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Rural Lines

RURAL ELECTRIFICATION ADMINISTRATION • U. S. DEPARTMENT OF AGRICULTURE



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Growth Through Agricultural Progress

CO-OPS ASSIST DEFENSE EFFORT



A Message from the ADMINISTRATOR

Each May 11 the staff of the Rural Electrification Administration holds a birthday ball to celebrate the founding of one of the most successful programs ever undertaken by our Federal Government in cooperation with rural people. This year, as we mark REA's 27th anniversary, our electric loan program is recognized at home — and increasingly recognized abroad — as being of incalculable benefit to the farmer and to the improvement of American agriculture.

But our labors are not finished, by any means. The modern farm has become a mechanized production unit. It requires electric power in amounts undreamed of by REA's pioneers. Rural electrification cooperatives and other suppliers have an obligation to meet this demand for more and more power, and to meet it at the most reasonable rates possible. As a vital lending institution, REA shares this obligation with its borrowers.

REA has another continuing task. I refer to our obligation to the public, to the American taxpayer. We must take all necessary steps to assure repayment of the REA loans, on time and with interest. So far, the credit record of our electric borrowers has been A-number-one, and we hope to keep it that way. We shall continue to develop and implement policies which will assist our borrowers in continuing to serve persons in the areas they have developed on an area coverage basis, and which will protect them from raiding and other encroachments by hostile power suppliers.

This is our pledge to you as REA begins its 28th year of service to millions of rural Americans.


Administrator

Rural Lines

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Contributors to this issue: Ken Jones, Bernard Krug.

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CO-OPS ASSIST DEFENSE EFFORT

There are no rural electric cooperatives in outer space as yet, but an increasing number are playing a role in our Nation's missile program.

In Missouri five electric cooperatives have signed a contract with the Air Force to supply power for 65 percent of the Minuteman missile sites in the area.

Negotiations were begun last October. The Air Force was favorably impressed by the cooperatives' strategic location, rates and ability to serve. It was equally impressed by the group effort and coordination that the REA borrowers displayed. For instance, they saved the Air Force valuable time by working up similar contracts. Valuable assistance in this respect was provided by REA field engineers Leean Huff at Sedalia and Clark A. Reid of Joplin, and by REA operations field representative R. Bernard Galbreath at Columbia.

REA followed through by approving the construction contract within 24 hours after it was received.

The Missouri cooperatives will supply the missile sites with 70,000,000 kwh annually, of which 50,000,000 kwh will be provided by REA-financed generating and transmission facilities.

The Missouri borrowers which are thus joining the growing list of co-ops which are participating in the national defense effort are the Osage Valley Electric Cooperative at Butler, the Central Missouri Electric Cooperative, Inc., at Sedalia, the Co-Mo Electric Cooperative, Inc., at Tipton, the West-Central Electric Cooperative, Inc., at El Dorado Springs.

The cooperatives promptly undertook a large-scale construction job to

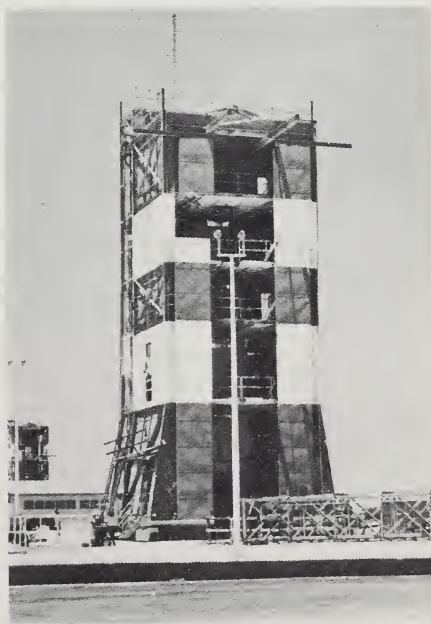
meet the tight schedule set by AF authorities. The job included setting poles, stringing conductor and building substations.

In South Dakota there are four electric cooperatives serving Minuteman missile sites: Butte Electric Cooperative, Newell; Grand Electric Cooperative, Bison; West Central Electric Cooperative, Murdo; and West River Electric Cooperative, Wall. The installations here will require approximately 16,000 kilowatts of capacity.

In North Dakota the cooperatives involved are the Verendrye Electric Cooperative, Inc., Velva; the North Central Electric Cooperative, Inc., Bottineau; Burke-Divide Electric Cooperative, Inc., Columbus; Mountrail Electric Cooperative, Stanley; and McLean Electric Cooperative, Inc., Garrison. These cooperatives are supplying over 60 million kwh annually.

In Montana, Fergus Electric Cooperative, Inc., Lewiston, will supply one million kwh annually.

Minuteman launching pad.



SCENERY HILL SUCCESS STORY

Scenery Hill, Pennsylvania, lies some 40 miles southeast of Pittsburgh. It is the hub of a network of roads serving a coal mining area comprising twenty or thirty square miles of low mountains and second and third growth timber lying athwart U. S. Highway No. 40.

The area is also dotted with slate or slag heaps. Spontaneous combustion sets them to smoldering with implacable persistence. The acrid smoke is dissipated throughout the area, and the caustic acids which it contains start their work of destruction on homes, automobiles, telephone conductors — anything and everything susceptible to their attack.

It was the telephone conductors and cable strands that worried the Marianna & Scenery Hill Telephone Company. Founded September 14, 1910, the company had about 750 subscribers. The Company was and is strictly a family affair. Russell Horne, the founder, was German. And there was his son, Stuart Horne. But there also was Mrs. Horne, whose maiden name was Murphy, and her brother, S. E. Murphy. The four of them comprised the board of directors — mostly stout German, with a dash of Irish for seasoning, and a hint of Scotch.

