lower right is Jeanne Newport, also under contract to Rogers. She is said to have a sensational singing voice, but not until she had been screen tested was she signed. She is grateful to the cameraman who photographed her.

Invaders Learn to Surrender

By DR. DIMITRI MARIANOFF

THE enormous power of the American film industry has been almost entirely unhampered by this war. Entertainment pictures of all kinds, big propaganda features, training and documentary films are a part of the war effort, a part of our constructive policy down the entire line of our national culture. It is remarkable how at this time of war, which takes all our attention and strength in the struggle against the diabolic aims of the enemy to destroy human value, we hold safe our spiritual Front for farther development of our science, technique and art.

Although the European countries have always worked toward the development and growth of their own film productions, still they have shown enthusiasm and respect for ours—the pictures from Hollywood. True, we also have applauded many European motion pictures, and already after War I we used to invite various great actors and directors of Europe to our film capital.

An amazing thing happened after the war. America, master of a great technical event was praising European pictures; good natured Americans were sincere in their nearly childish enthusiasm for things that appealed to them. European producers and directors quickly responded to this American sentiment, and they, as many people believed, "invaded" American film production. But only the near-sighted were those who took that for granted. The fact is that in the Twenties, German, Russian, Swedish, Austrian and other producers took the lead and established themselves as outstanding and successful *American* filmmakers. Yes, American—not European. They have lost their European attitude and have "surrendered" to the American way of life.

We witnessed the greatness of American spirit that generously gave place to those who wanted to create on our soil. Many of them have been with us now for years. They have adopted our attitude toward life, creativeness, ideals and traditions, and we have gladly "naturalized" them. If their work were an example of foreign culture only, they would remain strange to us and isolated, but they have lost their foreign coloring and became members of our American family.

German pictures made up the majority of the European films that came to America after the World War. Germany tried to impress all the countries with her "high" culture, to break the cold-shoulder-feeling of their former enemies, and sent her best films to us. Seeing the pictures of Lubitsch, Murnau, Dupont, Von Stroheim and others, we

were enthusiastic about their great artistic and technical effect. Those pictures made the eyes of our American directors turn toward reality, reminded them of what glorious a medium they had in their hands, and what they could do with it.

Then came fine French pictures such as "J'accuse" and "Passion of Joan of Arc." Russia started sending her profound and brilliant productions. From 1919 to 1929 there was the gigantic boom in American life and American motion pictures reflected it. But reasonable voices began to protest to the contents of our pictures. Some of them succeeded and influenced a new type of film, but only in 1929 with stock crash and depression, when millions of people became victims of closed banks came a new era. People awakened to their senses.

After an era of fundamental influence by European productions, and admiration for Continental tendencies, the American industry steadily began to search for its new way back to common American sense.

Foreign stimuli, such as underlining of lust, greed for luxury, adoration of gangster heroism began to vanish from the American screen. This nation's sound thinking reared up against very obvious germs of poisonous intoxication—a most natural result of its overfeeding with un-American doctrines.

Now what about European films today? They have lost their effect upon Hollywood movie makers, because of the great difference in our attitude, methods and principles.

Technically, we, like the Russians, understand that cinema must be absolutely independent of the stage; while European films to this day still are influenced by the stage. The famous actors and directors of the European theatre are also creators of films. They seem to think that cinema must borrow from the stage its basic principle of acting. Here, we know from experience that sometimes the best stage actors are helpless before the camera, and most successful playwrights are of no use in writing a film story. We make so many pictures that in search for a new film theme, we do take popular plays and novels but we take their theme and melt and mould it into the plot of a screenplay.

It is generally a mistake to compare theatre with film or to try to expose them as rivals. The evidence that the theatre received a mortal blow with the maturing of the cinema, is not a sufficient reason for the stage to die. These two arts are of a divergent nature; cinema as a collective art includes



the actor but gives him a new form, a new meaning of expression. Both arts have their right of existence without rivalry. The film actor must be truthful, and natural before the lens of the camera, whose angles, distance, are steps for gradual building up of a situation. For the actor of the theatre the different angles of the camera are only technical moments.

The sudden revolution of sound film production, its amazing effect upon millions of movie-goers, manifested itself in a way definitely advantageous to cinema art. Theatre again tried to influence the screen. The first prevailing opinion was that after the birth of film sound the stage would encroach upon movie art like a polyp and throttle its right of self-existence. But in Hollywood, sound film proved to be a phoenix in art. It demanded new creators, and—most astounding—it created them by itself. American movie production entered a very definite independent artistic road.

European pictures that are made on a high artistic standard, even too much so, often bring naked realism to the screen; sexual feelings are demonstrated to the extreme. In their mysteries and dramas, evil wins without being punished. These things are strange to us. Though we have no specific rules about how much we can or cannot show or express, there exists an unspoken understanding between our cinema industry and our audience. We also have an ideological difference in our conception of themes for the screen. Our philosophy is to destroy evil, and see good triumph.

The most outstanding, strikingly evident difference between European and American cinema art is the way the screen actor manifests his performance. In Europe he plays his roles with all

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MATCHING LENS DIAPHRAGM SETTINGS

By CHARLES H. COLES, 2nd Lieut., A. C.

EXPOSURE is defined as the product of the intensity and time that light operates upon a sensitive surface. The intensity of light that strikes a film is affected strongly by the lens through which all of it must pass. The combination of the diaphragm, focal length, and transparency of the lens controls the total amount of light that strikes the film.

The diaphragm is usually quite accurately set at the factory; so, too, is the focal length which is built into the lens during manufacture.

The only remaining unknown is the transparency, or, as it is more accurately known, the transmission of the lens. This transmission is dependent upon the number of lens elements contained in an objective and the degree of discoloration of the cement and lens surfaces. This discoloration may increase with age, so it is a factor that varies gradually with time. A lens that has its elements treated with the anti-reflection coating may have a lens transmission as high as 95%. An untreated lens may drop as low as 35% for an old, multi-element, discolored objective. This represents a range of over one whole stop in the diaphragm setting.

Errors in marking diaphragm indexes are very infrequent but another possible source of trouble. All in all, a method of testing the lens transmissions is a valuable one, particularly where many lenses are being used in one organization and the results must be uniform.

Theory

If a lens is directed at a uniformly illuminated screen whose area is greater than the angular field covered by the

objective, the light will be fairly evenly distributed over the film aperture. The intensity of this light at the film plane will be controlled by the intensity of the source, the diaphragm, and the lens transmission. The light source, once a convenient one is selected, can be kept sufficiently constant for our purposes. The lens transmission remains constant over a considerable period of time, leaving the diaphragm as the only variable factor.

Measuring Apparatus

To aid in standardizing the diaphragm markings of a group of lenses, a lens transmission measuring device was constructed as shown in the photographs. It consists of a tube mounted on a pedestal. Into this tube, standard Mitchell lenses fit snugly, held in place with a set screw. At the focal distance behind the lens, an aperture is placed to restrict the field of the lens to a given solid angle.

In the first model of this device, the aperture was rectangular, the size of a motion picture frame. This shape proved impractical because of the falling off of light near the edges of the picture by the vignetting action of the lens under test. A circular aperture $\frac{3}{4}$ inch in diameter was substituted for the rectangular opening to produce a more uniform response.

For use with wide-angle lenses where the falling off of light at the edges is more severe, a smaller diaphragm, $\frac{3}{8}$ inch diameter, was made. Being one-half the diameter of the other aperture, it is one-quarter of the area. Readings made with this diaphragm in place must be multi-



Upper left, the author using tester. Top right, the tester in operation. Above, the lens, tester and meter.

plied by 4 to make them comparable with observations made with the $\frac{3}{4}$ inch diaphragm.

The other end of the horizontal tube has a clip to hold a Weston Master Exposure Meter with the low reading door open. Any exposure meter may be used with equally effective results. The only reason for using the Weston was that it was on hand at the time of design.

The light source is a Dinky Inky equipped with a piece of flashed opal glass over the front of the light. The opal glass should be placed fairly close to the front of the lens under test—about two or three inches away.

Balancing Lenses

The first requirement of any measuring system is a standard to which unknown units may be compared. In the case of lenses, a relatively new 2 inch objective should be selected that hasn't had a chance to change with age as yet.

The lens is placed in the tube, and the aperture set to the *next* to the largest diameter, say $f/2.8$. Make this the standard aperture. Now adjust the Dinky Inky focusing lever until the Weston Meter reads 25. Now set the diaphragm of the lens to its lowest figure and read the meter. The readings will be directly proportional to the light passing through the lens. Each diaphragm stop down

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The series of illustrations on this and opposite page are taken from film shot by the author starting in 1933 and up to now. Above is from a 1942 film. Left is from one of his films of this year.

DIARY OF A 10-YEAR MOVIE MAKER

By JAMES R. OSWOLD

DEAR DIARY: This is my tenth anniversary . . . tenth anniversary as a movie maker, I mean. Many things, both encouraging and discouraging, have happened during all this time, but I still keep grinding away. What on earth ever possessed me to take up movie making in the first place . . . what's there about this business that continually holds my attention? Let's turn back the pages of time and SEE what it's all about . . . shall we?

1933

I can't resist any longer! That movie camera advertised in the newspaper is SUCH a bargain, even if it isn't a very elaborate outfit. Besides, I've always dreamed of taking my own movies and now is my chance. I'll try my luck!

Anxious to see just what this camera will do, so my first film will be sort of a test reel to acquaint myself with its operation. (Lucky thing the Century of Progress Exposition is going on here in Chicago . . . will give me a wonderful opportunity to take some historic souvenir shots later on.) Can't wait to see that first reel now, though.

What's this? Back from the processing laboratory already? Think I'll take a peek at those opening scenes before I set up the projector . . . the suspense is terrible. Hmmm, not bad; not bad at

all, for a beginner! Better SHOW the film now before the reel is all unwound.

Exposures about 75 per cent perfect, thanks to careful following of the guide in my manual. Must remember, though, to use a tripod for ALL scenes and to avoid panning. Think I'm going to like this game!

1934

The exposure problem is pretty well licked now, and the pictures are rock-steady on the screen. Any motion is furnished by the "actors" and not by the camera. I must try, however, to build up some kind of a story telling sequence in the future . . . the pictures are MUCH more enjoyable that way. More frequent use of closeups is advisable too, because everyone likes to see things at close range.

My 400-foot vacation film is one of the most painstaking things I've yet attempted. The importance of changing camera angles often is brought out here. All in all, it's a good reel. With a little editing here and there and perhaps a title or two, it can be made into a really nice movie. At any rate I'm steadily improving. It takes a little experience to learn just how long each scene should appear on the screen, though. Filters certainly would have helped those scenes with the blank sky!

1935

The Eastman Kodak Company has just introduced a new color film to the 16mm. field which they call Kodachrome. It's supposed to be really sensational . . . no special filters or other attachments are required for either the camera or projector. I want to be among the first to try a roll, but it sure will put an awful hole in the pocketbook . . . costs twice as much as the black and white film I'm accustomed to using!

It seems there's a new lighting and exposure problem encountered here. Only flat lighting with the sun directly behind the camera is recommended because, unlike with black and white film, contrast is furnished by COLOR rather than by lights and shadows. A somewhat larger lens stop is necessary, too.

I guess I under-exposed a good part of this reel. But the naturalness of the colors . . . it's remarkable! A black and white film looks sick by comparison, so without a doubt there's a whole new broad horizon beginning to open up for the movie maker, with possibilities unlimited and realness undreamed of.

1936

By this time my friends and relatives are commencing to take an interest in my movies. They see something rather fascinating about this hobby of mine, especially now that I've included them in some of my scenes. They look forward to the return of the films from the processing station, almost as eagerly as I do.

Filming is going on as usual, the movie camera always being an essential part of my vacation luggage, of course. Both the camera and myself get our biggest work-out on our trip to the North Woods.

Projection, too, is becoming quite an art with me. I've learned the importance of smooth flowing presentation, especially when guests are invited . . . my films are always rewound, ready to go . . . the best reels are saved, 'till the last . . . and threading is done quickly and accurately.

Older reels are more valuable than ever, since most scenes cannot be duplicated at any cost. It certainly is great to be able to bring back those fond memories.



1941



1940



1939

1937

My latest Kodachrome film is surely an improvement over my first attempt at color photography. That's because I've adhered more closely to the proper lighting technique and learned the fallacy of side lighting. Then, too, the exposure angle has been fairly well mastered now that I have become more accustomed to the latitude of the film. There's really no trick at all to this work, if only good judgment is exercised before shooting . . . if only it is remembered that COLOR is making the picture and NOT shadows. Of course this doesn't mean either that every conceivable color, no matter how gaudy, should be crammed into the scene just to take advantage of the fact that it IS color film . . . that's defeating the whole purpose of the thing. True, that Kodachrome is capable of recording all those colors in the most lifelike manner imaginable, but certainly good, harmonious blending of the hues should be maintained.

So much for my accomplishments with this increasingly more popular color film. The day will soon come when Kodachrome will out-sell black and white, and why not?

1938

A documentary record of a trip to Canada is the high-light of this year's cinematographic endeavors. This film, in the form of a travelogue, offers diversion since the territory covered is all new and unfamiliar to me. For that reason, in a movie of this sort, there cannot be much advance planning, because of the impossibility of knowing ahead of time just what conditions will

be encountered. All shooting is rather on the spur-of-the-moment and the most has to be made of situations as they arise.

One thing is always advisable, however, on a journey of this kind. A few intermittent road scenes and other interesting side glances taken en route are wonderful for bridging the gap between towns and main points of interest visited. It is preferable in such shots to include views of the car driving through the camera field in order to furnish a little action to the scene, as well as to add a personal touch by making future audiences imagine they are also making the trip.

Incidentally, pictures of road signs showing route numbers and approaching town limits afford a very excellent, clever method of titling on location.

1939

Nothing very out of the ordinary happening in the way of movie making this year . . . just routine filming. I did start, though, what is to be a portion of a 400-foot Kodachrome "epic" depicting the elegance of nature's handiwork throughout the four seasons. Naturally, this will take at least a full year to complete . . . probably longer if any re-takes are necessary. Don't know if it will ever get finished but it's a good idea, and in any event each portion is complete in itself.

A new projector has been added to my paraphernalia which cut a deep hole in my budget. There won't be many new "productions" under way for a while, I'm afraid, for obvious reasons.

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1938



1937



1936



1933



1934



1935

Electronics in Photometry

By G. B. HARRISON, Ph. D., F.R.P.S.

THE subject I have been asked to deal with may be described as the impact of electronics in photometry. It is inevitable, therefore, that most if not all the applications involve a photo-cell of one kind or another and any attendant electronic devices that are necessary.

The human eye is a very remarkable instrument, but it was not developed for making photometric measurements and it is not, therefore, surprising that in certain respects the photo-cell has advantages. Most of its advantages are, however, of convenience only and its only real property which makes it capable of performing operations of which the human eye is quite incapable is that its sensitivity may extend into regions in which the eye is totally insensitive, e.g., infra-red and ultra violet. Most photometric measurements are made by comparing brightness, and the photo-cell in certain circumstances has an apparent advantage in that it is capable of making absolute measurements in the absence of a direct comparison.

In dealing with this subject in such a short time, it is quite impossible to cover the whole field as I have had to be content with a few selected applications which seemed to me to be of most interest.

Densitometry

One of the earliest applications of electronics, apart from sound, was the use of the photo-sensitive element for measuring density. The early visual instruments were tedious and slow in use and it was natural that a more objective method should be sought. The first photo-sensitive element to be used was the selenium cell which changed its resistance on illumination, but these were very soon replaced by the photo-emissive cell. The photo-emissive cell had many advantages in spite of its requiring a vacuum tube D.C. amplifier, and many densitometers differing mainly in detail have been constructed, some of which have been made available commercially. The appearance of the barrier-layer type of photo-cell has created a flood of new densitometers employing this new sensitive element which has both advantages and disadvantages over the photo-emissive cell. I do not believe, however, that the barrier-layer cell will entirely replace the photo-emissive type; its main advantages lie in simplicity and low cost.

Nearly all densitometers have been made to operate by a null method, the density to be read being compared with a known density, the cell being used to detect equality. It follows that the operator besides inserting the density has to perform the operation of adjusting the

comparison density until the same value is inserted in its light beam. This takes time and to a smaller extent skill.

One of the reasons for this method of working is that density is a logarithmic function of the fraction of the incident light transmitted and before a uniform direct reading density scale can be obtained it is necessary to introduce a logarithmic relation. This has been done in a variety of ways none of which has been entirely satisfactory until recently. One of the most important developments in this field is the means of producing logarithmic amplifiers giving a straight line relationship between log. input and output over a considerable range.

At the same time means are available today of producing main operated D.C. amplifiers of much greater stability than was possible some years ago. Several densitometers employing this principle have been described in the literature, their principal feature being that they are direct reading. This principle considerably simplifies recording densitometers and I see in the near future small, compact instruments into which you feed a sensitometric strip, exposed to a continuously varying exposure instead of a stepped exposure, and accept a characteristic curve in a few seconds, not only plotted, but completely drawn in ink on printed graph paper.

Screen Brightness

More attention is being paid today to screen brightness, no doubt due to the incidence of the colour film. Instruments for measuring screen brightness are usually based on the barrier-layer photo-cell. Other types of photo-cell are primarily suitable for matching and their use would require the inclusion of a standard comparison source in the equipment.

The accuracy required in screen brightness measurement is not high, and whilst average brightness only is required the present systems are adequate. If brightness readings are required in different regions of the screen, difficulties of sensitivity appear if a robust measuring instrument is to be used. This difficulty may resolve itself in the future by an increase in cell sensitivity and perhaps an improvement in screen brightness, thus raising the limiting brightness it is required to measure.

Measurement of the screen illumination is, of course, easier but to obtain the brightness the reflection factor must also be determined and this presents difficulties of its own.

Exposure Meters

The problem of estimating the camera exposure and of estimating the printing exposure required for a given negative

are very similar. This is only to be expected because the negative is a record of the subject with tones reversed. The use of the barrier-layer cell for camera exposures is well known and any defect in the results is due to failure of the method of use rather than the instrument.

To estimate exposures accurately it is necessary to know the maximum and minimum brightness in the subject so that the brightness range can be located as desired in the negative characteristic. Exposure meters which integrate the light reflected from the subject or transmitted by the negative, or give the value of the light flux falling on the subject give readings which are proportional neither to the maximum nor minimum brightness. The fact that the readings are of any use at all is due to the relatively small difference in subjects and the latitude in exposure of the modern emulsion. If anyone should think it worth while, an exposure meter could be made which scans the scene and gives an indication of the maximum and minimum brightness values.

The direct control of aperture by photo-electric means has been successfully achieved, but all systems use the integration method. This is inevitable in a simple instrument and the same remarks apply as are made on the exposure meter. The difference between the meter to be read and the direct meter is one of mechanics only.

Film Examination

With the introduction of panchromatic film and its rapid increase in speed the problem of handling the film in the dark room became more difficult. It was no longer possible to use a safelight of such a colour that its light affected the eye but did not affect the film even with prolonged exposure. It was necessary to use a small amount of light of the colour to which the eye is most sensitive, i.e., green, but panchromatic films today becomes so fast that the amount of light that can be used with safety is so small that it is barely enough to see by. In ordinary handling of such film it is quite practicable to operate in total darkness, but there is one process in the manufacture of film that cannot be so easily accomplished. This operation is the examination of the film for faults.

It is obvious from the enormous footage of film used and the comparatively rare appearance of a fault that faults are not frequent, but faults are costly and it is important that they should be "examined out." The speed of the fastest panchromatic film today is such that visual examination under conditions of illumination that just do not produce perceptible fog, a fault has to be approximately equivalent to a black circle several mms. in diameter before it can be detected with certainty. The situation is of course likely to get worse rather than better, but the difficulty has been solved by the use of electronics.

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The
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EASTMAN FILMS

A.S.C. on Parade

As this issue of the Cinematographer goes to press, ASC members are photographing the following pictures:

Columbia Studios

"None Shall Escape," Lee Garmes.
"Curly," Franz Planer.
"Ten Per Cent Woman," Joseph Walker.
"Swing Out the Blues," Arthur Martinelli.

MGM Studios

"The Canterville Ghost," Robert Planck.
"Gaslight," Joe Ruttenburg.
"Mr. Co-Ed," Harry Stradling.
"Kismet," Charles Rosher.
"Two Sisters and a Sailor," Robert Surtees.
"Dragon Seed," Sidney Wagner.

Paramount Studios

"Frenchmans' Creek," Charles Lang.
"Going My Way," Lionel Lindon.
"Our Hearts Were Young and Gay," Theodor Sparkuhl.
"The Man in Half Moon Street," Henry Sharp.
"Rainbow Island," Karl Struss.

RKO Studios

"Tender Comrade," Russell Metty.
"The Falcon in Texas," Harry Wild.

Republic Studios

"Casanova in Burlesque," Reggie Lanning.

20th Century-Fox Studios

"Home in Indiana," Edward Cronjager.
"The Sullivans," Lucien Andriot.
"The Eve of St. Mark," Joseph La Shelle.
"Four Jills in a Jeep," Peverell Marley.
"The Purple Heart," Arthur Miller.

United Artists

"Since You Went Away," George Barnes.
"Knickerbocker Holiday," Phil Tan-nura.
"Bridge of San Luis Rey," John W. Boyle.
"Timber," Russell Harlan.
"It Happened Tomorrow," Archie Stout.

Universal Studios

"Gung Ho!" Milton Krasner.
"When Ladies Fly," Hal Mohr.
"The Imposter," Paul Ivano.
"Three Cheers for the Boys," David Abel.
"Phantom Lady," Elwood Brendell.
"Gypsy Wildcat," George Robinson.
"Her Primitive Man," Charles Van Enger.
"Patrick the Great," Frank Redman.