The Company started the first phase of its fight using galvanized steel for suspension strands. It was a bold venture and, at first, it prospered. The Hornes and Murphys found private financing for switchboards, equipment and operating capital.

But as time marched on, there were replacements of conductors and strands, and *re*-replacements of conductors and strands. By 1955-1956 the galvanized steel and copper steel stuff started to fall apart in an alarming pattern of

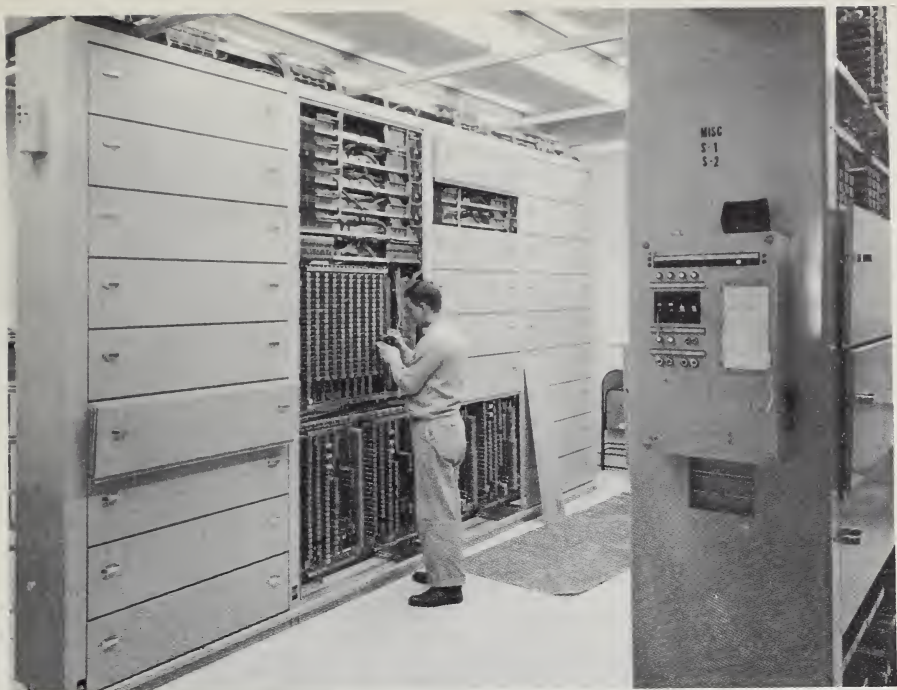
system collapse. Over the years the sulphur-impregnated atmosphere of the area simply kept eating the heart out of both steel and copper.

The prospects did not appear good for obtaining financing to renew the system. The telephone company did not have sufficient equity in the extant facilities to obtain money from conventional sources in order to replace the rotted facilities and extend service to potential subscribers who, by this time, were screaming for it in the isolated Marianna area.

At this point a happy combination of events came into conjunction. The *need* was there, in the telephone company and its subscribers and potential subscribers. The *complement* was available — an REA loan. And just about that time a possible *means* at solving the problem emerged in a process developed by a wire manufacturer of Glassport, Pennsylvania. This company came out with an aluminum covered steel conductor to carry current, and an aluminum covered strand for suspension.

With this healthy unanimity of interests in the picture, the telephone company applied for and, in 1958, received a \$500,000 REA loan. REA was particularly interested because its telephone loans often cover systems in atmospheres characterized by the corrosive by-products of chemical processing, coal mines, oil refineries, oil wells, paper mills, sour gas fields, and sulphur mines. If any new fabrication could show higher tolerances for the destructive impact of these insidious chemical fumes, REA wanted to know about it.

The rest is current history — but pretty significant history for REA telephone borrowers. The Scenery Hill project, serving 1400 subscribers on



Modern equipment and building symbolize success of Pennsylvania company.



area coverage basis, went all-out for renewal with aluminum steel. As the new facilities were erected, the old, rotted lines were torn down. The cost of the new facilities was not appreciably greater than would have been the cost of replacing galvanized steel and copper steel with new counterparts.

REA prepared the specifications and worked closely with the Scenery Hill company in building the whole new system. Regarding the whole thing as a field trial, REA engineers have made careful 18-month and 30-month on-the-site inspections of the whole Scenery Hill-Marianna system. These inspections have shown the corrosive impact on the aluminum material to be minimal. Indeed, the experience has been so encouraging that REA has installed an exposure program south of Myrtle Beach, South Carolina, on the seacoast, to test the resistance of this type of material and other accessory materials to the special corrosive factors found in marine usage.

The new material is not yet on REA's approved list, and is still undergoing field trials. Evaluation of accessory

materials and construction practices is continuing within REA and it is hoped that the new material will gain acceptance soon as an additional tool to be used by engineers in the design of REA's borrowers' telephone systems areas other than along the seacoast.

As of today the Marianna & Scenery Hill Telephone Company is doing very well. Its REA loan is being retired punctually and with interest. Its economic situation is stable. Its rates to its subscribers are low, starting at \$3.25 per month for multi-party residential service. The quality of its service has improved and its outages are negligible. Young Stuart Horne has taken over the presidency of the Company from his father, recently deceased, and Stuart estimates that the Company now serves 60 percent of the potential subscribers in the area.

Scenery Hill is a success story. In the unchanging hills and mountains of Pennsylvania there is now hope that one means of communication by which man lives and grows may endure also — or at least endure a lot longer than it did a couple of decades back. □

SIX QUESTIONS FOR SAFETY

In 37 states, nearly 60 safety and job training instructors are helping REA borrowers set a new safety record in 1962. They deserve the full cooperation of every board member and co-op manager.

Here are a half-dozen questions to test yourselves on the quality of your relationship with your safety and job instructor. How many of them can you answer affirmatively?