Warner Bros. Studios

"Passage to Marseille," James Wong Howe.
"Uncertain Glory," Sid Hickox.
"Outward Bound," Carl Guthrie.
"Mr. Skeffington," Ernest Miller.
"Animal Kingdom," Bert Glennon.

international scene. Films such as "The Nazis Strike," and "Divide and Conquer," both of the "Why We Fight" series, are excellent sources of information to the young trainee who is getting ready for the final battle and who wants to know the answers to some questions in his mind regarding the war and its causes. Prof. Max Lerner, in an editorial in the newspaper PM, said recently:

"Our soldiers . . . are moved by two primary drives. One is not to let down the folks at home, to do them proud. The second is their instinct of workmanship. They have a job to get over with, and they want to do it quickly and well.

"But they will need more before they are wholly through, these youngsters. The soldiers in a great army must have a belief in themselves and their world. They need a knowledge of what enemies threaten their world, and above all, they must understand what the enemy principle is. They need a belief in the superiority of their world to others, a confidence about its chances for growth and about their own opportunities in it."

The army today realizes fully that an informed soldier—a man who knows how to use the weapons issued to him, as well as why they were issued to him—fights better than a soldier who simply goes into battle because someone ordered him to go.

The army of today, the modern, well-disciplined, enlightened army of the United States, is getting all the benefits of Hollywood's great experience in the making of motion pictures in the war department's training films. The soldiers can well do without cheap little comedies about Hitler, Hirohito and Mussolini being captured in a mystical land by shipwrecked American sailors with the help of native magicians. The war is much too serious, much too deadly, for these things, and the men who are directing the armies that are firing the bullets and grenades at our comrades at the front are too vicious and brutal to be used as leading characters in low-budget comedies. Their antics may have once looked funny to us when we saw them speak in the newsreels, but we've grown up since then.

Why not take a tip from the army's training films? The enemy who is killing our men at the front and the soldiers of our Allies isn't a comical figure any more. He is cunning, and brutal, and clever. His Lives and Loves are not important. It is the Lives and Loves of the men he kills that counts.

Series Pix Continue

AMERICA'S 22 months of war have changed Hollywood in all but one respect: series pictures. Unchanged in number and content, the group films continue to be made, and basically don't flag in appeal. Here and there a few of the interlockers have fallen by the wayside, after passing their peak. But others have taken their place as studios find characters with a fresh pull.

Films Soldiers Want

(Continued from Page 395)

Knowing the average Hollywood product and what results Hollywood, with all its technical skill and knowledge, could so easily achieve with a little bit of serious thinking. I do not believe that these mistakes are unavoidable. Even a green rookie, who has been in the army less than a month, could pick out a dozen obvious deletions, mistakes or faults in practically every Hollywood portrayal of army life.

Those soldiers who have read "See Here, Private Hargrove," that excellent and amusing piece of G.I. prose about the experiences of one of us, are looking forward with a great deal of anticipation to MGM's film of Hargrove's book. They are hoping that for once they can look at the screen and see a G.I. haircut where there should be one, and army life, in general, treated as they are expected to treat it—with a sense of humor, yes, but with a great deal of attention and discipline. What is more, they do not want army life portrayed correctly for themselves alone. They want their home folks to be able to recognize them in these pictures, and

realize how hard a job they have. They do not want their "best girls" to look at an army comedy and then write to their real soldier-sweethearts, "Bill, the army really isn't tough at all—Why, I saw a picture last night and . . ."

Remember RKO's "Private Smith, USA," of the "This Is America," series? Or "Stage Door Canteen." They had what it takes to show the home folks what it's all about.

Of course, there is another kind of army "entertainment." These films, however, are not shown the soldier for relaxation and amusement. They are deadly serious, these pictures, and they serve as part of the soldier's training. These information films are perhaps what some of our senators would label as "propaganda."

"Propaganda they are, yes, but propaganda for that very rare commodity known as truth. They are produced by the war department with the help of such expert Hollywood directors as Lt. Col. Frank Capra and Lt. Col. Anatole Litvak. The "Why We Fight" series of seven information films about our enemy, the first of which was shown in civilian theaters all over the country under the title, "Prelude to War," is a favorite topic of discussion among soldiers who are wide awake to the problems of the

"PROFESSIONAL JUNIOR"* TRIPOD

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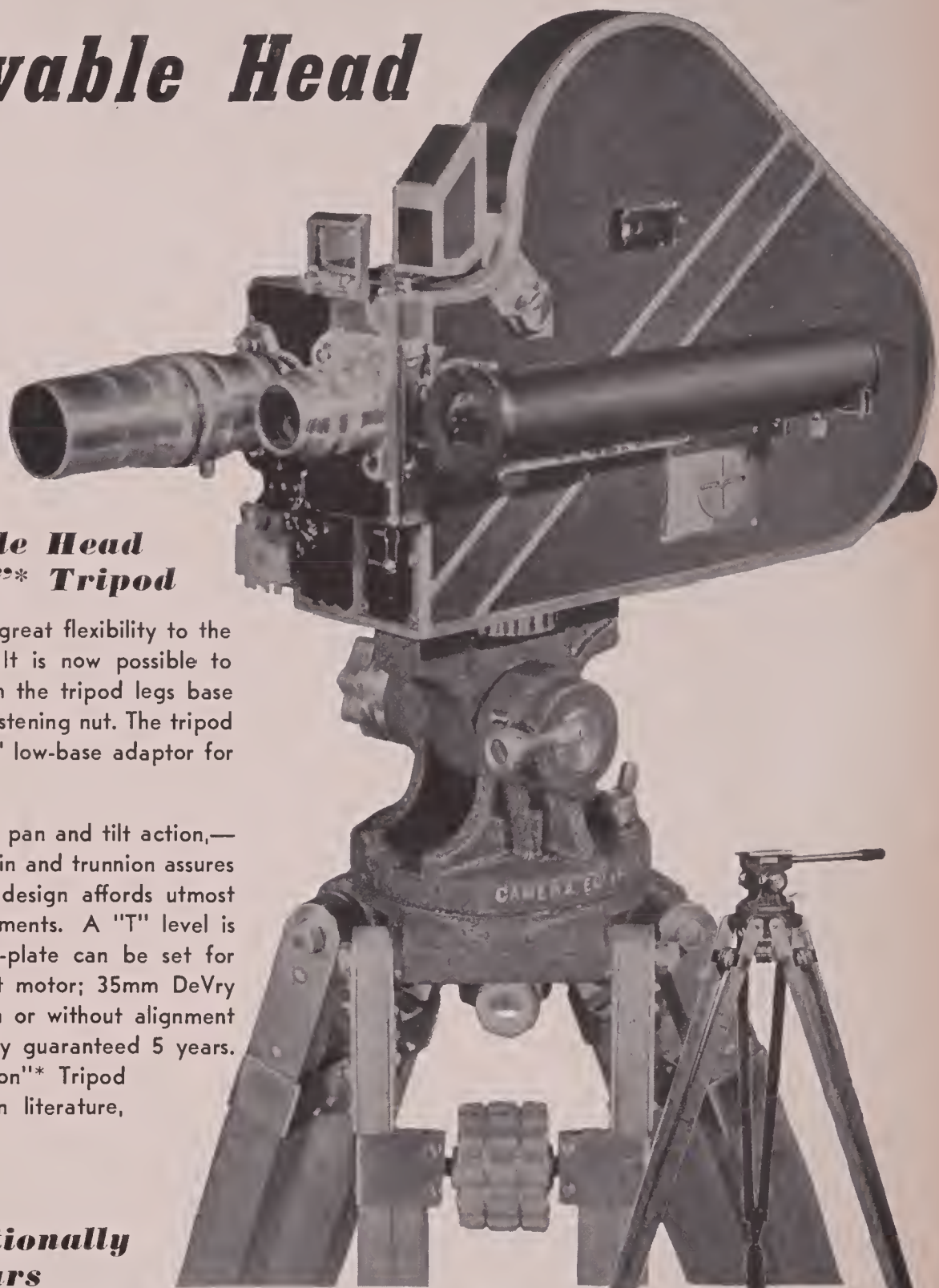
The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this superfine tripod. The top-plate can be set for 16mm E.K. Cine Special, with or without motor; 35mm DeVry and B & H Eyemo (with motor), and with or without alignment gauge. The tripod head is unconditionally guaranteed 5 years. More data about the "Professional Junior"* Tripod With Re-movable Head is contained in literature, sent upon request.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading Newsreel companies and 16 mm and 33 mm motion picture producers.

* Patent No. 2318910

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Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure camera-men that their equipment remains in correct position and will not slip on or mar any type of surface. Further particulars on request.

Left—B. & H. Eyemo mounted upon the "Professional Junior"* Tripod.



Here We Go!



New Television Patents May Broaden Screen

PERFECTION of new television projection apparatus which will make large screen television for motion picture theatres, homes and churches, both in black and white and natural color, available commercially soon after hostilities cease, was announced yesterday by Arthur Levy, president of Scophony Corporation of America. Latest television developments are incorporated in two U. S. patents, issued in Washington, covering the Skiatron system, an expansion of Scophony's basic methods. Scophony is associated with Television Productions, Inc., a subsidiary of Paramount Pictures, and General Precision Equipment Corp., which is associated with Twentieth-Fox and Time magazine.

Levy described the new system as having characteristic features in common with cinematography by which, for the first time, it will be possible to project a large screen television picture up to full-size theatre screen with brilliance equal to motion picture standards. The new inventions, the work of Dr. A. H. Rosenthal, director of research and development, will answer the need for high definition television pictures in any desired size in black and white and color, Levy said. Scophony's basic large screen methods Supersonic and Skiatron, hold vast significance for the motion picture and radio industries and will undoubtedly influence the future of television, he declared. The system is similar to motion picture projection technique and a theatre projectionist can learn to operate the Scophony projector in a few hours. The home set is said to be no more difficult to operate than a radio receiver.

Negro Newsreel Seen By 4,000,000

ESTIMATING a weekly attendance of four millions, E. M. Glucksman, producer of the All-American Newsreel, said yesterday that an OWI survey reveals that 85 percent of the negroes in five large cities get most of their news on negro affairs from the newsreel. Four million weekly attendance, he said, is larger than the combined circulation of the nation's 242 negro newspapers.

The All-American reel, a year old this week, is now seen regularly in 365 of the 451 civilian negro theatres, he said. Many, if not most, of these theatres use one or more of other reels also. The negro reel appears once weekly, and is distributed by AMPS to 70 military camps in this country, some of them with three and four theatres to a camp, and is shown also in Africa. About ten percent of the footage for the first year was directly on military subjects—either actual combat or training—with much of the rest of the footage concerning important home-front topics such as bond sales, collection campaigns and others.

TWO ALL-TIME HIGHS

WITH millions of feet required by our Armed Forces for training and other military purposes, the total production of Eastman motion picture films has pushed into new high ground. And the all-around quality of this huge output has never been excelled. Eastman Kodak Company, Rochester, N. Y.

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EASTMAN FILMS



Improving Amateur Projection Technique

By F. C. MOULTRIE

WITH wartime restrictions affecting the supply of raw film stock, it may be that many amateurs will feel disposed to seek means of "keeping their hands in" in film activities which do not require the making of new films. One of these activities could consist of more frequent showings of films we have made in times past, and this would seem to be an appropriate occasion to brush up on our projection technique and consider the factors involved, so that when peacetime again brings us an eagerly-awaited abundance of supplies we may have found this "breathing spell" of actual benefit, which will be reflected in our future movies.

It will readily be admitted that the greater percentage of us carry out our film showings in a very haphazard manner, and while we do not possess those conveniences which enable us to duplicate the ideal conditions obtained in a theater, most of us could, nevertheless, far more nearly approach those conditions than we do.

There are three prime considerations. (a) *What* is shown. (b) The *conditions* under which the showing is made. (c) The *manner* in which it is carried out. Of course, the actual preparation of the film itself is of utmost importance and

requires volumes all to itself, so that only a word may be said here to remind ourselves that we should not exhibit films to our friends till they have been carefully edited, cut, titled, etc., all splices carefully made, damaged portions removed, brittleness and shrinkage guarded against by suitable humidification and opaque or "end" trailers placed at the finishing ends. Lastly, films must be kept clean.

Perhaps a good way in which to approach the matter and endeavor to effect improvements would be to ask ourselves, "What have I usually experienced from *other* movie makers, and what have I usually offered to my friends in the shape of movie showings that I would consider much in need of improvement?"

Excluding the fortunate minority who possess properly fitted out recreation room theaters, most of us have given a show somewhat along the following lines. We have trotted out our projection apparatus among a group of friends variously "draped" about a room which has grown stuffy with cigarette smoke, etc. We plant our screen at one end and mount our projector at the other—very likely upon a none-too-secure foundation, which permits the machine to sway

or vibrate. The enlarged frame on the screen will suffer magnification of these motions and add to our guests' discomfort. Having mounted the projector in this fashion, we begin experimenting while our guests are present in the room. When we announce that all is ready, they group around on anything they can find, in none-too-comfortable positions, in which, perhaps, neither they nor you have given any thought to "head room." Then we call for "lights out"—since we have not provided a ready means of snapping lights off and on from our vantage point at the projector. Thereupon someone rises, snaps off the room lights, then, with our film already started, gropes his way back to his seat, stumbling over legs and feet and getting into the projection beam en route.

He is "on the beam" all right—but the wrong beam! Of course, we have also neglected to first prepare our film, or the projector, or to focus on to the screen ahead of time, so that adjustments of focus, framing, etc., are finally made only after the main title has gone on its way to oblivion. The series of stoppages occasioned by lost loops, breaks, and so forth, which have sadly come to be an expected feature of many amateur shows, then follows. Frame lines keep appearing at top or bottom edges of the picture. This may be caused by film shrinkage—in which case the fault may be our own—unless different makes of film have been spliced together. Also, film taken in different makes or models of cameras and spliced together will often show similar characteristics in respect to frame line troubles and this is another factor for which we can assume no responsibility. But it is attributable to us if we are not "on our toes" to adjust the framer of the projector immediately such frame lines appear.

Another very prevalent fault of our shows may be that of nearly blinding our guests at the end of each reel by running right through on to a glaring blank screen. Now the avoidance of the foregoing and a great many other annoyances can easily be assured by a little forethought and preparation, requiring no expensive equipment. We mentioned earlier in this article **THREE** prime factors, the first of which was concerned with the film itself. Do not let us any more invite our friends to see our films unless we have first prepared them as already suggested.

Our next prime consideration was the matter of **CONDITIONS** under which we display our films. Let us make our audience as *comfortable* as possible. Use only a beaded or aluminum surface screen, and place it so that the lower portion of the picture will be above their heads when they are seated. Try and arrange all this as well as the seating, the focus of the picture, etc., beforehand, as well as means of ventilation of the room and adequate *darkening* of the

same.

There is a simple piece of apparatus we should resolve to equip ourselves with, and that is a SOUND and LIGHT-proofing BLIMP. Have we ever stopped to consider how disconcerting it would be to witness a regular theater movie if the projection machines were parked out amongst the audience, in the open? Enjoyment of the film, I think most will agree, would be practically reduced to nil. Yet, in the case of substandard movies, this is invariably done.

To say nothing of the noise from even the quietest of machines, they universally leak streaks of light which play on walls and ceiling and are reflected on to the screen. Hence our sound and light-proof BLIMP. We will build it of wood, and line it with the best sound-insulation material we can currently secure. Suitable light-trapped vents will be provided—a large one at the top rear for the exit of the heated air flow from the lamp house and a row of intake vents around the base. In front there will be a good piece of plate glass, as a window through which to project the picture. This window will be covered with a hinged flap.

Perhaps we may, if ambitious, include a holder for color filters with which to provide special effects, such a blue for night scenes, etc.; red for fires or explosions; green for deep pastoral or river scenes, and so on. If we are mechanically inclined, we can fit extensions to the projector controls, which may be carried to the exterior of the "BLIMP." If we cannot do this, a quickly removable panel must be cut, which will enable *immediate* access to the controls and which can be instantly replaced the moment adjustments have been made.

Mount the projector inside the blimp on sound-proof material which, if it is of non-rigid nature, like rubber, felt, etc., must be so arranged or supported as not to permit the projector to sway or vibrate excessively. Then be sure to pick out a table or stand which is rigid and secure, on which to mount the "ensemble." If the little woman objects to our using her best polished-topped end table, even though it is a nice, solid one, we had better save up our pennies and purchase something of our very own. Here again, if we are handy, we can construct something to our own design. There is room for quite a degree of ingenuity to be displayed in this. For example, the "blimp" and stand could be all built as one integral unit. One other item we must prepare. If we cannot reach existing stand, table or room light switches from our projection vantage point, let us provide ourselves with an extension line and switch of some kind.

Since our "blimp" is for the purpose of both sound AND light suppression, our aim will be largely defeated if fog marks and shadows from stray light from other sources than the projector are reaching the screen. It would be advantageous to set up our screen at some convenient time and carry out a test to discover if any such stray light

crosses it. From street lights, perhaps, or from passing vehicles, or there may even be light passing through cracks around doors from other lights in the house. Such stray light may not reach the screen direct, but may be reflected from walls, ceiling, mirrors, or other shiny surfaces. Cheap "needle" paper (obtainable from Kodaks) or other opaque material, fitted with sticky tape, may be used to cover windows or shield the screen from points whence such stray light is being transmitted. These precautions will reward us many times over in securing unbelievably improved results. If we use an amplifier to provide musical and/or spoken accompaniment in the presentation of our films, the use of a "blimp" will be doubly appreciated, for the clatter of an "open" projector is bad enough as a solo. The addition of music—otherwise emphatically desirable—only seems to add to the confusion when the projector noise is intermingled with it.

While we are on the subject of sound, we may as well remind ourselves that the same remarks apply here regarding pre-care to have everything in order and all experimentation carried out in advance. Also let us arrange our selection of recordings in their correct sequence and have our script, if any, covered with a hooded light. One man I know has his script typed and arranged on a continuous roll (adding machine refills) which he winds off from a full to an empty roller by means of a hand control knob, as he reads. The script has the "cues" for music, etc., tune-ins, fades, and so on, noted in the margin at the appropriate point. Such a script can be covered by the very smallest of miniature lights. The entire arrangement is excellent. This man presents his films so well and with such meticulous care that he is in demand everywhere. Needless to say, he exhibits the same care throughout—in his choice of subject material, his treatment, planning, editing, cutting and titling. He is a credit to all amateurs.

Yet, when analyzed, his work is only the application of common sense and employs that which everybody knows or should know if they take an interest in their hobby.

The cleaning and oiling of the projection machine, of course, takes its place with the other pre-show preparations. Particular attention should be given to the cleaning of the gate apertures, to free them from unsightly accumulations of dust and fluff, which will be much magnified when projected on to the screen. To prevent recurrence of this during projection, only films which have been periodically cleaned should be projected. (There are numerous cleaning pads and preparations on the market.)

And now we come to the last of our "prime consideration"—the manner in which the film is shown. We have already dealt with much of the material affecting this and there is no need again to review what we have said about being "on our toes" to immediately correct misalignments of frame lines, focus, control of room lights and smoothness of presentation of music and speech accompaniment (if any). One thing of great importance, however, may be said in connection with avoidance of "running off" the end of a film on to a blank screen.

It will be recalled that we included, in the recommendations concerning preparation of the film itself, the advice to attach opaque or "end" trailers to the ends of all films. This is for the purpose of giving time to lower the flap over the "blimp" window before the film runs out. A far smoother way to finish, however, is by a kind of fade-out, accomplished by lowering the window flap at a medium rate of speed, just as the "action" part of the film is drawing to a close. One or two frames near the end of the film are pierced with a few pin pricks or minute punch holes. Knowing they are somewhere near the finish of

(Continued on Page 415)



Grandeur

AMONG THE MOVIE CLUBS

Metropolitan Club

FOUR films were shown at the October meeting of the Metropolitan Motion Picture Club, held at the Victoria Hotel, New York City. They were "Gaspe Peninsula," by J. O. Van Tassell; "The South Wind Whispers," also by Van Tassell; "White Tail Trails," by Joe Harley, and "Broomstick Gymnasium." Arthur Gale wrote the scenario for the gymnasium picture. Leo Heffernan photographed it, and George Ward handled the commentary.

New members joining the club were Thelma Hensiek, Ann R. Ahern, Grace Bolman, Otto Heinemann, Ann Holzapfel, Evelyn Lawrence and Wilbur Krimpen.

Philadelphia Cinema Club

THE showing of the film, "Filters and Their Use," completed the Harmon Foundation series, at the October meeting of the Philadelphia Cinema Club. An enlightening talk on this subject was given by H. E. Moore, adding emphasis by means of illustrations on a blackboard.

A new principle in third dimensional movies was demonstrated by its inventor, E. H. Bickley. He displayed the instrument called a swing mount and projected a film showing the results. The club also saw a travelogue on South America by Walt Disney.

Saint Louis Club

THREE films highlighted the October meeting of the Amateur Motion Picture Club of St. Louis. They were "Yes Sir, That's My Baby," by Lon Wadman; "Florida In 1941," by Joe Epstein, and "The St. Louis Zoo," taken at the Annual Picnic. Helpful to many members was a demonstration of various types of film splicers and splicing methods.

San Francisco Cinema Club

HIGHLIGHTING the October meeting of the Cinema Club of San Francisco was the screening by A. O. Olson of one of his motion pictures with sound via "magnetized wire." It was a forty-minute Kodachrome film "Come to the Fair."

K. A. Meserole showed an 800-foot black and white travel film titled "Travelogue of the Philippines," which he filmed ten years ago.

Minneapolis Cine Club

THE monthly meeting of the Minneapolis Cine Club was held at the Covered Wagon on Tuesday, October 19th. Featuring the program was a Honeymoon film made by the Club President, Len Martin, while on his honeymoon.

New members just announced are Lawrence T. Anderson, Warren H. Reynolds, George H. Meyers, C. J. Elison, Allan H. Pahr and Dr. W. E. Proffitt.

Utah Cine Arts Club

FOUR films featured the October meeting of the Utah Cine Arts Club, held at the Art Center on October 20th. They were "Vacation Time," by W. L. F. Samuelson; "Dinner Party," by Mrs. Frank Thomson; "Rodeo Thrills," by Jack Andrews; and "Royal Visit," by T. J. Courtney, a record of the British King and Queen's visit to Canada in 1939.