1. Do you know your instructor, and the kind of help he offers you?
2. Do you attend his training sessions with your men?
3. Do you know how much of that training your men carry to their jobs?
4. What does your line foreman think of the training?
5. Do you keep a monthly accident report, including first aid cases — your barometer of injury and death?
6. Finally, do you consult with your instructor to ferret out weak spots in your program and help him emphasize in his instruction ways of eliminating those weaknesses?

Electric Co-op Solves Quarry Problems

A granite rock quarry near Spencer, South Dakota, has good reason to be grateful to cooperative power.

In the early Forties it received its electric service from a small power supplier. Rates were high and service was poor. The quarry had great difficulty getting enough power and required a 175-hp diesel engine to drive its main crusher.

In 1945 a small group of rural people in southeastern South Dakota combined with residents of the towns of Montrose, Spencer and Farmer to form the McCook Electric Cooperative. With the assistance of an REA loan, they acquired the power supplier and set to work — first to electrify rural areas, then to rebuild the service in the towns.

At this time the quarry was served by a small bank of three 25KVA, 4160 volt transformers. It had great difficulty with its operations since the main crusher could not be electrically driven. Operations were limited to warm months because of the difficulties in starting the diesel-driven crusher during the winter.

A change was made by the co-op to a higher system voltage throughout the service area. The co-op then provided three 50KVA, 7200 volt transformers at the quarry site. The main crusher was converted to electrical drive. This of course eliminated the problems with the diesel. Thus the quarry was able to operate the year around, giving work to 5 or 6 employees.

By 1954 the load had increased so that three 150KVA transformers were necessary and the crew had increased to 12 or 15 men the year round.

In 1960 the load had again increased — this time to require the co-op to install three 250KVA transformers. Extra shifts were put into operation



Three 250 KVA transformers enable quarry to meet increasing demands.

during the summer season. Now it is anticipated that the load of the quarry will jump from 560 kilowatts to about 900 kilowatts, thanks to the fact that an interstate highway two miles away will soon be under construction. To meet its need for crushed rock, the quarry will be installing additional crushing capacity.

McCook Electric Cooperative supplies power for the quarry over 12 miles of 3 phase distribution line originating at its substation in Salem. The substation gets its power from the East River Electric Power Cooperative at Madison, South Dakota.

McCook Cooperative is prospering in other ways as well. Consumers who were using an average of 125 kwh per month in 1951 are now using 510 kwh. Their number has increased from 475 to 1,745 persons, served by 737 miles of line. The cooperative, which has borrowed \$1.7 million from REA, has made payments on principal and interest of \$787,000 on these loans, of which about \$219,000 represent advance payments. □

MEETING THE NEED FOR VOCATIONAL EDUCATION

Many people are concerned — and all of us should be — about the number of children who leave school before they finish their twelfth year. At the same time, there is a need for technicians in dozens of fields — auto body repair, automobile mechanics, electronics, machine drafting, practical nursing, sheet metal working and welding, merchandising.

To help meet both these problems in Sussex County, Delaware, a vocational school was opened last fall for 500 students in the tenth, eleventh, and twelfth grades of school. They spend half their day in their home schools taking academic instruction, then they take a bus to the vocational-technical center. The second semester, which opened after Christmas, took in adults and out-of-school youth as well, in evening classes.

Power for the school is provided by the Delaware Electric Cooperative, with headquarters in Greenwood — but special handling was required. The architects determined that it was neces-

sary to use three phase current to serve the school. Three transformers owned by the schools, with a combined rating of 750 KVA, were therefore installed in a vault in the building. The cooperative connected its lines to the primary or high voltage side of the transformers.

It was decided to meter this load by what is known as primary metering — which is quite different from the single phase meter conventionally used on residential housing. In this case the metering equipment consists of a three phase element meter served by another set of transformers known as “instrument” transformers. These transformers are necessary since the load is metered on the high voltage side of their transformers and the meter itself cannot handle such high voltages (12470/7200). These instrument transformers reduce both voltage and current to a value that can be safely connected to the meter. □

“THE VITAL SPOT IS GENERATION”

Rural people today are not interested in constructing facilities beyond the distribution line unless those facilities clearly are necessary to protect the future ability of their electric systems to meet their needs. But I am sure that rural people anywhere in this Nation are ready to construct such facilities where such facilities are considered necessary to the achievement of their objectives of low cost power, dependable power.

The rural distribution system could quickly be swallowed up without an effective alternative — generating its own power — where such a step is to its advantage. The vital spot is generation. Generation is the target under constant attack by those power company spokesmen who have resisted the development of rural electric cooperatives step by step, throughout their history.

The results of their efforts can have a direct effect on the quality of service and the power rates of every member on your systems. If their efforts are successful, the rural electric systems of this Nation may very well find themselves forced into uneconomic power arrangements which will eventually destroy them.

NORMAN M. CLAPP, *REA Administrator*

(Extract from a speech delivered before the Indiana Statewide Rural Electric Cooperative, Inc.)

TROUT FISHING

MADE EASY



One of the world's largest commercial fish hatcheries has recently been completed. It is located six miles south of Livingston, on the west side of the Yellowstone River in Paradise Valley, Montana.

The enormous plant has a capacity of hatching out and raising to the fingerling size five million trout a year.

Nearly 3,000 sacks of cement and over a mile of reinforcing steel were used in the construction of Paradise Rainbows, as it is called. Over 100 valves and 1,000 feet of pipe, ranging in size from 2 to 14 inches, were required for the intakes and drains.

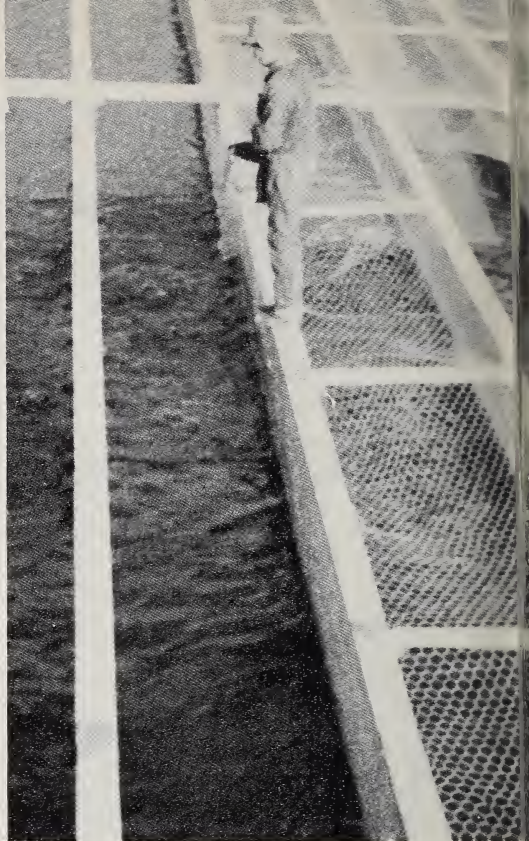
Some 72,000 gallons of water pour through each concrete rearing trough during a 24-hour period.

The fish are sold dressed, or delivered live in sizes from fingerlings to one-pounders, anywhere in the United States and in any amount.

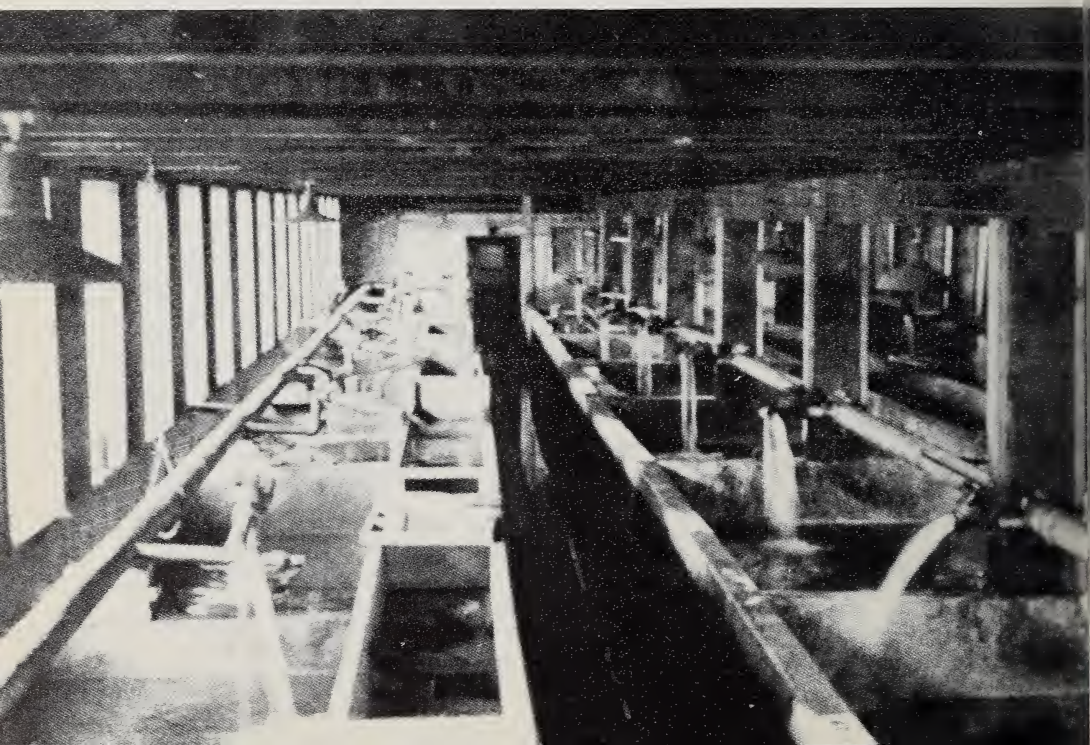
The complex includes several ponds which have been built and stocked for fishermen. They pay for what they catch. A large picnic ground, complete with fireplaces, drinking fountains and

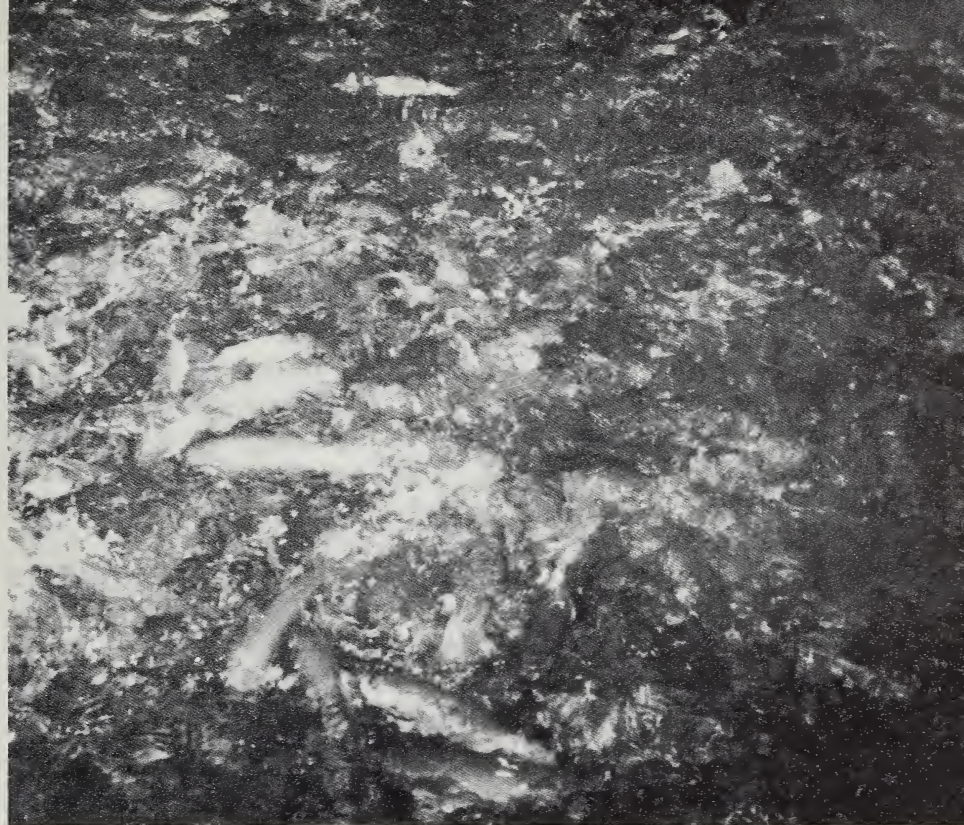
rest rooms, has also been constructed.