Washington Society

WARNING DOANE, Hollywood film producer, spoke before the Washington Society of Amateur Cinematographers at its recent meeting, giving them the outline of the many details that go into making a professional picture. Following Mr. Doane's talk, William Kneppel screened his "Yellowstone Symphony" in Kodachrome.

Long Beach Cinema Club

TWO meetings were held in October by the Long Beach Cinema Club, October 6th and 20th. At the first meeting Carl Weldin showed 400 feet of 16mm. Kodachrome showing Easter Sunrise Services and other miscellaneous scenes. Dr. and Mrs. McCoy showed a Kodachrome picture of Old Mexico and another on Sequoia National Park.

Tri-City Cinema Club

A WALT DISNEY film, "South of the Border," featured the October meeting of the Tri-City Cinema Club. Tom Severs, of Moline Ill., showed an 8mm. film "National Championship Hillclimb" which was extremely interesting. Ray Schmidt, of Davenport, Iowa, screened 200 feet of unedited film, asking for suggestions from the members as to editing.

Syracuse Movie Makers

THE Syracuse Movie Makers held two meetings in October. A Boy Scout film featured the meeting on October 5th. The meeting on October 19th was turned into an evening of pro and con discussions of titles, using positive and the reversal method.

Club members have started a series of home study meetings, with the home study group meeting the fourth Tuesday of each month.



Matching Lens Diaphragm Setting

(Continued from Page 401)

should cut the reading in two. If it does not, the stops are not accurate. Turn the diaphragm ring until the meter does read half as much as for the last diaphragm stop. The reading on the ring will now be exactly one stop from the previous setting.

To check the transmission of one lens against another, set the standard lens to one stop below maximum aperture and observe the reading on the meter. Now change to the unknown lens and rotate the diaphragm until the meter returns to the same reading as before. This will indicate the same amount of light passing through the lens and hence the position of the diaphragm will correspond to the setting of the standard lens. If the transmission of the lens is identical to the standard, the diaphragm should read the same as the standard lens. Any variation will show up instantly.

In large studios, a standard lens aperture is usually used in connection with a standard key light level. With the same film used in all the cameras, a constant exposure is assured provided the lenses are all matched for transmission. The lens transmission tester is invaluable for cases such as these.



Anglers

Friedman Joins Agfa

JOSEPH S. FRIEDMAN, prominent photographic chemist of Irvington, N. J., has joined the Research staff of Agfa Ansco, America's oldest manufacturer of photographic products, according to a recent announcement made at the company's main offices in Binghamton, N. Y.

Dr. Friedman, who received his Ph.D. degree from Harvard University in 1921, is a popular writer and experimenter in the field of color photography. As a member of the Agfa Ansco Color Research Department he will be engaged in the further development of Ansco Color Film and Ansco Color Paper.

A member of the American Chemical Society and the New York Academy of Science and a fellow of both the American Institute of Chemists and the American Association for Advancement of Science, Dr. Friedman has played an important role in the development of numerous color reproduction processes and has made important contributions to the science of photographic chemistry.

In 1928 he conducted, with Edwin Land, the fundamental research in the field of polarized light which was the basis for patents later used by the Polaroid Corporation.



Sparkling Waters

Diary of a 10-Year Movie Maker

(Continued from Page 403)

Movies take on new sparkle with this fine precision instrument. Much of my time now will be devoted to re-editing odd scenes which hadn't been brilliant enough with the old outfit . . . lucky thing I've saved those old films!

1940

Many very fine professionally made movie subjects are now on the market . . . and best of all, at reasonable prices. They're just the thing to round out a home movie program, and the quality is excellent! A complete variety of selections are available in 8mm., 16mm. silent and 16mm. sound editions. I for one am glad that some far-sighted individuals have awakened to the fact that there's a demand for these really modern pictures . . . who wants to look at those old fashioned reductions made from 20-year-old 35mm. releases, heretofore available?

Other alert individuals are forming rental libraries whereby the latest prints can be rented at a very nominal cost. Those who do not care to purchase the subjects outright may still enjoy them by taking of one of these libraries.

Still others offer an exchange service wherein the first reel is purchased outright at the regular rates and may be

exchanged later at any time for a completely different one. The new film, in turn, then become the property of the customer for as long a period as he desires to keep it. In this manner the movie addict always has possession of a choice subject. The charge for this service is, likewise, usually very reasonable.

1941

Strangely enough, I'm making my first serious attempt at indoor movies . . . and after all this time! Can't understand why I haven't tried this before, because it's simplicity in itself . . . supersensitive film . . . two or three photofloods in reflectors . . . a 10 cent exposure guide and a firm determination. Results are surprising!

I've now decided to venture forth and try my success in the way of outdoor NIGHT movies. A brightly lit central business district is the ideal subject which, in my case, is Chicago's Loop. Even my $f:3.5$ lens stop proves ample for such scenes. Several shots filmed at 8 frames per second are even better, but action is speeded up ridiculously.

Something else has taken my fancy recently . . . the processing end of the game. It's only natural that a real movie fanatic should be a little curious about what goes on after his films are rushed to the finishing lab. Of course I can't hope to compete with the professionals, but at least I can experiment in developing shorter lengths of film . . .

that new developing rack I bought is just the thing! Besides, I'm already familiar with darkroom work, and fundamentally the principles involved are the same as in still photography.

This certainly looks like an eventful year!

1942

I think last year more was accomplished than in any previous period. I dabbled in just about everything . . . took more Kodachrome than ever before . . . learned many new tricks of the trade and gained the most prized reels of all my movie making activities. The importance of using some sort of a script and the ability of organizing one hastily are now prime requisites. Sometimes conditions are such that a previously prepared script is impossible, in which event, one must learn to recognize good continuity instantly while "on location". This calls for fast thinking and usually takes considerable training, but isn't really difficult.

Much of my time is now being spent making "stills" from my favorite movie scenes. The addition of a special enlarger to my equipment makes this possible. The advantage here is that the film doesn't have to be cut . . . any choice frame may be enlarged, and there certainly is a choice on a movie film! With the film clamped in a special "gate", the enlarger, which resembles a folding camera, is exposed to a bright lamp, thereby forming a negative image of the movie frame on a regular roll film. This enlarged negative can then, in turn, be used to make a photographic print either by contact or further enlargement.

It's fascinating work . . . and it IS nice to have "stills" from favorite movies to pass around!

1943

War restrictions on photographic supplies are playing havoc with movie making aspirations this year. With more and more equipment being rationed or production being drastically reduced for civilian consumption, the ciné fan has to be more conservative than ever. They say that money talks, but there are times when even money cannot replace a broken lens, a defective exposure meter or a burned-out photoflood lamp. Film, though sharply curtailed, is still available for occasional use. Owners of the magazine load cameras will find their film type unobtainable most of the time, however.

This all means that each foot will have to go further than ever before. Every exposure should be checked and rechecked before it's too late . . . every scene should REALLY be worth the footage devoted to it. Discretion must be used, too, in war-time filming . . . many good subjects are taboo.

Time sure flies! It seems incredible that so MUCH time has elapsed since I first cast an eager eye towards a ciné camera, anxiously peered through the viewfinder, and hopefully pressed the

(Continued on Page 421)

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Lapse-time for the Amateur

(Continued from Page 397)

A Practical Application

If you are prone to be practical try a practical experiment. It is said that photo-flood bulbs, like people, become weak in their old age. Here's an experiment that will tell the story . . .

Place an exposure meter in front of a gray card that is directly illuminated by a No. 1 photo-flood bulb. Bring the light close enough to the card to allow the meter to show a fairly high reading. Bring a small clock into the picture, placing it near the meter and set its hands at twelve o'clock. Adjust the lapse-time camera for an extreme close-up of the meter and clock, and set the interval timer for two exposures per minute. After taking a light reading start the camera on its first exposure and also start the clock. For this experiment the light must remain on constantly as it supplies the necessary illumination as well as being the guinea pig for experimental purposes.

Since the average life of a No. 1 photo-flood is approximately two hours, this sequence will use about six feet of film. Thus the life span of the bulb can be screened in about fifteen seconds, its exact length in hours and minutes being shown by the clock and the intensity of its illumination all through its life, will be indicated by the reading shown by the meter.

A newsreel firm made a practical application of lapse-time photography in showing the progress made in righting the capsized steamship Normandie.

Entomologists and nature lovers will find enough subject matter to keep their lapse-time cameras clicking full time. The building of ant hills, cocoons and other insect habitats are only the beginning. Each subject presents its own lighting and time-lapse problem, but is generous in its reward when completed and projected.

The results obtained by the amateur who works with lapse-time depend entirely on the extent to which he cares to delve into its possibilities. This extent need not be limited by expensive equipment, as shown in the foregoing paragraphs, but by the ingenuity of the individual making the experiments. When you start lapse-time photography there is no limit. You will never be satisfied. Each set-up will make you want to do the next one a little different, and you will consistently make improvements with each trial. It will work on you like a drug and as a result of your all out effort you will produce movies with an allure that you have never experienced before.

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your nearest Blood
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blood may save a Life
—GIVE.

Improving Amateur Projection

(Continued from Page 411)

the film, you are keeping a watch out for them on the screen. When they appear they serve as your "cue" to commence closing off the lens. Should you accidentally "miss your cue," however, the opaque trailer at the film end will still save you from running off on to a clear screen.

PHOTOS AT ONE-MILLIONTH SECOND EXPOSURE CLAIMED

PHOTOGRAPHS with an exposure of but one-millionth of a second, brief enough to stop a rifle bullet or any fast-moving object, can now be made by a new high speed electronic light equipment developed by engineers in General Electric's laboratory, the company has announced.

This device, using a small mercury lamp no bigger than a cigarette, consists of a small portable box, 10 inches square and weighing less than 20 pounds. On the front is the light source, resembling a small auto headlight, which can be operated manually by means of a push button, or automatically by electrical contacts or a phototube and pre-amplifier. It will illuminate 20 square feet of area with sufficient intensity to photo the fastest moving objects, in fact

in tests has "stopped" a wheel revolving at 70,000 revolutions per minute.

Fastest camera shutters of the usual type, with blades moving between the lens elements, ordinarily operate at a minimum of 1/300th second. Focal plane shutters, consisting of slits in a curtain moving immediately in front of the film, cut this down to 1/1200 second. Recently published high-speed photographs of athletes, etc., have been made with a lamp giving exposures of 1/30,000 second, but 1/33 as fast as the new G-E unit.

The new device uses standard and easily replaceable electrical parts and a single electronic tube, with a 100-watt Mazda mercury lamp as the light source. Such a lamp is now used as a high-intensity light for illuminating airports,

television and motion picture studios, and for other purposes. Its brightness in such installations is one-fifth of that of the sun's brightness.

The ordinary 115-volt a-c household lighting circuit is used to operate the unit. The current is rectified by an electronic tube and then used to charge a capacitor, really an electrical storage tank. In three seconds enough power is accumulated to operate the lamp at full flash intensity.

At approximately 2000 volts and 2000 amperes, it reaches a maximum of some 4,000,000 watts. Since current flows for only about a millionth of a second the total energy in each flash is very slight. It is only enough to light a 40-watt lamp for a tenth of a second.

"Because of the pressure of war work, for which the unit was made, we have not been able to experiment fully with many fast-moving objects," according to S. Lawrence Bellinger, who was active in its development. "Rather we have confined our efforts to using the device for studying high-speed machinery, such as turbine and supercharger parts.

"The small mercury lamp has a lifetime of but one second, but despite this brief period it will last the ordinary newspaper photographer 500 years, for it is good for 1,000,000 exposures."

Mr. Bellinger, 27 years old, was born at Glens Falls, N. Y., and attended Cornell University. He served as a photographer for the War Department in the Canal Zone before he joined the G-E General Engineering Laboratory in December, 1941.

New Filmosound Releases

THE Bell & Howell Company have announced the following two new releases of the Filmosound Library.

"Saboteur" (Universal), 11 reels; Priscilla Lane, Robert Cummings, Otto Kruger.



Alfred Hitchcock's most significant screen achievement, stars Priscilla Lane and Robert Cummings. A timely story of wartime America and dramatized in one man's conflict with enemy agents. A young aircraft factory worker, falsely accused of sabotage, tracks down the real saboteurs. Fast-moving plot, in five days its characters speed across thirteen states. Available, for approved non-theatrical audiences.

"Hell Below Zero," sound, 10 min.

A blinding snowstorm in equatorial Africa is one of the thrills of "Hell Below Zero," a one-reel black-and-white film photographed and narrated by Carveth Wells, world-famed traveler. The little known "Mountains of the Moon," photographed for the first time.

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FROM SCRIPT TO SCREEN

Cinematographers Responsible For Agents' Success

(Continued from Page 399)

sence. Hollywood wondered what she would look like, for everybody knew she was a lot older than when she last was seen as a perfect example of glamour. Well, she is still beautiful and glamorous on the screen, but it was the art of a cinematographer that brought it about. I wonder if the star and her agent realize this. I wonder if they have shaken that cameraman's hand and thanked him. The star probably has, but I'll bet the agent hasn't. Without a doubt he thinks that it was his own work that put the woman back on the screen.

Cameramen have meant a great deal to me in bringing new faces to the screen, particularly in the last year and a half. Through their artistry in making screen tests I have signed Kim Hunter to a contract with David O. Selznick; Louise La Planche to Paramount Studios; Rosemary La Planche to RKO Studios and Jeanne Newport to Charles R. Rogers. Peggy O'Neill, under contract to Charles R. Rogers, was one of the few newcomers I have ever signed without a screen test. I was surprised when Mr. Rogers handed me a contract without giving her a test, but he told me that he had enough faith in Hollywood cameramen and their art not to bother with a test as long as the girl looked photogenic to him. "Don't worry about how she will look on the screen," Rogers said, "Our cameramen will take good care of that."

Very shortly now I will be depending upon the cameramen again, for I have two more new girls I am planning to introduce to the screen. They are Early Cantrell and Laurie Hayden. Miss Cantrell has dark auburn hair. Miss Hayden is a blonde. I discovered Miss Cantrell at the Pasadena Community Playhouse where she was giving an outstanding performance. Miss Hayden is playing the leading feminine role in "One in Every Family" at the Pasadena Playhouse laboratory theatre at this writing. I am certain they will both secure contracts in films, for I have faith in them and I have faith in the cameramen who will make their tests that are coming shortly. Cinematographers, I thank you.

Santa Fe Films

The Princeton Film Center has been named distributor of the Santa Fe Railway's two new 16mm. color motion pictures, "Loaded For War" and "Tank Destroyers." They are available by writing to Princeton Film Center, Princeton, N. J.

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What do YOU want in the next motion picture camera YOU buy? How do YOU think it should look? Load? Operate?

What do YOU want in YOUR postwar motion picture projector? How can its operation be simplified, perfected? Have you an idea as to YOUR projector's appearance that you believe has merit and appeal?

It is YOUR answers to these questions, in rough sketch or finished drawing—with or without supplemental explanation, as you may desire—that DEVRY is looking for.

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MECHANICAL OPERATION: You may submit working models, mechanical drawings, rough sketches. *The idea is the thing—how to simplify, improve, perfect either camera or projector operation—for instance:*

PROJECTOR: Ventilating system (lamp house); optical system; film movement; reel arms; tilting device; film safety devices; take-up, framing, focusing and shutter mechanisms, etc. Can you suggest particular developments of these features?

CAMERA: (single or turret lens mount) view finder; shutter; footage indicator; loading mechanism; winding key; exposure guide; lens mount; focusing; single frame release mechanism, etc. How do you think these can be simplified, perfected?

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Griffis Advises 'Russia' For Public

Stanton Griffis, new chief of the OWI motion picture bureau, has strongly recommended to the WAC that the Col. Frank Capra film, "Battle of Russia," be released for public showings, and it is very likely that his advice will be followed.

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Naval Technicians Supervise Optical Movies

Motion picture on "Fine Grinding," third of series under production at Bell & Howell Chicago plant for training of optical craftsmen, being supervised by representatives of the Navy and U. S. Office of Education. Standing, left to right: Lyle F. Stewart, field supervisor for U. S. Office of Education; Lt. Comdr. W. W. Williams, Prof. Neil F. Beardsley, Comdr. E. B. Oliver, Lt. H. E. Carr, Lt. C. C. Pierce, Lt. J. D. Cassidy. Seated: Wm. F. Kruse, writer and director of the series.

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A SERIES of visual education units, on "Optical Craftsmanship," each consisting of a ten- to fifteen-minute 16mm. sound motion picture, a 35mm. film strip and a sixteen-page learner's manual, has just gone into production, under the joint auspices of the Navy and of the United States Office of Education.

Commander E. B. Oliver, of the Bureau of Ships, Navy Department, with several other officers, visited the new Bell & Howell optical plant in Chicago, to consult on the progress of the films being produced by the company, as part of this project. He saw the third of the series, "Fine Grinding," under the cameras. General photography on two, "Finger Grinding" and "Pin-Bar Grinding,"

has already been completed. Other units being made at the Bell & Howell plant include "Pitch Buttoning and Blocking," "Polishing" and "Centering and Cementing." The films dealing with spherical surfaces will be made at the Chicago plant, those on flats and prisms will be made in New York.

In answer to a question as to why this field was being fostered so extensively, Commander Oliver explained that outbreak of the war has made imperative the immediate large-scale expansion of American production of precision optics. "Optics are the 'eyes of the Navy,' and you can't fight very well without eyes," he said. Every manufacturer he had approached to take on the production of naval optical devices complained of lack of skilled manpower. There was, furthermore, practically no material available for the training of the new unskilled hands that had to be drawn by the thousands into the infant industry.

"In the Navy itself, we are now teaching just about everything by means of 16mm. motion pictures," the Commander continued, "from tying knots to swimming, so why not teach optical craftsmanship by means of such visual aids?"

The U. S. Office of Education reached the same conclusion. After consultation with the War Manpower Commission, it was decided to add this vital new field of manpower training to the machine-shop, shipbuilding, welding and other crafts in which the USOE films have rendered noteworthy aid.

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Invaders Learn to Surrender

(Continued from Page 400)

the paraphernalia of a century-old theatrical tradition—we feel that he plays. In America he does not play, he acts most naturally, unencumbered, unsophisticated—we feel that he is himself.

Life, atmosphere and education in our country inoculates this "natural" art, obvious, if I may say so, already in the American screen child's performance.

Another striking difference of film conception between the two worlds is our sense of humor. A divine gift of America's people, unparalleled on this globe, deeply wholesome in its beneficency, healing wounds like the soft caressing hand of a doctor magician. European humor is entirely different—where it springs onto the surface of life and art, it is sharp, whipping, often bitter as acid, full of sarcasm and ailing irony. This may be the explanation of the fact that American humor has swept all over the world like a torrential flood.

In Europe, educational systems are in big style. We have less of them, but we know that our movie is a gigantic medium of expression for our healthy American spirit. We believe that we should give our youth the courage to meet life's struggles, with the assurance that honest effort is not futile, and that the power of good is victorious in the end. This is the attitude of our democratic nation. We are loyal and tolerant to the opinions and actions of others, but we don't wish that defeatism of life dominate our films.

European films paint life with deep resignation. In our nature, optimism is the fundamental view. Things don't get us down so easily—chin up—regardless. And that is what will help us win this war, too.

And it will be our American films that will lighten the screens of Europe on her convalescent but peaceful tomorrow!

Electronics In Photometry

(Continued from Page 404)

The method is to pass the film in the roll past a point at which is located means for scanning the film in a direction at right angles to its direction of motion. The scanning beam consists of infra-red radiation or any radiation to which the emulsion is insensitive and to which a photo-cell will respond. The radiation from the scanning beam is picked up by a photo-emissive cell, with which is preferably associated an electron multiplier, and is further amplified if necessary. In regions where the film has no faults the output is constant, but should a fault be traversed by the scanning spot the small change in illumination of the photo-cell is passed on as a pulse to the amplifier which finally operates a thyatron circuit which in turn triggers a relay. The relay may then perform anything required, e.g., stop the machine, punch the film or give audible warning. A variety of electronic circuits can be used as accessories, for example to prevent the scanning spot from running over the edge of the film and thus recording a major fault!

In practice this method of examining film proves greatly superior in sensitivity to the human eye. The eye can just detect a black circle stuck on a piece of film, the photo-electric examining machine will detect a short, faint pencil line drawn on the emulsion surface.

Records on Microfilm

OVER 85 miles of microfilm in a fire and bombproof vault now preserve the maps, records and deeds accumulated since 1852 in the Los Angeles County recorder's office, the largest of its kind in the world. The reels of microfilm require only three per cent of the space needed for the original documents.

Miss M. Beatty, recorder of the Los Angeles County office, reports that the cameras took over 7,000,000 individual exposures. In all, 13,186,056 pages of documented material—including 25,000 maps—were microfilmed. Over 450,000 feet of Du Pont Safety Micro-copy film was used on the project.

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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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Diary of a 10-Year Movie Maker

(Continued from Page 414)

exposure button. Since then, many fleeting moments of pleasure have been permanently recorded . . . to be re-lived at any time on the screen. All the time and effort spent in making these movies is well repaid in viewing once again those never-to-be-forgotten scenes.

Yes, movie making is one of those things that gets in your blood. It's a condition that's difficult to remedy. But after all, who WANTS a remedy?

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S.M.P.E. Holds 54th Semi-Annual Conference

THE 54th Semi-Annual Conference of the Society of Motion Picture Engineers was held in Hollywood on October 18, 19, 20, 21 and 22. Technical papers were presented by experts on practically every phase of motion pictures.

Among the papers presented were: "The Flat Spiral Reel For Processing 50-foot Lengths of 35mm. Film," by C. E. Ives and C. J. Kunz of the Eastman Kodak Company; "The New Acme-Dunn Optical Printer," by Linwood Dunn of RKO Pictures; "A High Speed Method of Controlling Kelvin and Light Intensity for Motion Picture Printers," by Prof. Irving E. Dyatt, Oregon State College; "The New DuPont Photo Products Control Laboratory," by William P. Hillman, E. I. DuPont de Nemours & Co.; "Like This," by Lt. Commander Patrick Murphy, Chief of Visual Training Section, U. S. Coast Guard, Washington, D. C.; "A New Studio and Location Recording Unit," by J. L. Fields, RCA-Victor Division, Radio Corporation of America, Hollywood.