It is easy to understand, therefore, why the matter of supplying power for the construction and operation of this enormous fish factory afforded special pleasure as well as profit for the Park Electric Cooperative, with headquarters at Livingston, Montana. Ten days after the application was received, three phase juice was on hand for the ground breakers. Power saws, power grins and power drills all played an important part in speeding up construction. Electricity operates the compressors that keep the walk-in freezers cold, and powers 30 floodlights. Auxiliary pumps stand ready to pump waters at two seconds' notice in case of a ditch break. Sump pumps that clean trough, tanks and raceways have been installed. Automatic sorting machines and loading machines are powered by electric motors. Many other electric motors are used in the modern processing plant. Even the amount of feed discharged into the raceways is automatically controlled by electrical devices.



Park Electric Cooperative power plays a part in almost all stages of trout development, from rearing troughs in hatchery (below) to net to frying pan. Diversion dam (right, below) is particularly handy to fish enthusiasts.







One of many lamp workshops assisted by Cumberland Electric, Tennessee.

BETTER LIGHT FOR BETTER STUDY

Imbued with the doctrine that no home has enough desk lamps, many rural electric cooperatives are waging vigorous campaigns to promote the construction and use of these useful work and study tools. A co-op in Tennessee and one in Alabama have been particularly active in recent months.

In Tennessee, Miss Ruth Truett, home service advisor for the Cumberland Electric Home Membership Corporation, which serves a major part of Cheatham County, has assisted the County Council of Home Demonstration Clubs in its project on "Better Lighting on the Home." She visited 17 club workshops, together with Mrs. Mary Elizabeth Jean, home agent, where the women worked an average of 2½ hours assembling the lamps, including lacing the shades. This, and follow-up work, led to the eventual construction of 216 lamps.

In Alabama, Sara Alexander, home economist for the Clarke-Washington Electric Membership Corporation, gave demonstrations on the use and manufacture of desk lamps before five Home Demonstration Clubs, two P-TA groups and a Kiwanis Club, but her principal emphasis was on the "well-lighted

study center" for the student. This was an all-out effort by the co-op. It included demonstrations before hundreds of students; an essay contest with the winner in each school receiving a wall desk with a make-it-yourself kit containing two pin-up lamps and bulbs; and the issuing of blueprints for making desks out of a fruit-crate, of plans for making study lamps, etc. In one year home economics students made 60 lamps at lamp workshops, and more than 1400 students attended at least one of Mrs. Alexander's demonstrations covering such topics as tests for comfortable seeing, adequate desk space, the reflection of light from walls and ceiling, and the prevention of distractions.

For lighting a study desk, Mrs. Alexander recommended the use of two wall lamps with 6-inch plastic diffusing bowls and 100-watt bulbs, centered 30 inches apart and hung with shade bottoms 15 inches above the desk top. For desks wider than 24 inches, she suggested swing-arm wall lamps, a swing-arm floor or table lamp, a free-standing regulation study table lamp or a lighted shelf above the desk. □

CUTTING LINE LOSSES



"The consumer's electric meter is your cash register — you want to keep it in shape," says B. F. Sumner, manager of Central New Mexico Electric Cooperative.

Rural electric managers across the country will agree with that observation, although not all co-ops take such good care of the "cash registers" as Sumner does. The Co-op's office at Mountainair, New Mexico, features a well-equipped meter repair shop, including some jumpers and rigged meters picked up at one time or another from consumers who attempted to cheat on their electric bills.

"Only a handful of our 3,325 consumers try to tamper with the meter or chisel on payment for the power they use," Sumner explains. "We have worked out a pretty effective system for discouraging the few who take their membership responsibilities so lightly."

Actually, he adds, there are many other good reasons for keeping meters in condition. State laws require checking and certification at stated intervals; meters are sometimes damaged by the intrusion of dust, salt, alkali, etc.; and, above all, there is the desire on the part of management to give their customers good treatment, even if their complaints about "fast meters" so often turn out to be invalid.

The co-op recently recovered \$1,680 from an irrigation pumper who had been turning the meter upside down for part of each month to run it backwards and keep the reading low. This offender was spotted by an inspection of the ledger cards in the office. (Peri-

odic checks of consumer accounts is one of the precautions the manager needs.) A sharp drop in kwh consumption that had held steady at a high level was the tipoff.

"At present, there are no dodges that we are unfamiliar with," Sumner says. "It's a wonder some people don't electrocute themselves. We have found bent discs, magnets, and bits of metal used to slow the dial. We even had one instance where honey was poured onto the dial in an effort to attract insects and slow the revolutions."

Manager Sumner's methods for keeping his meters up to snuff are inclusive.

1. Meter readers are tutored in meter construction and operation.

2. If a reader suspects that a meter has been tampered with, the meter reader completes his reading, returns to his car, and calls the office. The office sends another man out and the meter is rechecked in the presence of the consumer. If the meter reader's suspicions are verified, the meter is disconnected.