Also a symposium on the Paramount Color Still Background Projection System in which three papers were presented: "Duplication of Kodachrome Original, with Enlargements, Reduction and Color Correction," by Earle Morgan and Roy Peck of Paramount Pictures; "Transfer of Kodachrome Emulsion to Lantern Slide Glass," by Barton H. Thompson of Paramount, and "High Efficiency Stereoptican Projector for Color Background Shots," by Farciot Edouart, A.S.C., of Paramount.

"What To Expect of Direct 16mm.," by Lloyd Thompson, vice-president of the Calvin Company, Kansas City; "16mm. Color to 35mm. Black and White," by Carroll Dunning, Dunningcolor Corporation, Hollywood; "Improvements in 16mm. Equipment," by Lt. Commander Alfred Gilks, Office of Strategic Supplies, Field Photographic Branch, Navy Department; "Post-War Television Planning and Requirements," by Klaus Landsberg, Television Productions, Inc., Hollywood; "Cunningham Combat Camera," by H. G. Cunningham; "Monopack Processes," by Joseph S. Friedman, American Photography, Binghamton, N. Y.; and many other papers dealing with sound and laboratory and problems of the armed services.

Pix For Better Vision

ENGLISH night fighters in the war zones are reported to have been ordered to see at least two pix weekly in order to condition their eyes, according to Capt. Kutenwascher who visited Warners recently. British government optometrists have found that the combination of darkness and intent watching of visual images is ideal for the eyes for the work demanded by night bombing expeditions.

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Of The American Cinematographer, published monthly at Los Angeles, California, for October 1st, 1943.

State of California }
County of Los Angeles } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Hal Hall, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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(Signed) HAL HALL, Editor.

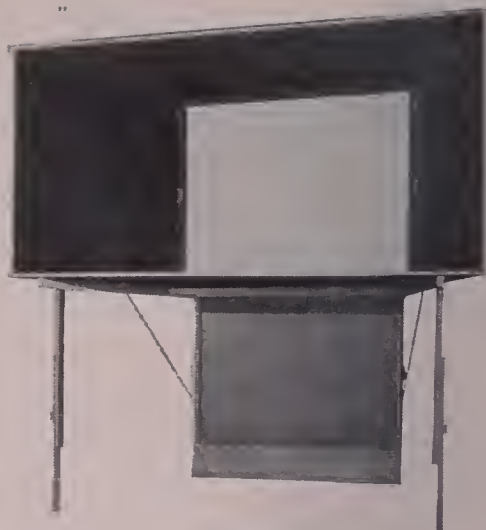
Sworn to and subscribed before me this 8th day of October, 1943.
(Seal) OLIVE M. BERREAU,

Notary Public in and for the County of Los Angeles, State of California.
(My commission expires August 6, 1944.)

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Impact of Walt Disney's "Victory Through Air Power" is being felt in high military circles throughout the globe, as indicated by the number of requests for prints being made to the Disney Studio. Technicolor today is rushing through a 16 mm. print requested by the U.S. Army Pictorial Service overseas, "to be used for important military purposes."

Air Marshall Sir Sholto-Douglas, with headquarters in the Middle East, will shortly receive a print, at his request, for showing to Admirals of the British Navy and top military leaders in the Middle East Theatre. British Air Ministry wants the picture for its historical records and to show it at the Royal Air Force Staff College, where courses are



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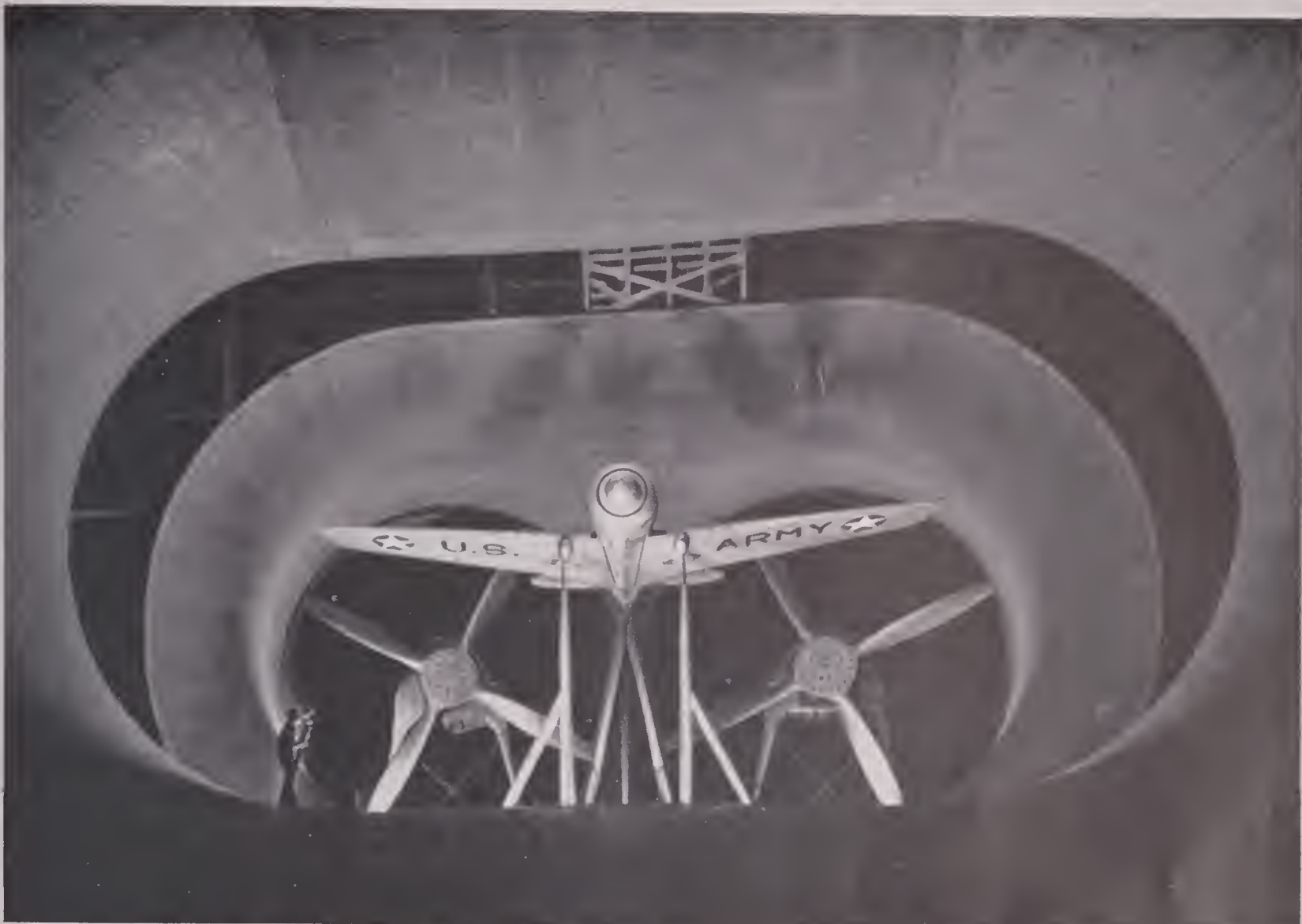
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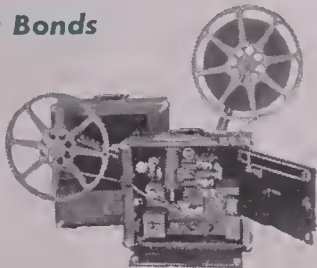
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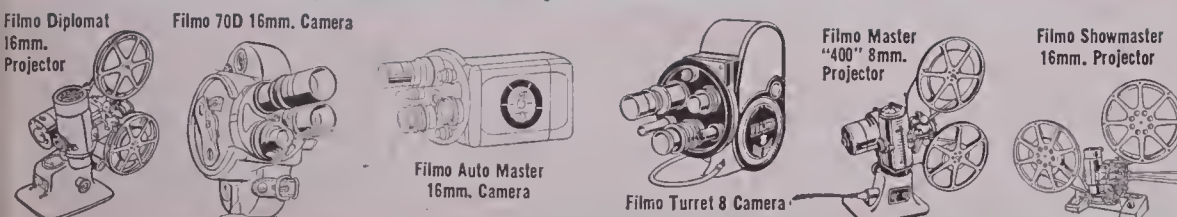
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In This Issue

PSYCHOLOGICAL PHOTOGRAPHY

*Making Christmas
Movies*



December
1943

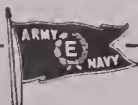
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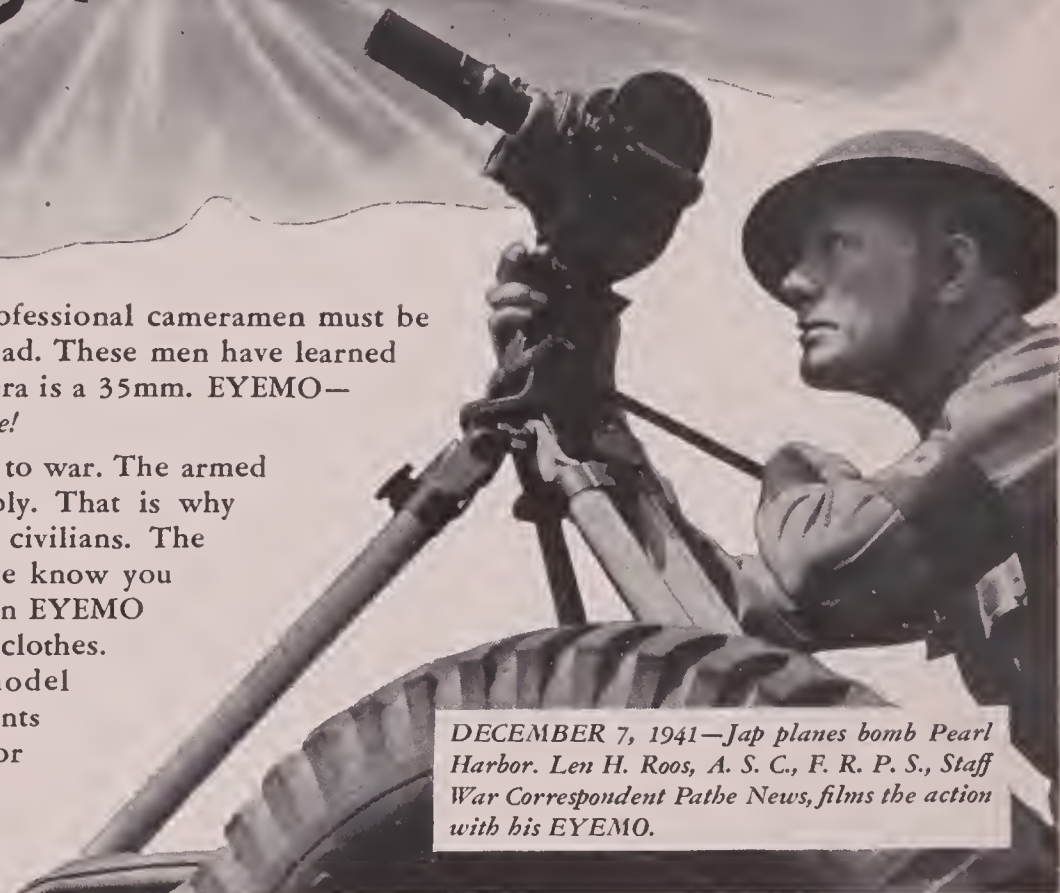
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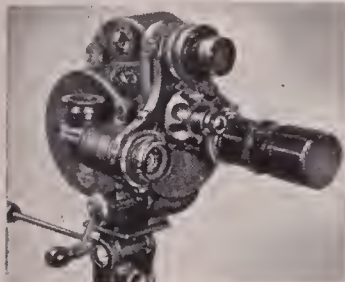
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 24

DECEMBER, 1943

NO. 12

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The Front Cover

On this month's cover is Stanley Cortez, A.S.C., Director of Cinematography on David O. Selznick's production of "Since You Went Away." It is one of those rare shots of its kind that you get when no one in the picture knows they are being photographed. The actor in Naval uniform is Joseph Cotten. The film is being produced for United Artists release.

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Psychological Photography

By STEVE O'DONNELL

PSYCHOLOGICAL photography -- that is the provocative new expression used to describe the strange and subtle, but highly effective, manner in which gifted Stanley Cortez is playing upon the mind and the emotions with his camera, as he shoots "Since You Went Away" for David O. Selznick.

This technique is something new and then again it is not. It combines everything that is good in that which is old with some extremely good new ideas.

Cortez has always been known as a bold adventurer into the realm of a new camera technique. Yet he has never been a radical thinker, intent simply upon doing something in a new way, regardless of whether or not it was a better way. He has reverence for tradition, for the ways of doing things that time and the experience of himself and other craftsmen have proven to be sound. So when Cortez says he has something new, you may be sure that he means something better than we had yesterday.

What, then, is the psychological photography that has everyone talking about "Since You Went Away." It is a treatment of emotional situations that unconsciously takes the onlooker through the emotional experience of the actors, as though he himself were living the part.

To understand it, you should first understand Cortez. He is a man to whom moods are of great importance. For example, he loves music, not alone

for the relaxation he finds in it, but because he can create, intensify, or even change his own mood, with enough of the right kind of music. Certain combinations of sounds effect him, as they do most sensitive people, emotionally.

Now he has slowly come to the realization that sound and light are but different aspects of the same thing, so far as the effect upon human emotions is concerned. We have long been familiar with the fact that, as a general thing, allegro passages produce sensations of lightness and gayety; largo passages, sensations of depression and sadness.

Cortez has long thought that if only cinematographers could come to regard the use of light as musicians regard the use of sound, motion picture photography would take a long step forward on the road to artistic maturity.

In the past, he has experimented often, but has been restrained by various considerations from giving his dynamic concept of cinematography full reign. When he was first assigned by Mr. Selznick to shoot "Since You Went Away" Cortez determined to explain his newly developed theory in detail.

To his vast delight, Selznick quickly sensed the tremendous values in the Cortez idea of psychological photography. With characteristic daring, the man who sunk \$4,500,000 in "Gone with the Wind," while critics shook their heads, and who emerged with the greatest smash hit in

motion picture history, told Stanley to give his ideas free play.

The results, seen thus far only by a select few who have been permitted to view the rushes, are truly astonishing. As you watch scenes from "Since You Went Away" on the screen, you are unable to understand at first why they effect you so profoundly.

In fact, the entire picture is a slice of life today, a cross-section of America under the impact of total war.

The sequences are dramatic, surely, but they are the same experiences through which most of us are living. It would be natural to suppose that they would lose something in being translated from real life to the screen. Instead, they gain something and they strike us with greater emotional impact than the things that we see about us in these tense, historic days in which we are living.

It is Stanley Cortez, at work with his lights and his lense, at work finally with a producer of Selznick's boundless imagination. Where the average man would lay restraining hands upon Cortez, Selznick is urging him on, or, to be more exact, leading him on, for Selznick by now has grasped the implications of the psychological technique so firmly that he frequently makes suggestions on the use of lights and lense that are in advance of Cortez's own thoughts.

Of course, a complete telling of the story of this development in cinematography in its relation to the story would give away in advance much of the effective material in "Since You Went Away." But Selznick, although opposed on grounds of principle to the practice of giving away story angles, or the detail technical effects, has graciously consented to permit description of one scene in "Since You Went Away" in order to illustrate the manner in which psychological photography is employed.

There is a scene in which Claudette Colbert, Jennifer Jones, and Shirley Temple, in the roles, respectively, of Anne Hilton and her two 'teen age daughters, Jane and Brig, enter a big hotel lobby, crowded, as all such lobbies are today. They are happy and gay, in anticipation of a long-awaited reunion with the husband and father of the family, a man who has waived his 3-A draft status to enlist.

Cortez makes you feel the gayety of the three without letting you know how. There is plenty of light on this scene and plenty of motion. This brightness is infectious and seems to enter your own spirit as you watch (or, rather, experience) the scene.

They walk up to the desk and make inquiry. A telegram is handed to Claudette. It is bad news. Tim Hilton will not be able to keep the rendezvous.

You next see the three, Claudette, Jennifer and Shirley, slowly retracting their steps down a long hotel corridor. In place of the scores of bright lights which he used in the lobby scene, Cortez now uses but one and that one light casts three long shadows, sad shadows,



shadows that seem to be great weights, each weight fastened to the ankles of its owner. All the sadness usually associated with dusk, the end of the day, the finish, the frustration, is in those shadows.

You feel the emotional drag yourself and the scene leaves you limp.

That's just one small trick in psychological photography.

Here is another.

This one has to do with the Hilton home. We all know that stage sets came first, motion picture sets afterwards. Too often the pictures followed the stage tradition blindly, doing things the way they had to be done on the stage, with the obvious limitations of the stage, limitations that frequently did not apply to motion pictures.

Thus, on a stage, a room is not a room, it is three walls of a room with the fourth wall left off, so that several hundred people can look in. Thus, on the stage, it is impossible to create the effect of having the observer in the room. The best he can hope for is to get the effect of looking into a room.

When he planned "Since You Went Away," David O. Selznick decided that much of the effect depended upon taking the audience into the Hilton home. So he built the home, on two adjoining stages. He built a house so substantial and permanent in appearance that you are tempted to move right in when you see it. The fireplaces are practical, so is the plumbing.

But that isn't all.

As the action proceeds, the camera is placed, not where it is most convenient to place a camera, but where the maximum emotional effect can be created. And one of the prime emotional effects is the effect that you are *in this house*. You aren't *looking into it* as you would on a stage. *You are in it.*

Thus when Monty Woolley and Shirley Temple play a comic scene with a reluctant turtle, you are in the tiny bathroom. The scene is hilarious—as are many of the scenes between this pair

Three striking examples of lighting effects achieved by Stanley Cortez, A.S.C., in photographing the David O. Selznick production of "You Went Away".



in the picture—and they gain much of their power from the effect mentioned. Any cinematographer will appreciate readily the difficulties involved in getting the camera into some of the cramped spaces of the Hilton home, but the results are well worth it.

Additional sense of reality derives from a lense treatment by which Cortez is creating the illusion of a third dimension on the screen. Although lay observers are not fully aware of it, frequently when one person is in focus on a screen, others in the same scene are not sharply in focus, if they are standing in different planes of depth from the camera.

In "Since You Went Away," by artful use of lighting and by unusual lense treatment, Cortez overcomes this difficulty, with a resultant effect of depth on the screen.

It is no secret in the trade by now that Selznick seems well on his way over the \$2,000,000 mark on this picture. Many people have been unable to understand the reason for the great expense involved in his latest picture, but this article will go a long way toward explaining it, to technical minds, at least. There are no mobs of extras here to compare with the capture of Atlanta (although there are some big scenes, notably the hangar dance sequence). Moreover, "Since You Went Away" did not start out to be as detailed a story as "Gone with the Wind."

What is making it expensive is the striving for perfection, particularly perfection in the delineation of moods. Ef-

fects that would seem trifling to many producers are being nurtured by Selznick as though they were rare, priceless flowers. Each nuance achieves its full beauty and power.

As for Stanley Cortez, naturally he is in the cinematographer's heaven. For once in his life, he is being permitted full play for an imagination of great range. His work on "The Magnificent Ambersons" made cinematographic history.

"It was good," says Stanley, "and I'm proud of my part in making it and grateful for the opportunities that were offered to me at that time to try some of these ideas experimentally. But this time I am working with a man whose imagination and courage seem to know no bounds. Believe me when I say that in *Since You Went Away*, the motion picture camera will take its place as one of the greatest instruments for artistic creations ever invented by man."

Kirston to Film Center

JOHN K. Kirston, formerly with Paramount Pictures and Walter Wanger Productions, has joined The Princeton Film Center, Princeton, New Jersey, as production manager. Kirston has had extensive experience in the production of training films, having completed a lengthy production assignment with the U. S. Army Signal Corps, as civilian motion picture expert, prior to joining the Film Center.



Above, Jack Smith, A.S.C. At left, result of 3NS filter. Shadows not blocked. Detail clear. Glare of sunlight on snow held back. Sky tones almost evenly with shadows.

Snow Photography

By ALVIN WYCKOFF, D. Sc., A. S. C.

As Related By

JACK SMITH, A. S. C.

IT HAD been one of those hot days, sultry and sticky, that commenced with the slow rising of a coppery sun in the morning. What air circulated around us during the day floated in off the Gulf to settle around rank vegetation in the back country. With the scantiest clothing we could wear we had panted and puffed around all day with it sticking to us like an uncomfortable plaster. Now, we sat out in front of our headquarters tent at the far edge of the airfield watching that coppery sun crawl down under the horizon of the Gulf, fanning ourselves into thinking the action induced a cooling effect when the conversation turned to the subject of "Snow."

Jack Smith had been up in the air most of the day—"twenty thousand feet," he said, "where it was really cool"—and now, as he wiped his face and neck dry he remarked, "I could be cooler in Africa than down here on this Florida Coast of the Gulf of Mexico."

Somebody snickered and exclaimed, "Africa!—don't be silly—it's hot in Africa—any place!"

"Well," Jack replied as he wiped away at the gathering perspiration, "I've been

on location in Africa where it was as cold as any location here at home—where there was snow, deep snow, plenty of it," and then he related.

Comparing locations at home and abroad reminds me of some of my experiences in the snow, any of them as cold and shivery as the atmosphere twenty thousand feet up. One of them I call to mind was in Africa.

Incredulously the group stopped fanning and looked at him. What was the use? Africa! It was too hot to argue.

"It's a fact," he continued, "I know it sounds rather odd to associate snow with Africa but nevertheless there is considerable snow up in the Kabyle Mountains.

Frequently I find myself comparing the great differences in personal comfort and the mode of travel to and from locations here in our own country as compared to the discomforts and crude methods I have had to contend with in foreign travel. Africa has only meager transportation facilities for expedition purposes. In fact they were limited to such an extent that my personal mode of travel in the Kabyle Mountains was

by the slow and stubborn acceleration of a streamlined African donkey, belly deep in snow. My camera equipment was transported on the heads of natives mushing slowly along knee deep in snow without the protective covering of boots or shoes—just a piece of automobile casing cut to the shape of a sandal and strapped on their feet. At that, they seemed quite happy and contented.