3. Meters are sometimes read on irregular schedules.

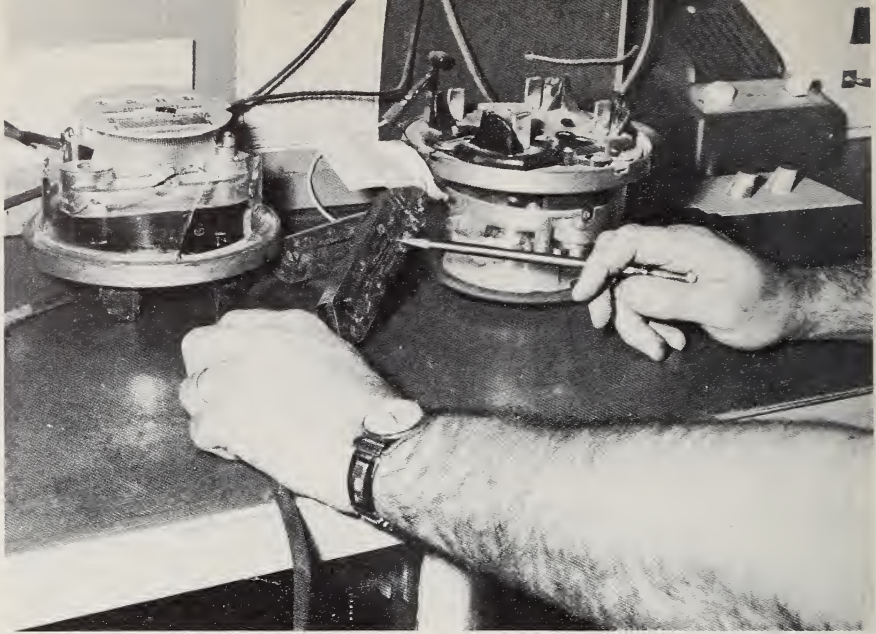
4. Each meter is replaced after 5 years. Pulled meters are carefully checked and completely renovated in the co-op's shop.

5. Periodic checks are made for unexplained variations in kwh use. Consumers' ledger cards provide the information for these checks.

6. The names of consumers whose meters arouse suspicion are kept.

The first year these techniques were used, the co-op's operations moved from red to black. Line losses, which formerly ran as high as 30 percent, have now been reduced to 17 percent, largely due to the campaign on meter maintenance. Another factor in reducing line losses is the policy of Central New Mexico Electric on idle services.

"A lot of land in this area has gone



Meter bypasses show up quickly when meters are inspected on a regular basis.

into the soil bank or been pulled out of crops and turned into grazing," Sumner explains. "We had a bad crop year for pinto beans a while back. It was so serious that the storage elevator here at Mountainair closed, and some farmers just gave up.

"We don't see anything to be gained by carrying a lot of inventory in idle services where farmhouses have been abandoned," he points out. The co-op sends the landowner a notice that the idle meter will be removed and the line extension dismantled, unless there is an agreement to pay the minimum monthly bill. Once the line has been taken out, the co-op will rebuild it only if the cost of the new construction is paid by the owner or the new consumer.

In dismantling idle services, the cooperative reuses the wire, poles, hardware, meter, and transformer on some new connect. There is a loss involved in the cost of labor for salvaging, as well as in such items as armor rods, ties, and anchors.

The co-op maintains service on 2,323

miles of widely scattered lines through thinly settled farm and ranch land in the semi-arid plateaus and valleys somewhat east of the Rio Grande. Power comes from Plains Electric Generation and Transmission Cooperative. There is a staff of 17 employees in all, operating from a modern but modest headquarters building. Average job tenure is more than 8 years. The manager and board of directors take special pride in tight inventory control and good housekeeping practices in the warehouse.

Manager Sumner belongs to the local Chamber of Commerce and is active on a committee to develop small local commercial and industrial enterprises in the area. A shirt factory has just been opened in the headquarters town as a result of this local effort.

Annual meetings of the co-op are well-attended, and the Board, under President J. L. Merritt, has just authorized a rate adjustment to make sure that new members brought in through small acquisitions get equitable treatment on the cost of electric service. □

LEARNING BY MAIL

You can learn accounting by mail.

This statement is regularly proved by the number of people who enroll — and finish — the three REA accounting courses given by the Department of Agriculture's Graduate School. A completed first lesson arrives from a new pupil on an average of four a week. And, in the telephone accounting course, a sizeable backlog is building up, waiting for the completion of the revised course scheduled for July 1.

Why do so many take and complete these correspondence courses?

The reason is simple. The courses are tied in with their jobs. The bookkeeper who wants to learn more about forms for requesting, accounting for, and repaying REA loan funds will find these an integral part of his 12-lesson course. He will also learn about financial statements, accounting for construction costs, operating accounting, continuing property records, etc.

For persons with no previous bookkeeping training or experience, there is a basic course which is a prerequisite for the advanced courses in REA telephone and electric accounting. This basic course, useful for anyone in any business, progresses from basic principles and definitions through journalizing, posting and general and subsidiary records to preparing financial statements.

This is the main reason why these correspondence courses, prepared and taught by such top-flight REA accountants as John Scott, Howard Paine and Clarke W. Phillipi, are so popular. They answer the natural urge of people to learn how to do their own job better — more swiftly, more accurately, more intelligently.