Another snow location where I encountered plenty of trouble was in central China enroute to Thibet crossing the famous Lu Pan San Pass at an altitude of 17,000 feet. At one crossing of a rushing stream of ice-cold water it required the combined force and efforts of the motor plus forty coolies pulling and pushing, to the accompaniment of shrieking shouts of blasphemy, before we could get the trucks across, and there were ten of them in the caravan, and then a route cut through snow from seven to ten feet deep before the caravan could arrive at the crest of the pass. The deep snow, the high altitude and practically no road other than a trail that had been worn by countless camel trains consumed a full day and into the night getting up over the summit. Tough going? Yes! But such are the difficulties to be overcome following trail-roads to location in that part of the world.

What a contrast to the facilities enjoyed in traveling to locations here at home. For instance, compare the last two winters I traveled back and forth to locations in Sun Valley, Idaho, where I enjoyed just about every comforting luxury any traveler could wish for.

Everyone knows, and those who don't have read about it, the luxurious winter comforts of Sun Valley Lodge. When we



started out in the morning we loaded into heated motor cars. Even the transporting trucks had heated cabs for the drivers. No mushing, no shivering porters, no barefooted transport carriers, no noise, no straining of muscle, cussing and yelling; just lovely smooth going in grand easy comfort.

Our location was at Galena Mountain, a place that crystallized in a temperature hovering around the 40 below zero mark most of the time of day, and at night . . . ? Oh, boy! The mercury got stiff! But 40 below is plenty cold for anyone to work in trying to get snow scenes. We had to be particularly careful with our cameras and accessory equipment. Before going into this location the cameras had to be drained of every drop of oil, otherwise the oil would have congealed and adding to the load on the motor, slowed up the normal speed of 24 frames per second.

Another important factor that had to be considered was the use of filters; the intense cold caused the jellies, inside filters, to become very brittle necessitating utmost care in their handling.

Incidentally, filters are an important factor in the accomplishment of effective snow photography. At high altitudes the sky is reflected as a deep blue through the crystal-clear thin air and without careful judgment the use of filters will have a tendency to cause an overcorrection as compared to the landscape and ruin the realism of the scene. Generally, I use a 3N5 filter, a combination of the No. 1 plus a 50 N. D. factor 4. With a general overall light standing constant at a Weston reading of around 25 little effort is required to compute the correct F value.

If at times the sky appears murky it might be advisable to use a Monobrom filter; be sure to compute the correct factor for the film it is to be used with. Since this filter is less dense than the 3N5 it is possible to cut the shutter to about 90 degrees rather than stop the diaphragm too far.

Upper left, result of No. 55 green filter. Sky overcorrected. Upper right, No. 21 Monobrom filter used with pleasing results of dark water, soft snow detail. Right, used No. 21 Monobrom filter, enhancing murky sky and giving transparent shadows.



There are many other conditions that arise from time to time that will require filters of other combinations. One particular scene recently made I recall. It was a movement of Ski troops traveling over the snow of the open mountain side and disappearing into dense wooded areas.

Ski troops wear reversible outer clothing. White outside when traveling through snow country to eliminate detection from the air, changing to olive-drab when approaching and entering wooded areas, blending with the very dark greens of the mountain forests and dark shadows on the snow. Here the condition becomes one of careful separation. Naturally, the troops are the essential factor of picture interest backed up by the scenery around them. It is my practice in such a condition to use a green filter No. 56, factor 3. This procedure calls for careful, experienced, computing to arrive at the correct exposure for the dark greens and shadows of the overall brilliances from being influenced by the considerable glare and reflection of the snow that seems to dominate the area to prevent under ex-

posure. The olive-drab of the uniforms is a much lighter shade of green than the green of the foliage and shadows that mingle with the troops, therefore, the green No. 56 filter lightens the olive-drab uniforms, separating the troops from the darker foliage and shadows revealing action in excellent detail. With characters garbed in such colors that blend into their surroundings it is better to avoid the use of a filter of the red end of the spectrum. Such a filter would entirely block and dull the action of the troops. The effect would be a blending of the troops with the foliage and shadows with an increasing contrast of the snow. The effect of a brilliant scene would be destroyed. In using the green No. 56 filter in snow photography better results will be obtained by avoiding the sky as much as possible, otherwise the scene will be depressed by a sky out of all normal relation to the scene.

Pola Screens must be used with caution too. There have been occasions when I have had to overcome the terrific glare of back-light resting on a huge mound of snow between me and the

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A PLANE lands at an American air base in North Africa—a Corporal runs out, takes a package from a crew member and immediately scurries to a nearby shelter—in a few minutes he emerges with most precious military information, battle zone pictures, developed and printed.

“Pictures for the General,” shouts the Corporal as he hands the package to a waiting messenger.

That’s the early stage of most American drives where strategy is changed rapidly, where troops, planes and mechanized units make no major moves without first photographing the potential battle area, the placement and movement of the enemy. Prelude to attack on all battlefronts is a complete review of these aerial photographs by the strategy staff.

The prominent role of aerial photography in the present conflict has brought about increased interest in the development of photographic equipment, including cameras, developing processes, and printing methods.

Center for development of Army Air Forces aerial photographic equipment is the Photographic Laboratory of the Material Command, Wright Field, Ohio. Here, the increasing war needs for greater quantities of specialized photographic equipment are being reflected in developments which may revolutionize the field of photography.

One of the outstanding developments to aerial photography by the Photo Lab is the continuous strip printer. By this new photographic printing mechanism it is possible to turn out 1,000 prints per hour. This development was made in response to increasing demands from battle areas for quick aerial reconnaissance prints.

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AERIAL PHOTOGRAPHY FIRST STEP TO BATTLE



Aces of the Camera

John Boyle

By W. G. Campbell Bosco

BENEDICT Bogeaus, as owner of General Service Studios, has had a better opportunity than most people to study at first hand the complex business of picture making. Through his portals have passed some of the most outstanding talents in Hollywood and some of the screen's biggest hits were created on his lot.

It is not surprising then that Mr. Bogeaus, having decided to become a producer in his own right, should have assembled what looks like a sure-fire combination for his initial effort. The story, "Bridge of San Luis Rey," a tale of ro-

mance and high adventure in 18th century Peru; a stellar cast which includes Akim Tamiroff, Lynn Bari, Louis Calhern, Francis Lederer, Nazimova, etc.; Director Rowland E. Lee, and Ace Cameraman John W. Boyle, A.S.C.

It is a tribute to add to a distinguished career, as well as an indication of his own sagacity, that Mr. Bogeaus should choose to trust his maiden effort to the camera of John Boyle. Perhaps he took the cue from Samuel Bronston who made his bow as a producer with the recently completed "Jack London" on which Mr. Boyle also officiated. A producer needs

to have a lot of confidence in his cameraman. John Boyle inspires confidence. John Boyle's career as a cameraman started in his home town of New Orleans where he owned and operated a newsreel known as the "Item Animated Weekly" in connection with the New Orleans Item. That was in 1913.

"I was everything to that newsreel, besides cameraman," John told us. "The newspaper would tip me off about what was happening and going to happen, and I would dash off and shoot it. Then I came back and did the lab work, shot titles and edited. And," he added with pardonable pride, "all the news up to Sunday evening was on the screen by Monday morning. Thomas Dixon brought me to California in 1915. He was the man who, needing a place to work, went out into the country and bought a lemon grove for ten thousand dollars and built what is now the Fox Studios at Sunset and Western."

Working for Fox, John Boyle trained his lens on Theda Bara and William Farnum and helped make cinematic history. It was during the filming of the "Queen of Sheba," starring Betty Blythe, that Boyle became famous for his chariot races and which led eventually to his assignment to film "Ben Hur."

It was during the filming of these chariot races that Boyle conceived the idea of mounting a Bell and Howell camera over an Akeley. It was a great idea as it turned out, not only providing insurance, and eliminating a lot of retakes by making it possible for the cameraman to get both long shots and close-ups at the same time, but it permitted him from his position in the center of the oval track to follow the entire 360 ft. course of the action without having his view cut off by another camera.

Hollywood was an exciting place in those days. An infant industry was becoming a lusty adolescent. About its name was being woven the legend of glamor and on its streets walked the great names of the entertainment world. But it wasn't exciting enough for John Boyle. He took his camera and joined the first production unit to go to the South Seas. That was in 1921.

They discovered Tahiti cinematically speaking anyway, on that trip and presented it to an admiring world. Which, we suppose, must have had some bearing on the long list of South Sea sagas that have followed.

Perhaps it was that trip that influenced Boyle's amazing career. There seemed to him to be so much of the world and what he had seen of it intrigued him immensely. So he decided to see all of it that opportunity offered.

The next year he went out to the Far East spending seven months in the jungles of the Dutch East Indies making an adventure film among the cannibals. Upon his return Sam Goldwyn sent him to Italy for a year as chief cameraman on "Ben Hur."

Returning from Italy he spent the
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CHRISTMAS, the one great universal day to you and me and to the millions on this big world is but a few days away, and I am wondering if you are planning as much fun at your house as we are at ours. When the holiday is over are you going to have movies and snap shots—PHOTOGRAPHIC RECORDS, of the day's events, of the family, the tree, lights, decorations and above all, the youngsters? Around them Christmas revolves. Their smiles are worth millions as they rush to the tree, catching up packages and gifts, flinging ribbons and wrapping paper—then the hugs and kisses.

Strange how years can slip by before we realize it . . . children can grow up to become men and women . . . get married and bring their children home . . . many will have gone over seas . . . then these photographic records, if you have made them on Christmas day, will become your most prized possessions. They have at our house.

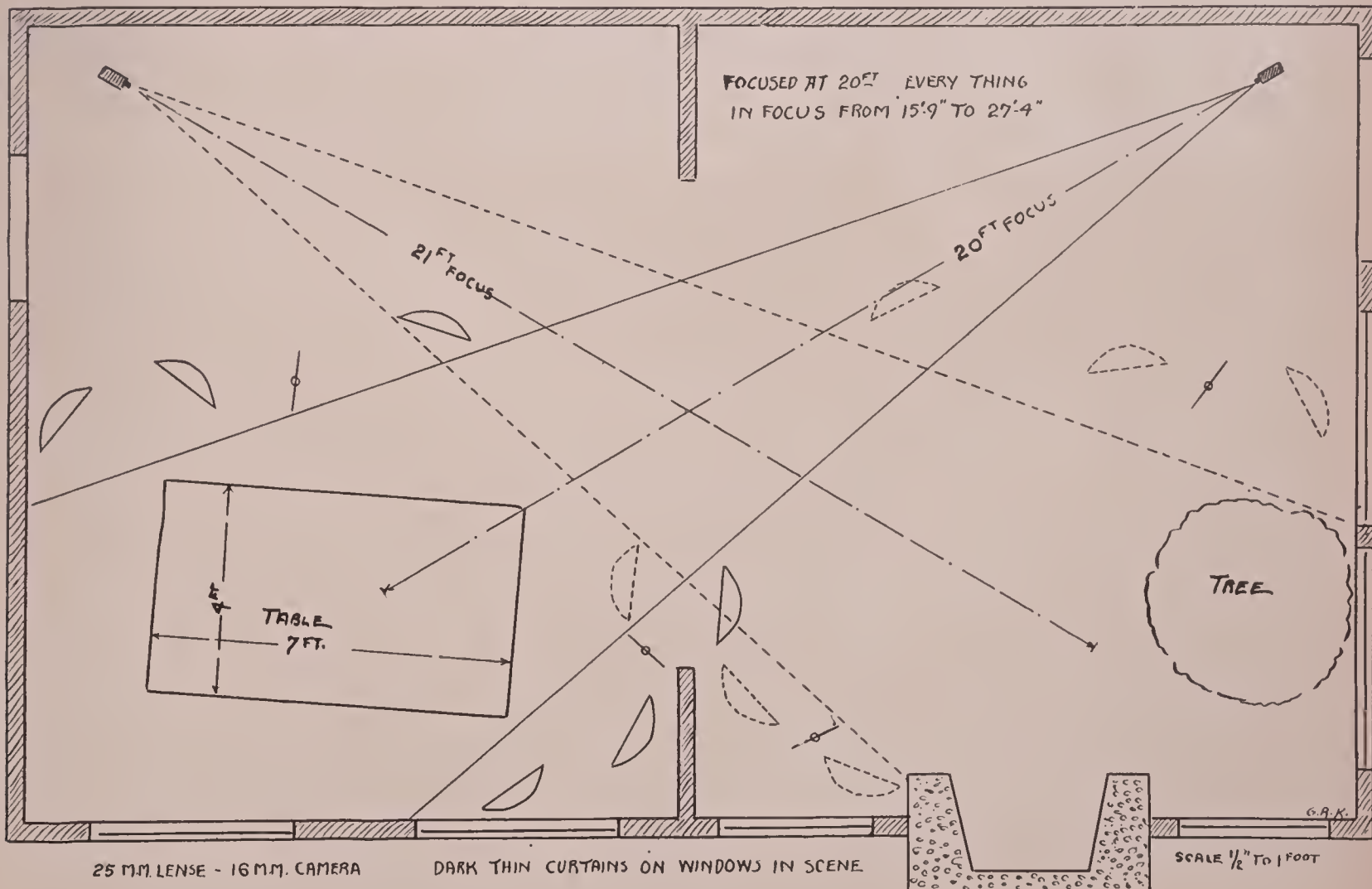
When a youngster I always wondered why Dad and Mother and the grandparents sat around talking and trying to remind each other of things that happened years before. Now I can understand. They had no cameras, they could only talk of memories. Many times I have watched them get out the old family album of faded humorously posed photos, each made under such crude conditions. The folks had to leave the plow standing idle or lay aside the ax and travel many miles in an old wagon or

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Making Christmas Movies

By GLENN R. KERSHNER, A. S. C.



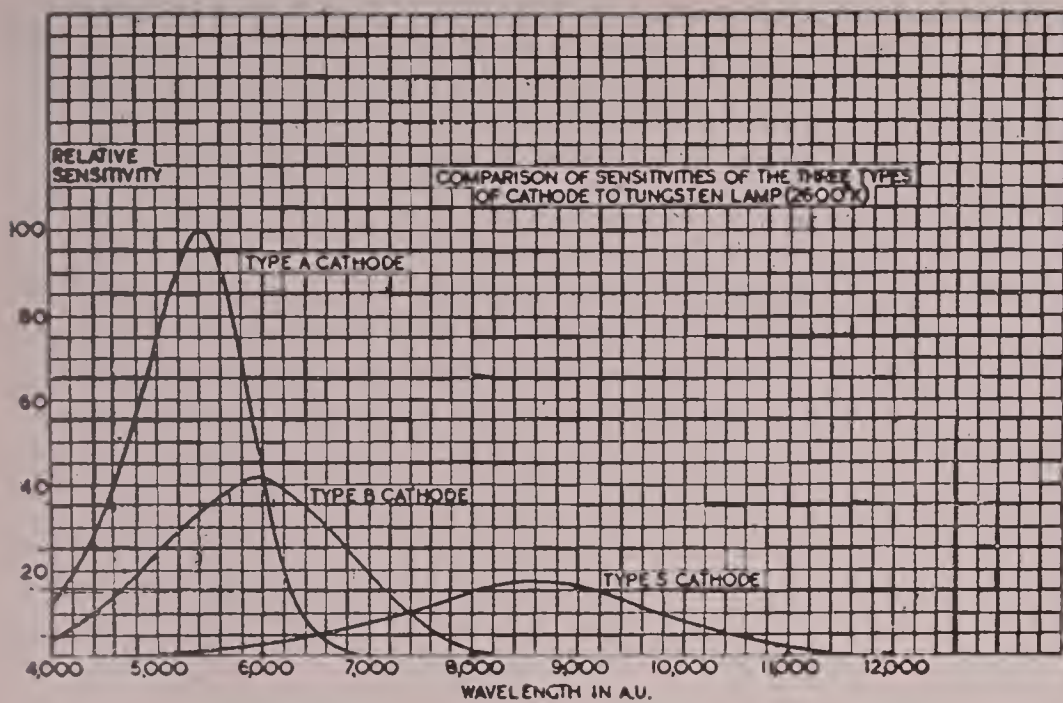


Fig. 1. Colour Sensitivity of new type Photo-Cells.

ELECTRONIC TUBES

By T. M. C. LANCE, A. M. I. R. E.*

ONE of the outcomes of this war, and particularly as a result of our close association with modern American methods, will undoubtedly be the tremendous stimulus to the application of electronic art to ordinary industry and ways of life, to a degree not dreamt of by even the most imaginative engineer—and electronic engineers are on the whole the most imaginative and optimistic crowd.

A rough definition of an electronic tube is a device for the control of energy, generally with the expenditure of a minute amount of control power. Hence the British name of Valve. In addition, the controlled electrical energy can be directly converted into light output from the tube.

The Thyatron

The most astonishing electronic tube meeting this definition is the Thyatron or gas control tube, in some models of which powers of several hundreds of horsepower are controlled with ease and smoothness by the expenditure of only a few watts of energy.

Remote control and gradation of lighting in theatre installations has been brought to a fine art by the use of Thyatron circuits, which are particularly advantageous as all the controls can be brought to one point, and the power regulation is effected without the loss of power as heat in resistances.

* Cinema Television, Ltd., England.

In general the Thyatron is a three electrode valve in which gas or mercury vapor has been introduced after pumping, the characteristics being considerably altered thereby. Very much higher currents will pass in the tube than in a vacuum tube, and the current will either pass at full strength or not at all, according to the potential on the control electrode. The current is only limited by the impedance of the output circuit or the cathode emission and can be of the order of amperes for even very small tubes.

Under D. C. conditions the tube acts as a switch. If a negative potential is applied to the control grid, emission of electrons from the cathode is suppressed and nothing happens, but when the control potential is reduced so that the tube starts conducting the current instantaneously jumps to its maximum value and nothing short of breaking the circuit can stop the current. This effect is used in alarm circuits with thousands of applications.

With A. C. conditions the tube automatically extinguishes on each cycle, and if negative D. C. is applied to the control electrode conduction will take place whenever the proper relative values of grid and anode voltage occur. Conduction takes place for all or part of the half-cycle as desired by slight alteration of the control potential. The point is, that

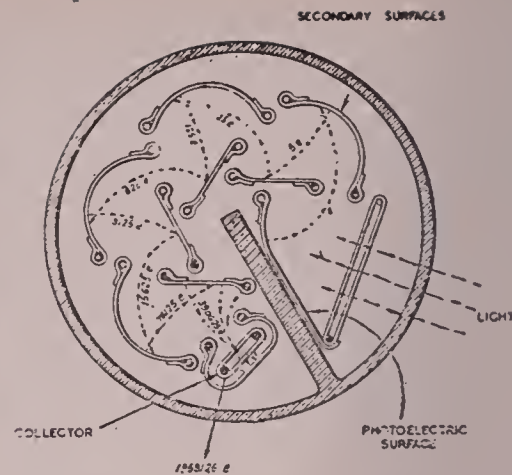


Fig. 2. RCA Electron Multiplier.

the amount of current, and hence the energy handled, is not dependent on the input control power but solely on a potential.

I can picture the control bridge of a large electrically driven ship of say 50,000 H. P., in which the captain himself handles the whole power control from any one of a number of small control boxes, and in addition steers the vessel by altering the ratio of power supplied to the port or starboard motors by turning small radio knobs, one for each motor.

Photo-electric Cells

Turning now from the high-powered electronic tubes to the other end of the scale, we have the photo-electric cell in which the current output never exceeds a few millionth of an ampere, and where the controlling energy is light.

I cannot visualize the time when we shall derive our electrical power by the direct conversion of light energy through the medium of photo-electric cells, although we may utilize the solar radiation to heat our boilers under the control of photo-electric focusing devices to keep the installation directed at the sun.

There seems very little possibility of increasing by a large factor the conversion factor of light energy into current of the photo-electric cell, which is about 20% efficiency, but considerable development has recently been made to the sensitivity of the cells to various color ranges of the incident light, to which I will shortly refer. This efficiency refers to the quantum yield which for a caesium cell is ½%, but for the new antimony cells, at the optimum spectral illumination, this is estimated at 20%.

Most of you are familiar with the caesium photo-cell which has for a long time been used for the reproduction of sound on film. We have all been rather contemptuous of the selenium barrier type cells, which although extremely useful in photometry and exposure meters have, in spite of several attempts, not proved really satisfactory for sound film reproduction on account of the poor frequency characteristic. The manufacturing technique of these cells has recently been modified so that small cells can now be made having very reduced capacities, and it is reported that these are being made in the U. S. A. in thousands since the outbreak of the war.

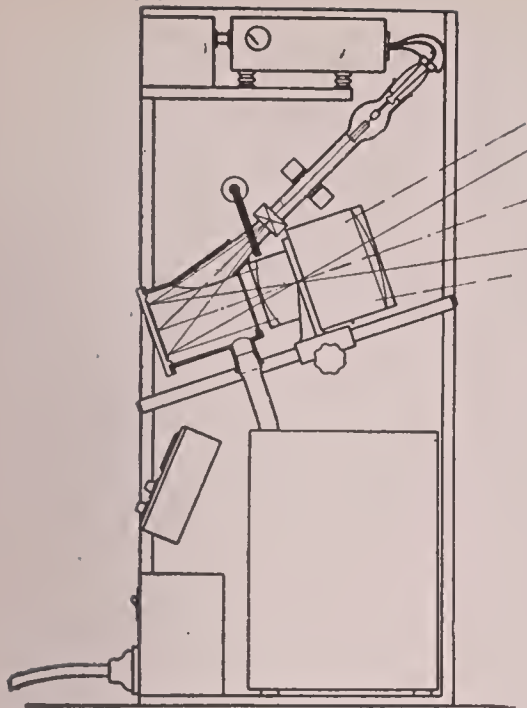


Fig. 3. Baird Projection type Cathode Ray Tube.

The size found satisfactory is 6mm. x 4mm. There are many obvious advantages in the use of this type cell, such as the low impedance of its output which enables long lines to be connected directly to the cell without appreciable loss of characteristic or without the pick up of interference. The immediate future may see the development of sound equipment without a head amplifier on the projector.

Color Sensitivity

Returning again to the vacuum types of cells: we have now produced cells of three different types with respect to spectral or color sensitivity. These differ in the preparation of the light-sensitive cathodes in an interesting manner shown in Fig. 1. It will be seen that for the light of the tungsten lamp the new surfaces, types A and B give considerably increased outputs over the old caesium cell marked S on the diagram, in spite of the fact that the peak is in an unfavorable position with regard to the color output of the lamp.

For daylight application the new A type cells are 10 to 20 times as sensitive as the S because the peak emission of the sun is much nearer the blue end of the spectrum than that of an incandescent lamp. On account of this fact alone these cells have many important war time applications.

The B type approximates very closely to the response of the eye and can be used for photometry of colored light sources and for measurements of the physiological effect of various illuminations on the eye.

Secondary Multiplication

The sensitivity of the photo-cell can be increased by what I regard as dodges, such as gas filling or secondary multiplication of the photo-electric current. We had a good exposition of this latter process by Dr. Van den Bosch at a recent B.K.S. meeting, and the Baird Television Company have made and described multiplier photo-cells for television studio work which have been of great value for

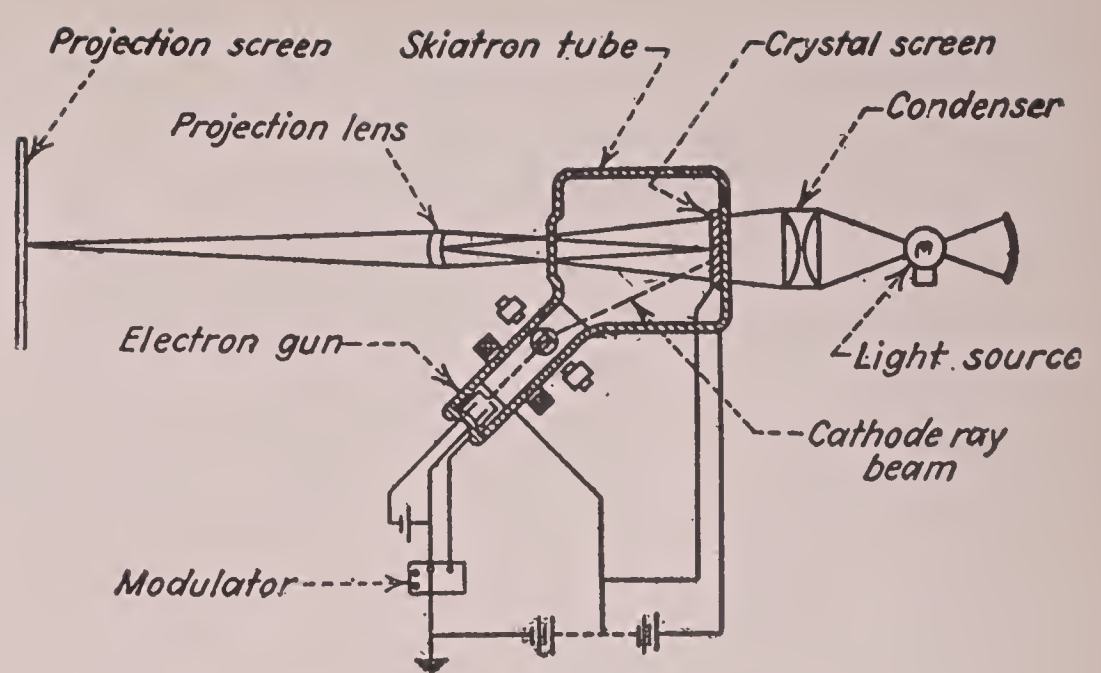


Fig. 4. Principle of Siatron.

color discrimination purposes. More recently they have been used in applications where very feeble illuminations have to be detected. These tubes employed the principle of having several stages of secondary multiplications in one glass vessel, the stages consisting of permeable grids on which the electrons impinge, the increased number of secondary electrons being attracted through the holes in the grid in a manner similar to that described by Dr. Van den Bosch.

The RCA have recently produced a new design of multiplier cell which is shown in Fig. 2. Here the electrons are directed by carefully shaped plates at different potentials so that the streams pass from stage to stage in ever increasing concentrations. These cells are very stable in operation and appear to be mass produced. This design of tube is of particular interest to electronic engineers since the shape of the plates, which would be quite impossible to calculate, was determined experimentally in large scale models in electrolytic troughs.

Thermionic Valves

This method of basing electrode designs on large scale models has been used in the production of beam power valves.

In these the emission of electrons from the cathode, instead of being a random cloud, is directed into definite beams between the control grids and the anode. Although the mutual conductance or slope, stated in terms of milliamperes per volt, is not increased, the efficiency of power valves has been considerably improved by these new designs. The net effect has been to reduce the tail of the characteristics, thereby enabling a longer load line or power output to be used for a given power dissipation in the valve.

Very little has been disclosed recently on the trend of valve design and I find myself unable to indicate future trends.

The need for high slope amplifying valves has always been present, particularly for television receivers, and there

are three general lines of possible development. These are: The space charge tube, which is very critical as regards voltage setting on the electrodes and is variable over age, needing constant adjustment. The conventional tetrode design with extremely small spacing of electrodes and close wound grids, which presents considerable manufacturing difficulties and is usually very microphonic; and the secondary emission tube such as the EE.50 where the slope of the valve section of the tube is increased by the action of a secondary emitting surface probably by a factor of 3 to 5 times.

Cathode Ray Tubes

The last class of energy convertors I wish to refer to is the cathode ray tube, where electrical energy is converted directly and instantaneously into light.

Unfortunately the dictates of war closed the development of television and in this country terminated the very interesting progress being made with high power cathode ray tubes for kinema television.

The Baird Company had operated in the laboratory a glass-metal projection tube which was continuously evacuated in operation, in which an illumination was obtained giving a brightness of 5 foot candles on a screen 15x20 feet. This tube produced an image by the electron bombardment of a fluorescent screen and research was progressing along lines of improving the fluorescent powder to control its color and increase the brightness over several hundred hour's life. The images produced on the fluorescent screen were directly projected onto the screen by lenses of large aperture.

The Diavisor Principle

It was always felt that another line of attack for kinema projected pictures would be by means of a light control in which the electronic device acted as a variable medium interposed in a beam of light, in the same way as the slide or

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RECENT DEVELOPMENTS IN SOUND-TRACKS

By E. M. HONAN* and C. R. KEITH**

THE considerable number of types of sound-tracks that have come into use in the past few years make it desirable to agree upon standard dimensions and nomenclature in order to avoid confusion. Steps in this direction have been taken with the publication of "Dimensional Standards for Motion Picture Apparatus" (S.M.P.E. Journal, November, 1934), and in a Bulletin of the Research Council of the Academy of Motion Picture Arts and Sciences, "Standard Nomenclature for Release Print Sound-Tracks" (November, 1937).

However, in the several years since the publication of these standards, the number of types of sound-tracks in common use has considerably increased. It is, therefore, the purpose of this paper to publish illustrations and brief descriptions of the most commonly used tracks and also some experimental tracks in order that suitable dimensions and nomenclature may be agreed upon and adopted as standards.

The accompanying illustrations show twenty types of sound-tracks and combinations of tracks used on 35mm. film. The illustrations are grouped according to the type of track and without regard to the relative importance or extent of use. The description of each track is intended primarily for identification, since a discussion of the relative merits of the various types would require a very extensive paper. However, references are given to previous publications where more complete descriptions of the tracks may be found. All the illustrations show positive prints.

The first group of tracks are of 100-mil variable-density type. It will be noted that "100-mil" and "200-mil" refer to the width of film allotted to one or more tracks. Descriptions of the "squeeze-track" and "push-pull" features will be found in the references associated with tracks of these types. The use of noise-reduction in variable-density recording may be observed on the film as an increase in average density in those portions having low modulation, although this is not apparent in the small sections shown in the accompanying illustrations.

(a) *Single Variable-Density (100-mil).*—This is a standard release track and is the same as Fig. 1 of the Academy Bulletin.^{1,2,3}

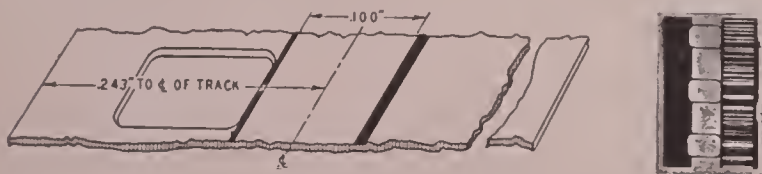


Fig. A

(b) *Single Variable-Density Squeeze.*—This is the same as track a except that the width is varied to increase the volume range. It is the same as Fig. 2 of the Academy Bulletin. The width may be varied by bringing the two outer margins closer together, as shown; by keeping the outer margins fixed and inserting a black centerline of varying width, or by a combination of the two previous methods. Since the maximum track width is 76 mils, the amount of squeeze illustrated represents a reduction of sound level of only about 3 or 4 db.^{4,5}

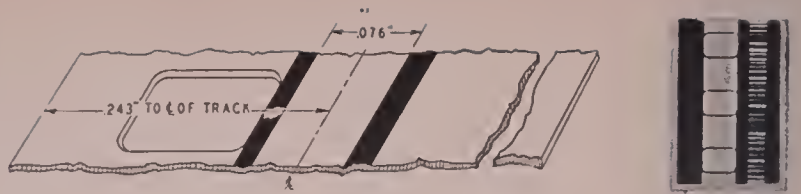


Fig. B

(c) *Push-Pull Variable Density.*—The two tracks are similar to a but are each 47.5 mils wide and 180° out of phase. This is the same as figure 7 of the Academy Bulletin.⁶

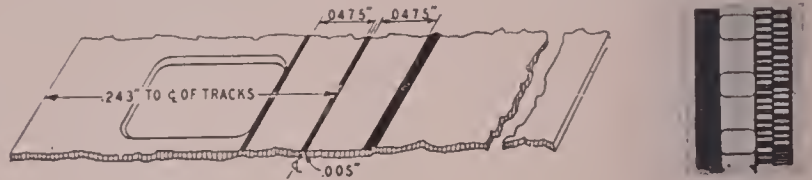


Fig. C

(d) *Push-Pull Variable-Density Squeeze.*—This is the application of squeeze-track methods to the push-pull track, c. It is the same as Fig. 8 of the Academy Bulletin.⁵

The next group are of the 100-mil variable-area type. Each is "Class A" unless otherwise noted. (See track h.)

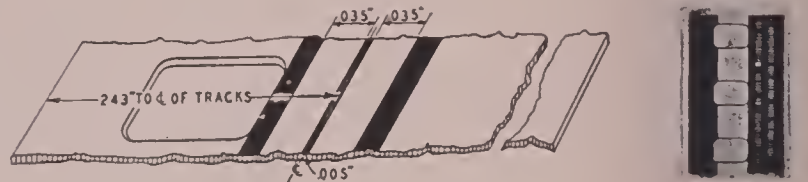


Fig. D

(e) *Unilateral Variable-Area.*—Noise-reduction is indicated by the change in width of the right-hand black margin. It is the same as Fig. 4 of the Academy Bulletin.^{7,8,9,10,11}

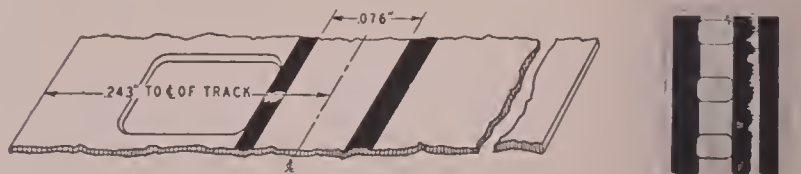


Fig. E

(f) *Bilateral Variable-Area.*—Noise-reduction is indicated by the change in average width of the clear center portion of the track. It is the same as Fig. 5 of the Academy Bulletin.^{11,12}

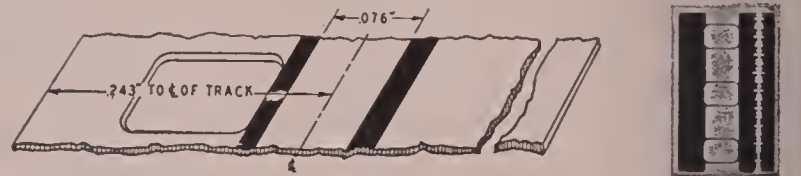


Fig. F

(g) *Duplex-Variable-Area.*—Noise-reduction in this case is indicated by a variation of the distance between the two black borders. It is the same as Fig. 6 of the Academy Bulletin.¹³

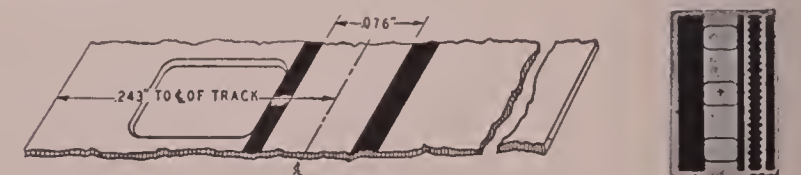


Fig. G

(Continued on Page 442)

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EASTMAN FILMS

Recent Developments In Sound Tracks

(Continued from Page 440)

(h) *Push-Pull Variable-Area, Class A.*—The term "Class A" means that each half of the push-pull record is complete and may be separately reproduced with comparatively little distortion. In the example shown each half is a unilateral track and the out-of-phase relation is shown by the fact that a dark projection on one side is always exactly opposite a white indentation on the other side. The same effect is obtained if each half of the push-pull track is recorded as a bilateral variable-area track. Noise-reduction is indicated by a variation in the distance between the two black borders. This is the same as Fig. 9 of the Academy Bulletin.¹³

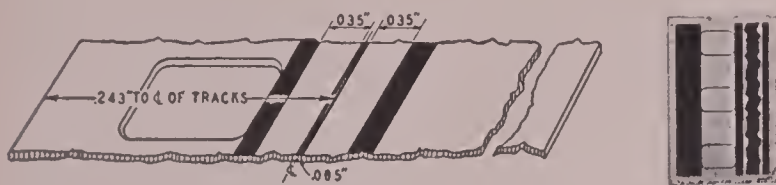


Fig. H

(i) *Push-Pull Variable-Area, Class B.*—In this case one-half of the push-pull record represents only the positive half of the original wave and the other the negative half, so that the two halves must be reproduced with equal amplitudes and in opposite phase in order to avoid distortion. Since the print is opaque except where modulated, the usual bias type of noise-reduction is not required. The individual tracks may be bilateral, as shown in the illustration, or they may be unilateral.^{11,12,13}

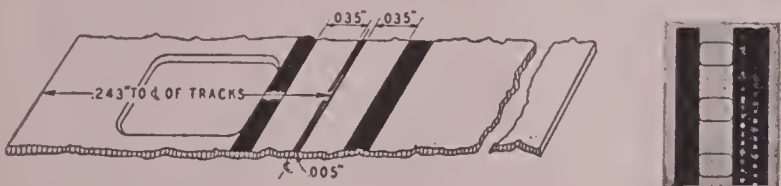


Fig. I

(j) *Push-Pull Variable-Area, Class A-B.*—In this type of track low modulation is recorded as Class A (each track records both halves of the original wave) but as the modulation is increased it is changed to Class B by recording the additional amplitude with the positive waves on one track and the negative waves on the other. Noise-reduction is not used in this type of sound-track.¹⁴

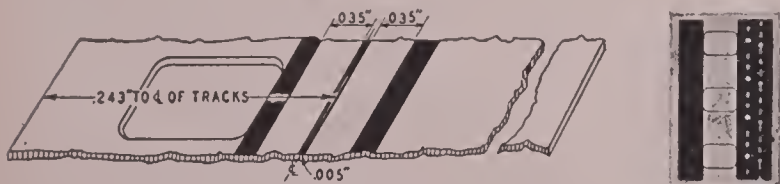


Fig. J

The next group of tracks occupy a width of 200 mils and are consequently not used on present standard combined sound and picture prints.

(k) *200-Mil Variable-Density.*—This is the push-pull combination of two 100-mil variable-density tracks.⁶

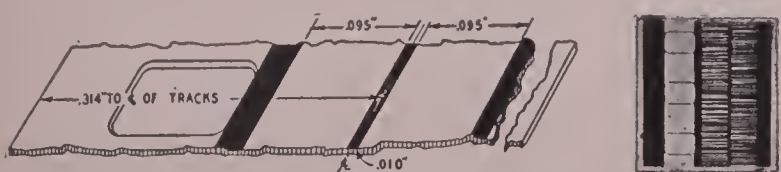


Fig. K

(l) *200-Mil Variable-Area Center Shutter.*—This consists of two 100-mil bilateral Class A variable-area tracks in push-pull relation. Noise-reduction is accomplished by blocking out a portion in the center of each track.¹⁵

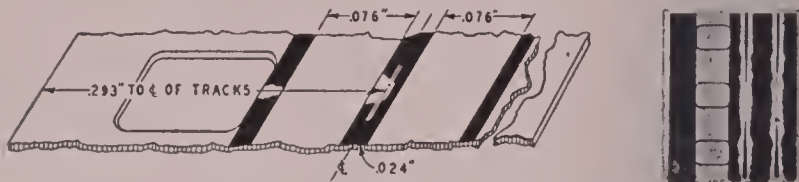


Fig. L

Each of the remaining combinations of tracks includes a "control-track" together with one or more sound-tracks. The control-track is generally used to vary the sound level in the reproducing system in such a manner as to increase the volume range or the signal-to-noise ratio or both. It may be either amplitude- or frequency-modulated, and may be distinguished in the illustrations by its resemblance to a constant-frequency record. The word "comprex" refers to a system in which automatic volume compression and expansion are used.

(m) *100-Mil Variable-Density Comprex.*—Both sound and control-tracks are 50 mils wide and occupy the space normally used for a standard single 100-mil track. Track dimensions are the same as for track c.¹⁶

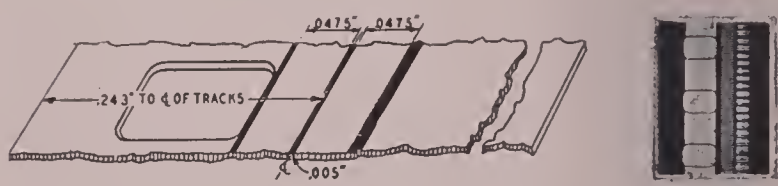


Fig. M

(n) *100-Mil Unilateral Variable-Area Comprex.*—This is a combination of two half-width variable-area tracks which may be scanned by the same equipment as is used for track m.¹⁶

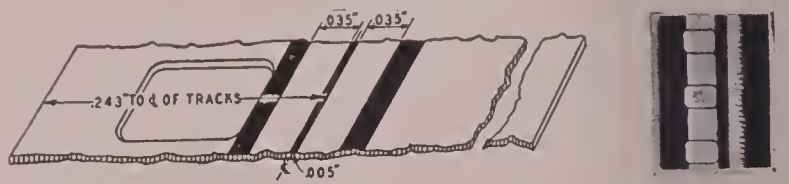


Fig. N

(o) *200-Mil Bilateral Variable-Area Comprex.*—This track is intended for the same type of sound system as tracks m and n but utilizes a width of 200 mils.¹⁶

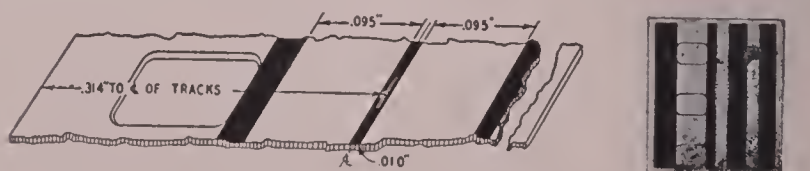


Fig. O

(Continued on Page 451)

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IT'S FUN TO DEVELOP AND PRINT YOUR MOVIES

By JAMES R. OSWALD

THE ardent home movie maker like his co-hobbyist, the still photographer, should not consider himself a veteran in the field until he has tried a hand at developing his own pictures. A little knowledge of what goes on between the time the exposed film leaves the camera and is threaded into the projector, ready to show, does nobody any harm.

"But," you say, "Movie film is much more difficult to develop than ordinary roll film, isn't it? Besides, why should an amateur take the time and trouble and run the risk of doing his own developing, when the processing cost is included in the price of the film, which will be finished by the laboratory without further charge?"

The answer to the first question is definitely, no. Fundamentally, the dark-room procedure for handling movies is quite the same as with still pictures, and anyone already acquainted with the principles of developing will have little difficulty in this respect. Because movie film is necessarily so much longer than roll film it is not advisable to try to handle long lengths though, unless a special rack is made or purchased, capable of accommodating more film. There are many such fine outfits on the market at reasonable prices, but best wait until you see how much home processing appeals to you before investing in one of these. I WILL say at this time that the job requires patience!

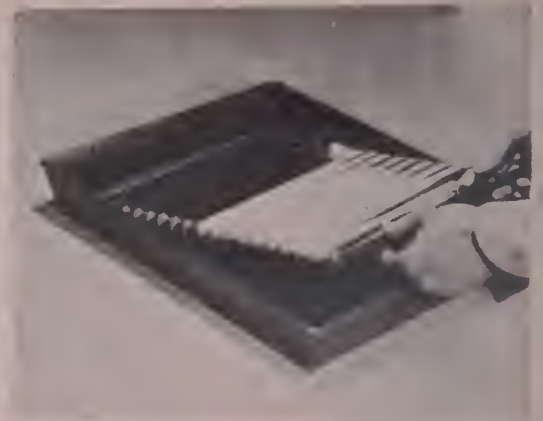
As for the reason for an amateur to take the time and trouble and run the risk of doing his own developing, when the processing cost is included in the price of the film, which will be finished by the laboratory without further charge . . . there IS a point there! All I can say in answer to THIS query is that home processing is not practical from such a viewpoint. This article is intended for the curious, serious-minded person, who likes to learn what makes things "tick," especially so far as his movie making hobby is concerned. Other readers, not so inclined, will do well to stop reading right here, as it is a sheer waste of time to continue any farther. There are many discouragements and disappointments in home processing and, as stated before, it requires almost unlimited patience, to do the work successfully. It is a job preferably for the advanced amateur, bent on seeing the process through successfully. Any one taking the time and effort to do this will be amply rewarded by the pleasure and satisfaction derived from knowing that the movies he projected are the result of his own work, ALL THE WAY THROUGH.