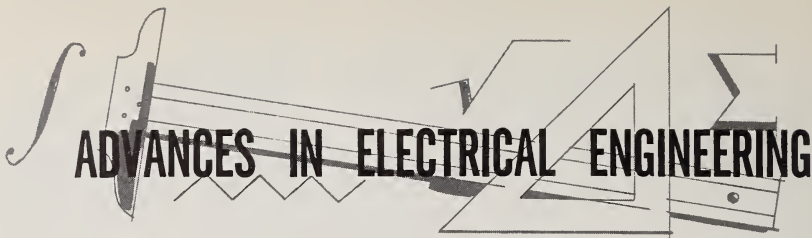
Wise cooperative and company man-

agers and directors, for obvious reasons, encourage their personnel to take these courses. Often they themselves pay the cost — \$32 for the basic course, \$44 for the course in telephone or electric accounting — for the prospective student. Some shrewd managers will not pay for the course until the employee successfully completes it. Others—even shrewder—go the whole hog; they give the student a raise when he finishes the course.

REA made a course covering basic and electric accounting available to staff members of REA-financed cooperatives many years ago. It was part of its imaginatively-conceived, broadly-based concept of service to REA borrowers. Many veterans returning from World War Two took these courses upon entering jobs with REA borrowers. In 1957 and 1958 the Department of Agriculture's Graduate School — a self-supporting institution, not a Government instrumentality — put these courses into its correspondence department, with REA officials continuing to prepare and teach them. Since that time, some 725 students have enrolled in the basic accounting course, 400 in electric accounting and 250 in telephone accounting.

The courses are open to all, but naturally have proved of special interest to office managers, accountants and bookkeepers of companies financed by REA. However, others with a special interest in the activities of these borrowers — directors, managers, auditors, lawyers and engineers — have found them valuable.

Persons interested may obtain further information by writing the Graduate School, U. S. Department of Agriculture, Room 1031, South Building, Washington 25, D. C. □



ADVANCES IN ELECTRICAL ENGINEERING

The increasing reliability and efficiency of the electrical power that serves mankind are not the result of chance. Throughout the United States — and throughout the world — thousands of engineers are constantly finding new and safer methods of providing cheaper and more reliable electric power. Among them are the engineers in REA's Electric Standards Division, who are constantly examining, standardizing and promoting all devices and procedures which will give REA borrowers the best and latest in engineering discoveries. Progress in developing such devices may be glimpsed in a modest mimeographed report issued semi-annually by the Division under the title of "Summary of Items of Engineering Interest."

One item deals with the development of a proximity warning device built into a lineman's safety hat which will sound a loud alarm if the lineman gets within reaching or contact distance of an energized high voltage power line. A prototype model has already been tested. Further work must be done in order to reduce its weight and insure reliable operation. (Safety note: will science ever be able to insure that all linemen will always *wear* this or any other kind of hard hat?)

A six-year study of ways and means of combating anchor rod corrosion has been completed by REA. In the understated fashion of science, the report says that "it appears that the means are now available for relieving under-

ground corrosion to the point where it should no longer be a serious operating problem." Accordingly, it is recommended to REA borrowers in most areas that they use galvanized steel as the material for all ground rods in future distribution line construction, that they specify galvanizing of anchors and that they utilize sacrificial zinc anodes for further protection where needed — all of which is spelled out in a forthcoming revision of REA Bulletin 169-30.

An REA engineer presented these conclusions at a meeting of the American Institute of Electrical Engineers held last January. The previous month, in far-away Bangkok, Thailand, another REA paper was presented which described characteristics of REA-financed rural electric systems for the benefit of engineers and managers of electric power systems throughout Southeast Asia. The occasion was a seminar on energy resources and electrical power development sponsored by the Economic Commission for Asia and the Far East.

REA's Committee "A" has accepted and made available for trial use a screw anchor which may be installed with the same equipment used in digging holes for pole setting. This could result in a considerable saving in time and labor. Committee "A" sets the standards, for accepting materials and equipment on which loan funds are advanced. Thus it safeguards the security of REA loans and, not incidentally,

helps borrowers to save money. On the Committee are representatives from REA area offices, the power supply division, the electric distribution division and the electric standards division.

The same Committee has also accepted for trial use, primarily in substations, a series of switches equipped with a vacuum interrupter device. The vacuum interrupter element eliminates the danger of unconfined arcs and is completely out of the circuit in the closed position of the switch.

Another change in the making may result in smaller and lighter transformers. The transformer industry is moving toward 65 deg. C. temperature rise transformer designs to replace 55 deg. C. rise designs. Although no standards have been published, substantial agreement has been reached on most points. It is expected that standards will soon be adopted which will permit average winding temperatures to be 10 deg. C. higher than at present and hot spot temperatures 15 deg. C. higher.

REA is examining with great interest a newly-developed process for the pressure treatment of new poles, cross-arms and other timber products. The preservative used is pentachlorophenol

but, instead of a petroleum solvent being used as the carrier, liquid petroleum gas is employed. After the impregnation period, the gas is recovered completely, leaving only crystalline pentachlorophenol in the wood.

The gas carries the penta preservative deeply into kinds of wood which have been considered difficult to treat. And, since the carrier is fully recovered, there is no "bleeding" or exudation from the timber with resultant loss of preservative from the wood or the dirty greasy surface conditions which usually accompany such bleeding. The final result should be a well-penetrated piece of material with a clean, dry surface. Some of the test installations now being made are on systems of REA borrowers.

REA is currently obtaining reports of experiences with insulated aerial lifts and buckets which show promise for making overhead line work easier, safer and more economical. Although this development has captured the interest of the entire utility industry, the REA Administrator has recommended that the aerial baskets be used for positioning purposes only, and that linemen working from such platforms continue to use gloves, hotsticks and other appropriate equipment. □

Water System Aid Available

Copies of an informative 12-page bulletin entitled **PLANNING THE ELECTRIC WATER SYSTEM AND PLUMBING FOR YOUR FARMSTEAD** are available in quantity for your next annual meeting or for any useful purposes. Write Information Services Division, Rural Electrification Administration, U. S. Department of Agriculture, Washington 25, D. C. Ask for Miscellaneous Publication No. 674.