Now to continue with the method of procedure. As mentioned in the preceding paragraph, it is false economy to home-process the regular reversal film which is handled by the film manufacturer's laboratory. As most everyone knows, this type of film is first developed to a negative, comparable to snapshot negative, and then REVERSED to a positive print for projection . . . hence the name REVERSAL film. This method is the most popular for the home movie fan because the same film is eventually run through the projector as was run through the camera. Needless to say, this reduces the cost because only half the footage is required as would be were the print made on a different film, comparable to a snapshot print on paper.

If many duplicates are to be made, however, the negative-positive (2 films) system has the advantage. In this method the negative is run through a printing machine in contact with an unexposed positive film, thereby making a print for projection. This positive film is very cheap, compared to the regular type, and is extremely fine grained and has high contrast. For these reasons it is ideally suited for home experimenting, using a camera or projector as the printer, which we shall discuss later. All theatrical releases are prints from a master negative, as many copies must be distributed throughout the country. The master negative is afterwards safely stored away in the studio for future use. Because of the intensely complicated manner in which Kodachrome must be processed, it is absolutely out of the question to even consider carrying on this procedure at home, even if one has the ambition to do so.

As referred to a short while ago, your own movie camera, or projector, will serve as a printer for making duplicate copies of favorite scenes. I prefer to use the CAMERA, since it is already light-tight and hence only the loading operation need be carried on in the dark-room. The projector has the advantage of accommodating longer lengths of film, but it is wiser and less costly, to conduct experiments on a smaller scale anyway, at least until the technique is mastered. Also mentioned before was the fact that POSITIVE film is ideally suited for home experimenting. Although there are many other fine types of moderately priced films on the market equally suitable for home-processing, which includes regular NEGATIVE stock, the aforementioned POSITIVE type film remains the lowest in price, costing approximately one cent

(Continued on Page 446)



Top, a flat developing rack fits in standard size tray, and holds 25 feet of 16 or double 8mm. film. Next, the film is wound spirally around the rack. Adjoining film loops should be kept from overlapping by pins or grooves. Third from top: a contact print is made by threading the two films in the camera, emulsion to emulsion, with the shiny side of the raw film facing back of camera. Bottom, making titles by straight development.



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It's Fun to Develop Movies

(Continued from Page 444)

per foot in 16mm. or double 8mm. size. The economy angle should not be overlooked, because there WILL be waste. Although positive film is intended to be developed STRAIGHT, it may be reversed, the practice of which we will take up later. The straight developing method is the simpler, and therefore the better to begin with.

Assuming then, that a favorite scene, but one not TOO valuable to be used in experimenting, has been selected for duplicating, we will proceed with the printing. It is taken for granted that the original film to be duplicated was properly exposed in the first place, thus it will act as a sort of guide for our future efforts in this field. In fact from now on it will be found very wise, indeed, to keep an accurate written statistical record of all variables . . . film type . . . source of illumination . . . distance from camera, etc. All these things are best determined by carefully conducted tests, since conditions vary widely, and hence no definite rules or formulas can be given. Once this set of standards is correctly established, though, it will serve as a measure upon which to base new trials in time to come.

The first operation in the dark-room is loading the film. Bulk film is not daylight loading as is the reversal type, and therefore must only be opened in the dark-room. Since it is not spooled, either, it should be wound on an empty projection reel, for convenience sake. (Positive film doesn't belong to the panchromatic group, which means it can be safely handled in the comfort of a regular red safe-light . . . another of its many advantages). Wind the scene to be duplicated, together with the unexposed bulk film on a reel, emulsion to emulsion, in such a way that the shiny side of the ORIGINAL will be facing the camera lens, leaving the shiny side of the RAW film to face the back of the camera. The next step which is threading, is done in the usual manner, making doubly certain that the sprocket teeth engage BOTH films. The customary loops, before and after the film enters the aperture gate, should be a trifle larger than normally. The exposure button is then pressed a few times before the camera is closed, to see that everything is running properly.

It is safe now to light the white light, or to bring the camera outside, if the exposure is to be made by daylight. Artificial light is preferred, however, as it is always uniform, which simplifies matters in that respect.

In order to have at least some idea of how to start, I will set down some figures to go by, based on my own personal experiences. This information, mind you, is only approximate and should merely be used as a starting point from which to conduct your own experiments.

With the camera running at normal speed, and held 6 to 8 inches from the light source, I think your results will be quite satisfactory. For illumination, I use a 7½ or 10 watt bulb placed in a lamphouse removed from an old enlarger. In front of the bulb is an opal diffusing glass, which tends to spread the light more evenly. My camera has a removable lens which I take off before making the exposure. Otherwise, I would suggest opening the lens wide. If the exposure is to be made by daylight, point the camera towards the blank sky, not directly into the sun.

Should you desire to use the projector instead of the camera as a printer, it will be necessary to employ a somewhat different lighting technique, else the entire film will become fogged. Probably the best method in which to adapt the projector for this work is to construct some sort of a small, light-tight box in which to house the printing bulb. The front side of this box should be funnel shaped . . . in fact a regular tin funnel can be taped on with Scotch tape. The projection lens is then removed, and the narrow neck of the "funnel box" inserted in its place. This neck should be approximately the same diameter as the projection lens, if possible. Although the printing light will now only reach the portion of the film running through the aperture gate, it must be remembered that the rest of the film is not enclosed, as in the case of the camera, and hence the entire operation must be carried on in the dark-room. The same precautions in threading should be taken as before with the camera.

After the exposure has been made, the film is removed and immersed in a tray containing the developing solution. Regular D-72 developer, with which most of us are already familiar, can be used at the manufacturer's prescribed time and temperature. For higher contrast, especially when titles are to be reproduced, D-11 is advised. The film is then rinsed in a plain water or short-stop bath and thence in the hypo solution. When completely "fixed" it is placed in the final wash water, where it remains until all traces of hypo have been removed. It is very important that the film be kept agitated throughout the entire process. The final wash should be in running water, if at all possible. After washing, the film is hung up to dry in the usual manner, or if exceedingly long, placed on a drying rack, which we shall discuss shortly.

When totally dry the film should resemble a regular snapshot negative of normal density. If it doesn't, there is no use going any farther until it is remade. (An exceedingly dense negative indicates over-exposure . . . a light, washed out one, under-exposure). With the attaining of a perfect negative, the projection print is made in exactly the same way, by repeating the entire process.

The reversal method does away with this repeat step, since the same film that was once the negative, is made into the positive projection print. A somewhat

different developing procedure must be followed, however, which is considerably more painstaking. After the film leaves the developer, instead of placing it into the fixing solution as is customary, it is first transferred to a bleaching bath which leaves a positive image but dissolves away the image already developed. This latent positive image, still being light sensitive, is re-exposed to the light of a Mazda bulb and then put back into the developer, thereby causing the latent positive image to become visible. From here the film is placed in the plain water or short-stop bath and thence in the hypo solution, as before.

I referred earlier to developing equipment capable of handling longer lengths of film. For doing this, some sort of a rack is necessary upon which the film can be wound, taking up a minimum amount of space and providing easier manipulation. There are several such racks on the market or, if you wish, you can construct one of your own. The simplest one of these is flat and rectangular in shape, around which the film is wound spirally, and held in place by grooves or guide pins. Resembling a picture frame, it can be made of wood, to any desired dimensions. A rack 11 x 14 inches will accommodate up to 25 feet of 16 mm. or double 8mm. film, and is convenient in that it will fit a standard size developing tray. The wood must be given a protective coating of chemically resistant lacquer.

Another type rack is round and resembles a drum. This kind may also be constructed of wood, making only the skeleton framework of a drum, and a support upon which it can revolve, out of wood strips. The film, as before, is wound around the rack in spiral fashion, with guides to keep the adjoining loops from overlapping. A rack of this sort, because of its large circumference, will accommodate much longer lengths of film than the previously described, flat type rack. The revolving drum rack is usually made to take full 50 or 100 foot rolls of 16 or double 8mm. film.

Which of the two kinds of racks is the better, is a subject for debate. It is argued that the flat type uses a minimum of solutions, and the film being completely submerged, doesn't run the risk of aerial fog. The drum rack on the other hand, in addition to accommodating long lengths of film, provides easy agitation because of its rotating feature. For this reason, too, it is much to be preferred for reversal processing, since more uniform exposure is possible when the film is subjected to the light for the second printing, which brings out the latent positive image.

No matter which type rack is used, the film should always be wound EMULSION SIDE OUT, to prevent scratching those parts that come in contact with the framework. Because film expands somewhat when wet, some arrangement ought also be made to prevent its slackening

(Continued on Page 453)

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AMONG THE MOVIE CLUBS

Hirst Talks at Philadelphia

F. M. HIRST, who contributes many important articles to the *AMERICAN CINEMATOGRAPHER*, was the chief speaker at the November meeting of the Philadelphia Cinema Club. He spoke on "In Search of Beauty."

Mr. Hirst pointed out that the creation of a beautiful picture depends chiefly on the selection of material, the use of imagination and the feeling for design, and used sketches to illustrate the principles of composition. He then screened one of his own films, "Gloucester."

Utah Cine Arts Club

TWO 8 mm. Kodachrome films and two 16 mm. Kodachromes were the features of the November meeting of the Utah Cine Arts Club, Salt Lake City. Outstanding were "Cougar Hunt," by M. W. Robbins; "Skiing," by Norman Schultz, and "Snow White and Rose Red," by Theo. M. Merrill.

Members of the club are beginning to get excited over the club's 1943 Awards, and members have been urged to hurry their entries.

Long Beach Club

"IN the Beginning," noted film by Fred C. Ells, featured the November 3rd meeting of the Long Beach Cinema Club. This film was given an award by Movie Makers as one of the ten best pictures of 1943. Incidentally, burglars broke into the home of Mr. Ells recently and stole his entire movie equipment, amounting to something like \$1500 worth of equipment he cannot replace because of wartime restrictions.

Minneapolis Cine Club

MEMBERS of the Minneapolis Cine Club are concentrating their all on the annual holiday meeting which will be held at the Leanington Hotel on the evening of December 14. There will be a turkey dinner, followed by showing of films and other entertainment in the hotel ballroom. Sounds like a good party is in the offing.

Syracusers Compare Meters

INTERESTING idea highlighted the November 16th meeting of the Syracuse Movie Makers. Members all brought their light meters and had a session of comparing meters, data, etc. Program of films followed the meter session.

Saint Louis Club Sees America

ONE of Joe Epstein's "Seeing America" films highlighted the November meeting of the Saint Louis Amateur Motion Club. It was a picture covering the Black Hills in South Dakota, Yellowstone National Park, Estes Park and Seattle, Washington. The film is on Kodachrome and made a decided hit with the members.

Also on the program was a film, "Let's Go Fishing," by Gordon R. Rader, which was a beautiful example of Kodachrome photography and scenic beauty. Third picture on the program was a war film showing the bombing of Pearl Harbor, the Battle for Egypt and many other authentic war scenes.

Metropolitan Club

FOUR films featured the November meeting of the Metropolitan Motion Picture Club. They were: "The Pageant Bubble," by Leo Heffernan; "Riches From the Sea," by T. J. Courtney; "Food For All," by Helen Loeffler, and "Desert Life," by Henry Hird of Ridge-wood.

Quality of the films was exceptional. "Desert Life" was classed by many as one of the best 16 mm. films of 1941. "The Pageant Bubble" was a film about the Atlantic City bathing beauties—but was in black and white.

Brooklyn Club Sees Four

FOUR films, secured through the film service of the *AMERICAN CINEMATOGRAPHER*, were shown at the two November meetings of the Brooklyn Amateur Cine Club. They were: "New Horizons," "Garden Life," "The Brook," and "Santa Visits Elaine." Last named picture contained much trick photography.

Rations Disturb Frisco Club

DUE to ration difficulties the monthly pre-meeting dinners of the Cinema Club of San Francisco have had to be moved from the Women's City Club. The November dinner was held at the Stewart Hotel. Highlighting the after-dinner program were two pictures of Mexico, filmed by Rodgers Peal. One showed Mexican ruins, the other a bull fight . . . speaking of ration troubles!

L. A. 8 mm. Elect Officers

FOLLOWING officers were elected at the November meeting of the Los Angeles 8 mm. Club: Milton R. Armstrong, President; John N. Elliott, Vice-President; W. D. Garlock, Treasurer; Merwyn Gill, Secretary. Five films were shown at the conclusion of the election.

Film Review

Review of "The Adventures of Lightning Zeall, or the Dope Wins a Contest." 400 ft. Silent with narration on records. Kodachrome.

This was an attempt by the Chicago Cinema Club members to make a group film. The story and continuity was of the type that is undoubtedly of interest to the particular group who participated in filming it, but has no general appeal to outsiders. Consequently, we will only comment on the photographic treatment.

The credit titles indicate that several members were responsible for the photography and other technicalities, which in general were well handled. Most of the scenes were interiors in which the exposure was good, and surprisingly uniform, considering that various club cameramen displayed their skill. The opening titles were hand lettered, legible and well centered. Camera angles were carefully chosen, and effective use was made of lap-dissolves and fades.

Three phonograph records were supplied, intended to accompany the film with music, and narration. The usual difficulties were experienced in reviewing, trying to synchronize the projector speed with the turntable. Playing a recorded narration and dialogue in synchronization with a film is unsatisfactory, unless considerable time can be spent viewing the film and hearing the records repeatedly. Probably the group making such a production can obtain good results, after frequent rehearsals, but someone else using different equipment and unfamiliar with the records and film, finds accurate synchronization next to impossible.

A group production such as this one, would be of use to more club members, if it was made without records, and well titled. Probably, only a few members would be able to operate the records in synchronization, whereas a good titled film could be shown by anyone. The process of wording, making and cutting in properly plenty of titles is a splendid group undertaking, from which experience any member participating can derive considerable benefit, and learn how to turn out well titled films of his own.

EDWARD PYLE, JR.



Here are the bombs . . .

Here is an enemy cruiser "safe" behind her torpedo net . . .

Official Photographs, U. S. Army Air Forces

ON TARGET

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For our Army and Navy, Kodak also makes 29 of the most complex types of optical systems for fire control—the sighting of guns—including the famous height finder for anti-aircraft.

GERMANY has enjoyed a reputation for world leadership in lens making. But—as so often happens—reputation outlived performance.

Well before Pearl Harbor, Kodak optical research was developing lenses superior to any ever made by anybody, anywhere. A major advance has been the perfecting for new, finer cameras of a revolutionary new optical glass which

gave lenses greater speed—definition . . . or could more than double the "field of view" of a fire control periscope.

This glass was immediately incorporated in instruments for fire control . . .

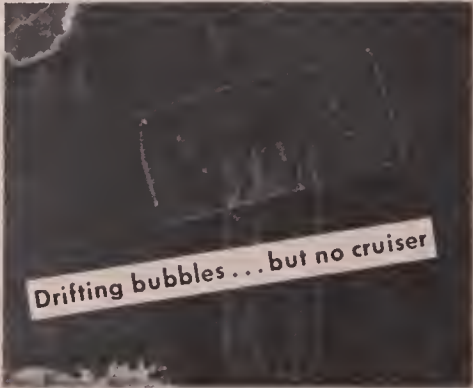
Effective fire power—hits, not "tries"—is the result of sighting through a series of lenses . . . an optical system . . . which locates, magnifies, and "ranges on" the target.

Army Ordnance experts now report: "We have examined captured German sights and periscopes and, element for element, we are turning out better material."

The effectiveness of American fire power is making history . . . Eastman Kodak Company, Rochester, N. Y.

REMEMBER CORREGIDOR? . . . and the last words over their radio—"Just made broadcast to arrange for surrender . . . everyone is bawling like a baby . . . I know how a mouse feels. Caught in a trap waiting for guys to come along to finish it up." Corregidor is a stern example to us at home. BUY MORE WAR BONDS.

Serving human progress through photography



Snow Photography

(Continued from Page 433)

scene of action. The only filter I have been able to neutralize such a glare is the Pola Screen set at ninety degrees to the sun. Here again, the sky! It will be overcorrected. It is best to include as little of the sky as the composition of the scene will permit.

There are many combinations of filters that can be used very successfully by the photographer of experience working in the snow country. The combinations are almost endless. Like artists who paint pictures, the instinct, the intuition, the inspiration and, the knowledge and experience of one man is not that of any other. For example: In snow where there is high contrast, beautiful results can be obtained with several filters, depending upon the effect desired. If the desire is to soften the contrast of white snow and dark shadows, it can be effected with a combination of the light red 23A in combination with the 56 green, computing and combination factor of 7. If the effect is to be that of a night scene, stop down an additional 1½ stops. For contrast, the 29F of the dark red end of the spectrum with its overall daylight transmission of 7 percent, factor 10, stopped down another 1½ stops will render a beautiful night effect.

Snow is so very deceptive at times. I do most of the aerial photography required by our studio and I recall one time when I was covering an assignment

to get some scenes of flying through clouds. I was sitting beside the pilot and suggested that "Just over there floated a beautiful cloud formation." The pilot smiled and asked if I'd like to get a closeup, and I nodded "yes." Upon getting closer to what had appeared as a beautiful cloud bank I found it to be a snow covered mountain. Snow covered mountains that project up through a sea of clouds have a very close resemblance to the white clouds they are engulfed in when viewed from a distance at high altitude.

There are moments during the shortest winter days in the snow latitudes when beautiful effects can be obtained with various filters during the morning and afternoon half hour period of cross light with its long shadows resting over smooth and rough snow or casting shadows on the surface of quiet pools with ice-fringed edges. Here a K3 filter will render water of a dark texture with transparent shadows crossing the snow. A yellow-red filter will render darker water and soft shadows of the snow contours. Beautiful effects can be obtained via this method where frozen-crested snow has a broken surface glinting the sunlight.

This matter of filterage when working in the snow latitudes is strictly a technique whereby an individual endeavors to manifest his own interpretation of the scene spread out before him, to express his personal impression and, is not a rule to be followed hard and fast.

Whatever the result obtained depends upon the knowledge applied to the individual filter selection for the effect he is trying to put into the photographic quality of his interpretation.

The rule of filterage is not one of "thumb" but one of expression dependent upon the artistic imaginative sense of the individual photographer, the creativeness of his mental ability, achieved through a long experience of observation and extensive study of the problems pertaining to his profession.

Many times, filters can be dispensed with. The color corrective quality of the film emulsion of the standard brands will compensate adequately for the non-use of filters by rendering a truer expression than could have been obtained through the use of any filter. This result has been manifested many times when working in wet, thawing, slush-snow that is not so glaring white because it is old snow that has accumulated a dust covering since its formation; delicate reflections of sparkling light is glinted from the many little trickles of water given off by the melting snow and the darker patches of wet earth.

For me, the winter season in the snow country offers more opportunities for "mood" pictures than any other time of the year. Low hanging snow clouds can add a subtle mystery to a landscape, or seascape, that will help lift the dramatic effect of the story into better suspense. Ground fog, early morning fog, low-flying seud-mists are wonderful creators of "chills" and dramatic effect.

The snickery voice yawned an interruption. "It's a good story Jack, but it's time to eat. After all, I guess Africa isn't so hot."

NOTE: As one of the ace directors of photography and chief ariel cinematographer with the Metro-Goldwyn-Mayer Studios, Jack Smith has made scenes for feature productions in almost every country around the earth besides adding to his credit nearly 20,000 hours of service in the air. Editor.

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Aerial Photography First Step To Battle

(Continued from Page 435)

Two of the major projects now under development at the Photo Laboratory are night photography and color photography. By use of specialized night equipment including "canned daylight" Army Air Forces now take aerial photographs from 30,000 feet at night. Increasing demands for color photographs useful in camouflage detection have resulted in a concentrated development of color photographic equipment. One of the latest projects developed by photographic manufacturers in collaboration with the Photo Laboratory makes possible color aerial photographs taken at night.

Through the work at the Wright Field Aerial Photographic Laboratory the enemy is finding it increasingly difficult to keep secrets from the Army Air Forces aerial photographers whose pictures may frequently save lives and mean the difference between victory and defeat on many battle fronts.

Recent Developments In Sound Tracks

(Continued from Page 442)

(p) *Three-Channel Stereophonic Complex.*—This arrangement consists of three 100-mil bilateral variable-area sound-tracks, one for each of the three stereophonic channels, and a fourth 100-mil bilateral variable-area track on which are recorded the compression and expansion controls for all three channels.^{16, 17, 18}

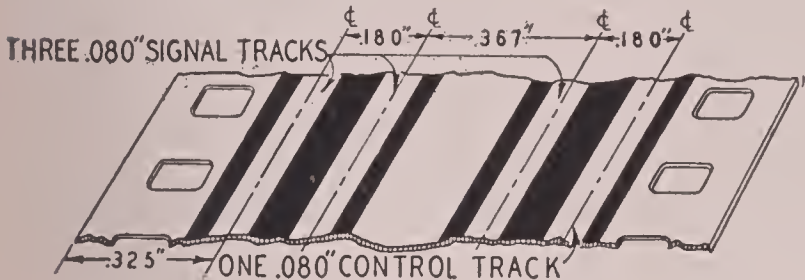


Fig. P

(q) *100-Mil Variable-Density, 5-Mil Control.*—This consists of a single variable-density track having the dimensions of a standard 100-mil release print track, with the addition of a 5-mil-wide control-track located in the black region between sound-track and picture. In practice the control-track is variable-density, frequency-modulated. The control-track does not interfere with the playing of a film on a reproducer not equipped for control-track reproduction.¹⁹

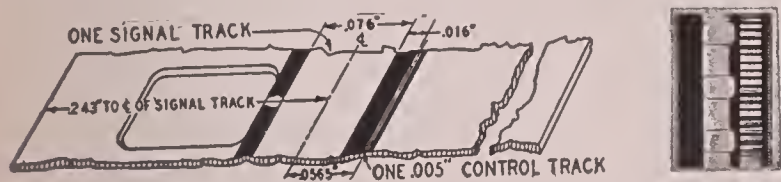


Fig. Q

(r) *100-Mil Variable-Area, Sprocket-Hole Control-Track.*—This consists of a standard 100-mil variable-area track plus a variable-area control-track approximately 100 mils wide, located in the sprocket-hole area. The width of the control-track determines the volume change and may also be used for switching loud speakers.²⁰

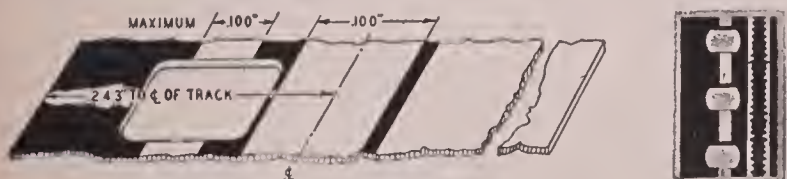


Fig. R

(s) *Three-Channel Stereophonic Control-Track.*—In this case three 22-mil stereophonic sound tracks occupy the space normally required for a single 100-mil track. A 5-mil control-track in the same position as in track q records control sig-

nals for each of the three sound-tracks. The sound-tracks and control-track are all variable-density, the control-track being frequency-modulated.