THE GREAT LOCOMOTIVE CHASE

In April 1862, one hundred years ago last month, a railroad conductor, a shop foreman and some others set out on a wild 87-mile ride to recapture a 5-car passenger and freight train which had been hi-jacked by a group of Union soldiers.

Today, such a chase would not have been necessary. Train officials would have used the telephone lines of the Ringgold Telephone Company, in Catoosa County, Georgia, and the train would have been cut off at Ringgold or earlier.

The "Great Locomotive Chase" of the Civil War was suitably commemorated last month. And at the same time the Ringgold Telephone Company began providing extended area service between Ringgold and Chattanooga.

This is the South today — an area where reverence for the past is combined with a willingness to embrace new technologies based on local effort.

As part of the centennial observance, the ancient wood-burning locomotive named "The General" chugged and puffed its way over the Georgia countryside at a speed of 18 miles an hour. The train was stolen at Big Shanty (now Kenesaw) while its crew was at breakfast in a nearby hotel. It was recaptured just north of Ringgold, the county seat of Catoosa County. The



Town is located in the foothills of the Blue Ridge Mountains just 11 miles south of Chattanooga, Tennessee, host for the centennial. Its railroad station, built in 1849, was the scene of the festivities.

At the same time, the Ringgold Telephone Company was observing an anniversary of its own. Fifty years ago — also in April — Ringgold was founded by the late James Evitt. The company, which has given uninterrupted service for half a century, is still owned and operated by Evitt's son, James, Jr.

The extended area service installed last month between Ringgold and Chattanooga now enable Ringgold subscribers to call an additional 112,000 telephones free of toll. This service is just one more advance for this company, which has kept pace with area growth since it was founded in 1912 with only 8 subscribers. The telephone company has grown from 425 subscribers in 1950, when it converted to dial, to about 1,750 the first of this year.

In 1958, Ringgold received an REA loan to expand and improve service. It built a new building and installed modern, larger central office equipment. The company's outside plant is capable of providing area coverage to all homes and businesses in its service area. □

NEWS IN BRIEF...

WISCONSIN: The University of Wisconsin is establishing an International Cooperative Training Center where men and women from the developing countries can learn co-op methods and techniques.

MINNESOTA: The Red River Valley Cooperative Power Association has voted to do away with all time controls previously required on electric water heaters. It also voted a \$75,000,000 advance payment on its loan from REA.

INDIANA: The Whitley County R.E.M.C. has put up 16 billboards throughout its 14-township area in order to let people know that it exists and what areas it serves.

KENTUCKY: The Public Service Commission has awarded the Fleming-Mason Rural Electric Cooperative Corporation the right to serve the new Fleming County Hospital on the ground that the co-op is able to provide the required service, previously has served the area where the hospital is located, and was established to benefit the same rural people of Fleming County the hospital will serve.

GEORGIA: The Hart County Electric Membership Corporation has

warned its members that locating wells directly under high voltage wires is more dangerous than rattlesnakes. It says: "Never attempt to pull pipe from a well if it can possibly reach our high voltage wires."

LOUISIANA: Another mailing of patronage capital credits last month brings to \$750,000 the amount that the Southwest Louisiana Electric Membership Corporation has mailed to its members, "despite the fact it serves its almost 31,000 consumers with the lowest electric rates in Louisiana."

OHIO: Hancock-Wood Electric Cooperative sold 418 security lights in 1961 as compared with 97 in 1960. . . . The Buckeye Rural Electric Cooperative issues to every new subscriber a loose-leaf booklet containing all the information about rates and service that he will need. Then, stapled into its monthly newsletter from time to time, appear punched sheets containing new and additional information, ready to be inserted into the booklet.

IOWA: The advantages to business of locating in rural Iowa are described in a handsome new brochure issued by the Iowa Association of Electric Cooperatives. □

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OFFICIAL BUSINESS

Month of Birthdays . . .

May 1962 is a month of birthday celebrations: REA's 27th, and the Department of Agriculture's 100th.

To inaugurate the Department's centennial year, more than 1,500 national and international food and agriculture authorities will meet in Washington on May 15 for a three-day World Food Forum. President John F. Kennedy is slated to address the banquet on the subject "American Agriculture in a Changing World." Secretary of Agriculture Orville L. Freeman will be moderator of the first plenary session on "Agriculture and American Life—1862-1962."

The roster of the 41 speakers at the gathering, to be held at the Sheraton Park Hotel and in three Government auditoriums, includes former Vice President Henry A. Wallace, Senator J. W. Fulbright, of Arkansas; Senator Allen J. Ellender of Louisiana, and Rep. Harold D. Cooley of North Carolina.

The Forum has a four-fold purpose:

(1) To recognize the preeminence of American agriculture and agricultural technology,

(2) To provide an international exchange of views on current and emerging world problems by world authorities in the fields of agricultural techniques, economics and sociology.

(3) To advance the application of modern agricultural science in less-developed countries of the world, and

(4) To signal the Department's 100th anniversary. May 15 marks the 100th anniversary of the date on which President Abraham Lincoln signed the enabling legislation creating the Department.

Forum delegates will visit the Agricultural Research Center at Beltsville, an 11,000-acre establishment devoted to basic research on breeding, nutrition, management, physiology and diseases of plants and animals.

Two centennial year exhibits will open on May 14, in the Administration Building of the Department of Agriculture. They are "The Changing Faces of Our Land" and "The Meat Miracle."

More than 650,000 photographs were viewed in a search for 300 that depict, in the first exhibit, the development of American agriculture over the past century. "The Meat Miracle" tells consumers the story of an abundant meat supply — its production, distribution, nutrition and healthfulness. Both exhibits will be available, later in the year, for viewing throughout the country.

The 27th anniversary of the Rural Electrification Administration will be observed with a birthday ball at the National Press Club in Washington, D. C., on May 11.