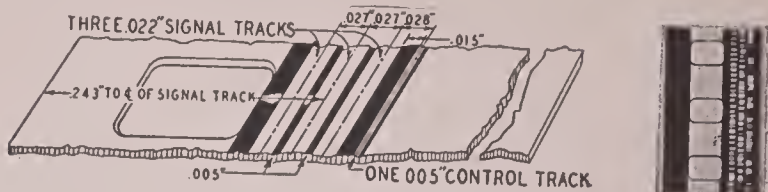


Fig. S

(t) *Three-Channel, "Fantasound".*—This arrangement employs four 200-mil variable-area push-pull tracks, three being used for sound, while the fourth carries signals for controlling the sound volume in various loud speakers.²¹

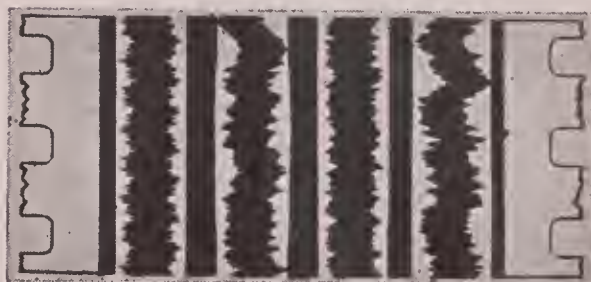
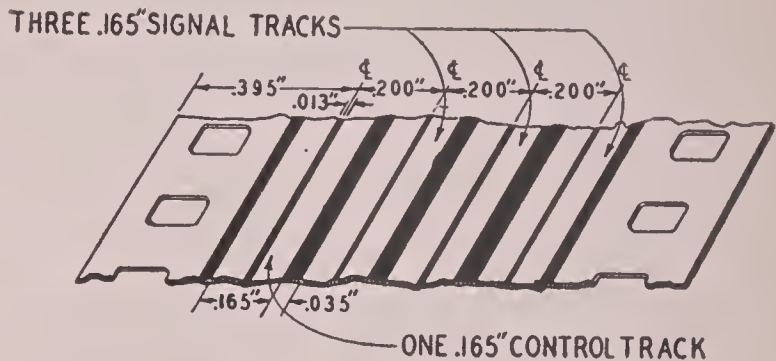


Fig. T

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* Electrical Research Products Division, Western Electric Company, Inc., Hollywood, Calif.

** Electrical Research Products Division, Western Electric Company, Inc., New York, N. Y.

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Making Christmas Movies

(Continued from Page 437)

hundreds of miles on horseback to a photographer with his slow wet plates, long exposures and torturous iron head braces. Surely a picture was a rare and great event in their lives. But for you and me with all the fast films and modern photographic equipment right at our finger tips we have no excuse for not making pictures on this great day.

We have made stills and motion pictures for over a period of some thirty years and the other night while Mrs. Kershner and I were making our Christmas plans, we projected these films . . . for a few hours, time was swept away and we were whisked back to the cradle days of Robert . . . we saw Tom on his first sled riding in a blizzard. We laughed again when Norbert upset the turkey gravy all over his first suit and three Christmases later we watched Beverly with her candy sticky hands hugging the little kitten and wondering why pieces of tissue paper stuck to its fur and feet. These and hundreds of other enjoyable incidents photographed at various places over America came to life again on the screen and refreshed fond memories. All are the visible records of the children from birth to maturity to be looked at again and again and who knows, someday perhaps the children will be showing them over and over to their own children.

Leafing through the albums of snap shots and photos we saw many funny ones because we had nothing better than flashlight powder. Into this we would place a long fuse, light it and run for our position hoping to get there before it flashed but generally we were but a blur and moved all the others around us. If not this we had our eyes closed as tight as blind people. But not today. Now we have photo bulbs of high intensity for quick exposure or flash bulbs whose peak of light is so brilliant we can stop down the lens for greater depth of focus and so instantaneous the slightest move will not be seen, all without the old time results of blackening the ceiling or of burning holes in the rugs or carpet.

In preparing for our Christmas day we have made plans just where we will set the tree with the miniature winter scene around it right next to the fireplace where all the stockings will hang. By pushing the table over away out in the dining room we can set up the camera, and shoot through the arch and get the children running to the tree and finding their stockings all in one scene. Then when we have dinner we take the camera into the living room and shoot through the arch again giving us a good picture of the folks at the table with plenty of head room. The chairs and tables in both rooms that prevent us from shifting our lights will be taken out of the room ahead of time to prevent confusion. We have set up the camera already and know just what will have to be moved and

where we will have to place it and how much of the back walls we will get in the picture. Colorful shawls and tapestries will be hung at just the right places to make a good color balance. Green branches will be broken off the garden shrubs, stuck in cans of sand and set at places to cover up bare spots or to help in the compositions.

Next we make sure all the light extensions are in shape and that the main one is long enough to reach the ironing plug and then we bring in the lights and try them out for reflections. We will need some cardboards nailed on sticks to keep the lights from shining into the lens. We nail these on sticks and stand them in cans of sand. We find the photo-floods from last Christmas are all right and repack them in a box and set all of it in the closet ready for use. In the meantime we have had a lot of fun deciding on what colored dresses, shirts and neckties we will wear and the color of flowers, candles, favors and dishes we will use to make a color balanced picture when the turkey is carried in on the big platter.

With all this planned ahead of time and prepared, confusion will be eliminated and you will get good pictures as well as having time to help the wife in the kitchen. And don't forget, making a few shots of the turkey going into the oven and when it is brought out all shiny and brown, with the wife smiling while you make it. There are two suggestions I would like to make. One is be sure to place the tallest folks farthest away from the camera at the dinner table. By this you will give the youngsters a chance to be seen and after all they are the ones we are mostly interested in. The other, do not forget a group picture with the parents, children and grandparents grouped nicely outdoors in a pretty setting for the family record. If ordinary black and white, place the group in the shade so the eyes will be natural and faces not all squinted up, but if color is used plan the time of day so that the sun is behind the camera and place the group so that the sunlight falls on three quarters of the face and you will then have a good photographic record of the family on this Christmas day of 1943. If they are worth making at all, they are worth planning well ahead of time, and more so if you expect to be showing them to your children's children thirty years hence.

P. S. Better shop early and not put off too long the buying of your films and photo flood lights.

Lantz's 'Wally Walrus'

Walter Lantz will introduce a new character which he developed in his forthcoming cartoon, 'Beach Nut.' New member of Woody Woodpecker family will be known as Wally Walrus. Tuner which Universal releases starts shooting this week.

Aces of the Camera

(Continued from Page 436)

next few years in Hollywood making pictures for M.G.M., who during his stay in Rome had taken over the old Goldwyn company, and First National Studios. Then in 1931 the travel-bug got him again. This time he headed for the Scandinavian countries.

Taking a Mitchell bi-pack camera, with Mrs. Boyle as business manager and Ray Fernstrom as his assistant, Boyle made the first color travel pictures in Scandinavia; covering Denmark, Sweden and Finland. Discovering for the cinema audiences places then little known, like Lake Ladoga, which have since become transformed into vital links with the world's future.

Back in Hollywood again, Boyle broke the monotony of the next few years studio routine with trips to Hawaii and Alaska before being called, in 1935, to England for a year. He arrived in England in Jubilee Year, which was all the more to his liking, to take over the camera assignment of Carol Reed's first directorial effort, "Mr. Midshipman Easy," that great adventure story and perennial favorite by Captain Maryatt. Down at Weymouth on location the company was fortunate in getting the permission of the Admiralty for the use of the large scale model of Nelson's famous flagship "Victory," which was on display there in connection with the jubilee celebrations, for use in the picture.

"I remember one very amusing incident regarding that sequence," John told us. "We had some very realistic action, with men hidden inside the ship, shooting Very pistols through the ports to simulate cannon fire while the ship was being towed on a course that would not bring into the camera field the flotilla of modern battlewagons anchored in the bay. But there was hardly a place on the horizon that didn't have a modern battleship impeding the view. Then someone suggested that we shoot against land, with the hills as a background. That sounded like a good idea till I locked up. And I decided no one would believe it. The hills around Weymouth don't look like England at all. They look just like California."

While he was in England Boyle received a rather unusual request from the Mitchell Camera Company. It seems they had sold a couple of their cameras to the Mir Studios in Cairo, Egypt's government subsidized film studio, but when the cameras arrived no one knew how to make them work. So the call went out to Boyle who flew to Cairo and showed them how.

"They were very nice to me in Egypt," Boyle recalled, "and they made me many flattering offers to stay. The Government officials and everyone whom I met were most enthusiastic about the future of motion pictures in the Near East. But I had to get back to England. Even though the Egyptians held out the lure

(Continued on Page 454)

It's Fun to Develop Movies

(Continued from Page 446)

and overlapping the guide pins or grooves. This problem can be solved simply, but effectively, by looping a rubber band through itself, over the starting point on the rack, attaching the film to the other end by looping it through the rubber band and fastening it to itself with a paper clip or two. The tension of the stretched rubber band will keep the film taut and will automatically take care of any expansion or slackening later on. The other end of the film should be fastened to the rack in the same manner. In this way any length film up to the maximum capacity of the rack can be handled, with the assurance that it will remain tightly in place throughout the entire process.

In drying a different rack is usually used, although not absolutely necessary, especially in the case of the drum type rack. The drying rack ordinarily resembles the drum type quite closely, still holding the film in circular or squared-off loops, but is more loosely constructed than the developing rack. By that I mean the film is supported in not more than 4 places each time it spirals around the rack's circumference. Probably the main reason for using a different rack in drying, is for the sake of cleanliness in this final operation. At this stage a fresh, clean rack in clean surroundings is good assurance for a spotless film. When thoroughly dry, and not before, the film is wound on a reel, ready for projection.

It goes without saying that fresh chemicals give best results. For economy's sake, however, the solutions may safely be used more than once. If stored in a cool, dark place in well corked bottles, they will keep for a reasonable length of time, particularly the hypo. The Fromader General Company ofavenport, Iowa, is one concern that can supply all necessary chemicals for reversal processing, as well as the developing and drying racks, for those desiring to purchase, rather than construct, their own equipment.

Developing and printing your own movies opens the door to many new tricks, heretofore thought impossible. Your own patience and ingenuity is the limit. For instance, a negative scene can be run through the camera in contact with an unexposed positive film to provide a motion picture background for a title, photographed in the usual manner. This also enables one to superimpose wording over previously made movie scenes, by first making a negative of them, and then following the procedure outlined above. Similarly, an endless variety of trick fades, wipes, and dissolves are possible, limited only by the cameraman's imagination and ability. These transitions, and many new ones that will suggest themselves, may also be employed in scenes where they are not already present, by clever manipulations and double exposures.

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PROJECTOR: Ventilating system (lamp house); optical system; film movement; reel arms; tilting device; film safety devices; take-up, framing, focusing and shutter mechanisms, etc. Can you suggest particular developments of these features?

CAMERA: (single or turret lens mount) view finder; shutter, footage indicator; loading mechanism; winding key; exposure guide; lens mount; focusing; single frame release mechanism, etc. How do you think these can be simplified, perfected?

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do not care for the printing stage of the work, may still find enjoyment in the developing end. Titles, especially, are frequently made on economical positive film and developed "straight" . . . that is without reversing the film and without making a contact print for projection. When used for this purpose, the camera is loaded the regular way, with the emulsion side of the single film out and facing the lens. It should be recalled here that the

film, when developed, will be in negative form. Therefore, all title cards should also have their color values reversed from the way they are to appear on the screen. In this way the result will be a positive projection print, the same as in the case of the other methods. Bear in mind, however, that this system only holds true for titles. Regular filming cannot be carried on using only a single film, developed "straight."

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Aces of the Camera

(Continued from Page 452)

of living tax-free in their land by the Nile. But I was very impressed with the country and told them I would be back. At the time I had no idea it would be so soon.

"In England I found myself slated to do the camera work on Walter Futter's Capitol Films production "Jericho," starring Paul Robeson, Henry Wilcoxon and Wallace Ford and released here under the title "Dark Sands." Part of the location shots had been planned for the company in Algeria. But when we got there things didn't pan out right, so, remembering my Egyptian connections, I asked for help which was graciously given and off we went to the Egyptian Sudan. Which was the location called for in the story anyway."

The shooting of "Jericho," or "Dark Sands," was one of the biggest adventures in Boyle's colorful career. The story concerned itself with one of the most fantastic events of modern times; the annual trek made by the natives of Nigeria across two thousand miles of Equatorial Africa to obtain their year's supply of salt. Banding together as a defense against the marauding Taurogs, the caravan assumes tremendous proportions. Fifteen thousand camels were in the caravan Boyle photographed.

"The original idea was that we would follow them in motor trucks, equipped for the desert," Boyle told us with a grin. "But it didn't work out that way. After only a few hundred miles even the specially equipped trucks refused to go any further. So we followed the caravan the rest of the way riding camels ourselves." John Boyle took it all as part of the day's work. But nearly 2000 miles by camel! And if you know anything about camels! Incidentally, even the reviewers who usually take the cameraman's work for granted or who choose to ignore it entirely, wrote paeans of praise about Boyle's spectacular desert sequences so brilliantly photographed in spite of the primitive conditions.

Boyle's intended year in England stretched into three. He worked at Ealing, Denham and Pine Wood before

returning once more to Hollywood. "One can't afford to stay away too long. They forget you," he observed. But he wasn't back for long. In 1939 he was approached by Mr. Lawrence Thaw, a New York banker, who had planned a most pretentious motor expedition from Paris to India. Preparations for the trip had been going on for two years, the foreign governments through whose territory the expedition must pass had promised their cooperation and the prospect of adventure beckoned. On the other hand the threat of war was becoming increasingly ominous. But the temptations of the trip were too tantalizing. Boyle cast all other considerations aside and went. It turned out to be one of the most spectacular assignments ever covered by a motion picture cameraman. From Paris to Munich, then across Europe to Vienna, Budapest, Belgrade, Sofia and thence into Turkey, then to Syria, which they reached on September 3rd, the day war was declared. From Beyreuth they went on to Bagdad, through Persia, into Afghanistan and entered India through the storied Khyber Pass.

During the course of the trip Boyle photographed a Bedouin desert feast, the exquisite mosaics of the Pearl Mosque, and in India, where the party was entertained by nine Maharajahs, Boyle recorded with his camera the exotic splendors of Durbars, palaces, treasures and silk-robed courts of these feudal potentates many of which had never been photographed before. The National Geographic Magazine carried a big spread of Cameraman Boyle's pictures along with the story of the expedition. Life Magazine of November 25, 1940, devoted seven pages to pictures and laudatory comment of the film John Boyle brought back. "His pictures," said Life, "not only make a series of gorgeous travelogs, they constitute a documentation of Oriental civilization that may never again be duplicated."

We asked Boyle, was there any particular reason he liked to travel so much. "Well," he said after a moment's thought, "it's a good idea to get a fresh viewpoint. If you keep doing the same thing you get in a rut." "Even in Hollywood?" we asked. "Especially in Hollywood," he countered. "And besides, I think it most important that we learn, at first hand, just what the rest of the world is like. Here in Hollywood we make pictures with story locations in all parts of the world. It stands to reason that we can be more authentic, thus adding to the sincerity of the story as well as lessening the possibility of offending native sensibilities, if we have a personal knowledge of the country in question. The influence of the motion picture is so great that I feel movie makers should feel a greater responsibility in presenting factual things factually. This will be particularly true in the post-war era when international cooperation will depend on international understanding."

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Girl's Idea Increases Binocular Lens Output

FOR keeping her bright blue eyes open, and her mind in the same condition, June B. Burhans, 461 Avenue D, has been given a \$430 check by the Bausch & Lomb Optical Co.

Miss Burhans, a slim young blonde, is believed to have won one of the largest awards ever given to a woman for technical suggestions. At least she tops any previous woman worker with the company. She took advantage of the company's suggestion system to submit an idea for combining operations on certain optical parts which substantially increases production.

Objectives and eyepieces for binoculars are made of two elements cemented together and aligned optically. Ordinarily these lenses are matched, cemented, cleaned, and inspected, then transferred to another section where they are reheated, trued on an optical truing machine, cleaned and inspected again.

Miss Burhans conceived the idea that all these operations could be done at the same time and on the same bench. One girl could clean, then heat the lenses, cement them together and true them while still warm. A small plunger type fixture was designed and built in the company's machine shop for the truing operation and the basic idea made good. In practice, a team of two girls working as a unit was found better than one, but the basic idea remained—one heating, cementing, and truing on the same bench.

Slipped into a little plunger lathe, the cemented elements are quickly trued. Light striking the surface of the trued lens quickly discloses a reflected image which tells whether the lens elements are optically trued.

The new system raises the production of binocular eyepieces and objectives to as many lenses in two-and-a-half days as were formerly produced in six.

In Memoriam

Andre John Raphael Barlatier, A.S.C. Born in Paris, France, August 28, 1882. Died in North Hollywood, Calif., November 7, 1943. A beloved member of the American Society of Cinematographers for many years. His widow and his daughter are extended the sympathy of each member of the Society.

Electronic Tubes

(Continued from Page 439)

film acts as a variable medium between the arc lamp and the screen in the kinema.

This principle is covered by the title of a Diavisor, and many proposals have been put forward to give the desired results.

The cathode ray, for example, has been used to operate small mechanical shutters, to cause the orientation of small colloidal particles, and to produce birefringence in suitable substances.

The advantage of such a system in comparison with direct viewing of the fluorescent screen can only be obtained efficiently if the varying transparency values of the medium can be maintained practically unchanged over substantially the picture repetition period.

Such a tube is known as a Siatron, and Fig. 4 shows the principle of operation. It is identical with a cathode ray tube, with the exception that the crystal screen is not luminous but exhibits an effect of electron opacity, that is, it can be rendered opaque by being scanned with a cathode ray beam. The opaque areas become transparent again after a short interval of time under the influence of heat. Research is concentrated on the production of suitable materials.

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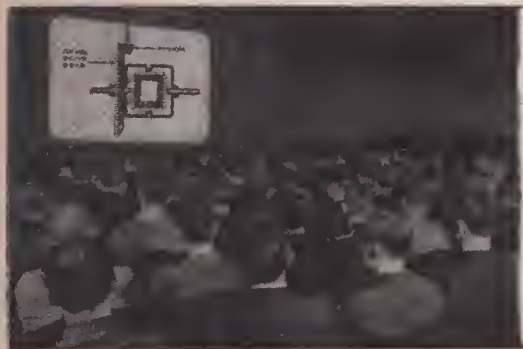
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Pictures to Teach Spanish to Troops

AMERICAN troops stationed in the Antilles will see Hollywood motion pictures with super-imposed Spanish titles to assist them in learning the Spanish language, Colonel Smathers, in charge of special services for that area, told foreign managers at a luncheon meeting at the Harvard Club yesterday.

At the request of the Colonel all the majors agreed to supply a special Antilles Dept. of the Army's special service, with three prints of all pictures directly from New York. Antilles department covers Puerto Rico, Cuba, the Dutch Island of Aruba and Curacao, and other spots. U. S. bases in the area were formerly serviced direct from company exchanges in San Juan, P.R.

Servicing of prints from here will be on the same paid basis as previously, but will expedite showings and insure earlier screenings for the troops. A film man, likely George Barnett, will be appointed to handle the Army's Antilles department from New York.

Disney Museum Trustee

Walt Disney was elected a trustee of the Museum of Modern Art at the annual meeting of board of trustees. Disney was one of the first sponsors of the Museum Film Library and one of the first to donate his films to it.



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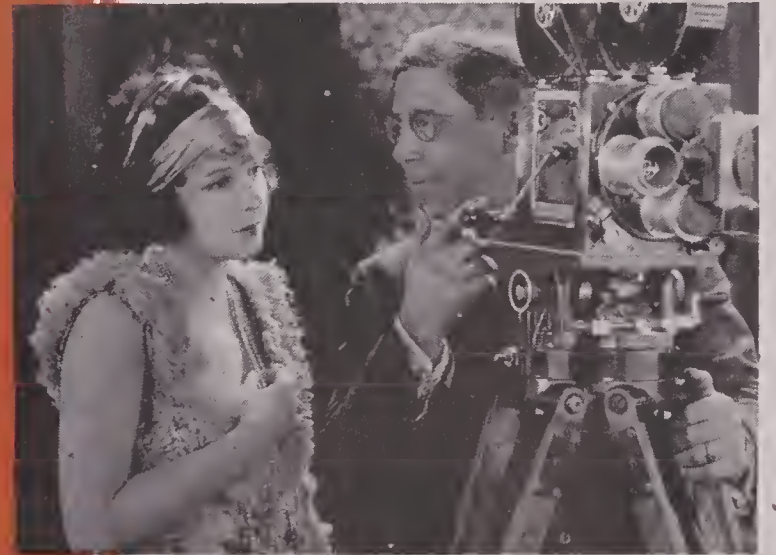
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