

JANUARY, 1944

*Bright  
Spots*

## **BOMBERS** *from Georgia!*

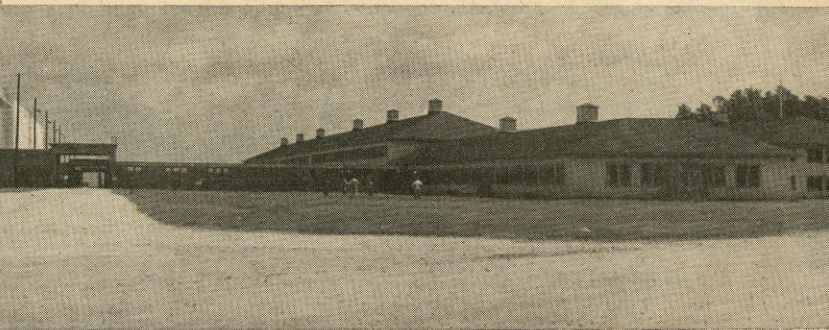
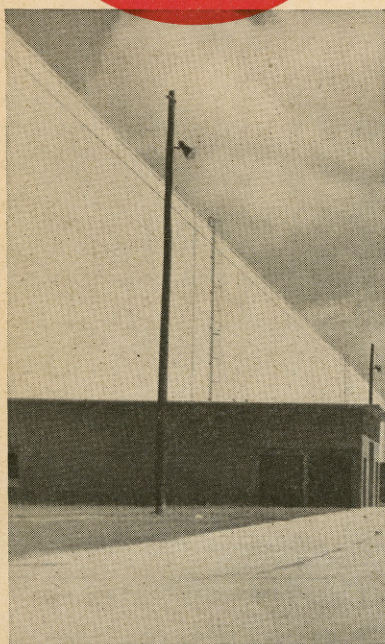
IT'S CALLED the Marietta Aircraft Assembly Plant (M.A.A.P.) by the War Department. But it's more than that. It's called the Bell Bomber Plant by the Bell Aircraft Corporation — and it's truly a bomber factory. For in it thousands of trained craftsmen and women are machining and

fabricating and assembling the thousands of parts that go into the new U. S. Army long range, multi-engine bombers!

We refer, of course, to Georgia's only — and one of the world's largest — aircraft plant. That located between Atlanta and Marietta, which was designed and built in record time by Robert and Company Associates and more than 100 subcontractors, under the supervision of U. S. Army Engineers. The plant is owned by the federal government and operated by the Bell Aircraft Corporation

*(Continued on next page)*

*THE RAILROAD BAY and receiving platform is seen in picture above. It is separated from the main building by an insulated wall, and is illuminated by some 25 footcandles of fluorescent light. Below, a view of the south end of the main building, connected by passageway to the engineering and administration buildings at right. Note protective floodlights on high poles.*



# LOST... 981,000,000 MAN-HOURS of VITAL WAR PRODUCTION



IN SPITE OF LESS TRAVEL and reduced speed, automobile accidents to war workers in 1942 resulted in a direct loss of 981,000,000 man-hours . . . enough to assemble 32,630 heavy bombers.

It's up to everyone to help reduce these night traffic accidents. You can help by doing these things:

- 1—Learn after-dark hazards . . . drive accordingly.
- 2—Have car lighting, brakes, and tires checked regularly.
- 3—Learn and observe all traffic rules. Your life depends on it.
- 4—If you walk at night, wear something white.
- 5—When crossing streets, look both ways, watch traffic signals.

Ask a Georgia Power Company industrial power engineer for specific assistance or cooperation in helping your firm reduce "off job" traffic accidents.

## '44 Production Goals

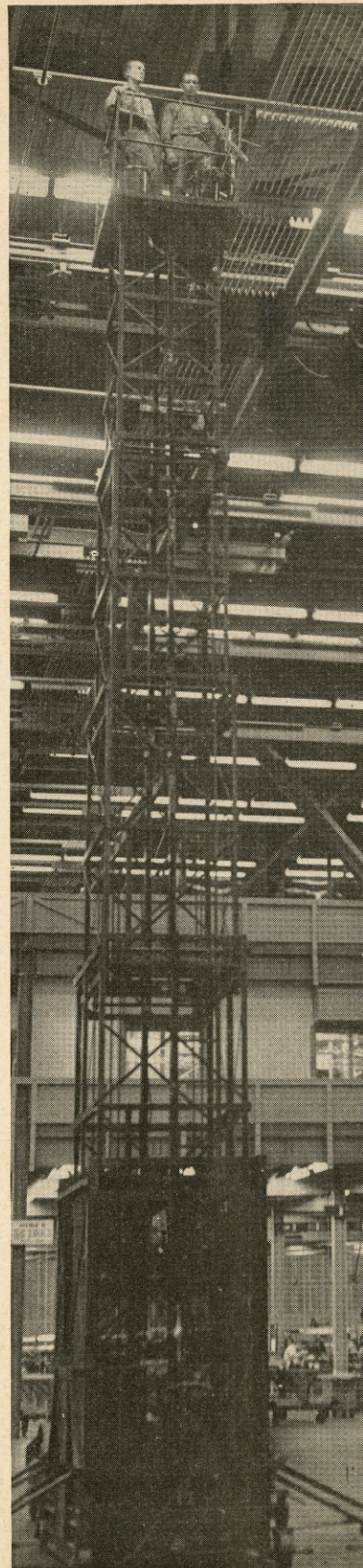
War Production Board sets over-all arms production goals at 80% over 1942; munitions, 136% over 1942; aircraft tonnage, 325%; naval ships, 115%; merchant ships, 130%; ordnance and signal equipment, 80%; large trucks, 100%; ammunition—small arms—60%; ammunition—artillery—25%; military establishments and bases, 30%; tanks, 75% ★ Navy announces top goal of 65,000 landing craft ranging from 450-foot dock ships to amphibian tractors—20,000 already produced, 25,000 on order, and authorization for 20,000 pending in Congress, in addition to 15,000 miscellaneous small craft, rubber boats, rafts, etc., needed to supplement forces.—*WASHINGTON REVIEW*, U. S. Chamber of Commerce.

## BRIGHT SPOTS

Vol. X No. 1 JANUARY, 1944

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P. O. Box 1719, Atlanta (1) Ga.



# Windowless Bomber Plant Bright With 58 Miles Of Light

(Continued from page one)

under the eagle eyes of U. S. Army Air Forces.

"The Bell Bomber Plant is one of three now producing the new U. S. super-Fortresses—B-29—that have been said officially to be capable of carrying bombs nonstop from the United States to Berlin and back," according to a United Press release.

The main assembly building is large enough to house the nation's total annual cotton crop. Several football games and several three-ring circuses could be carried on simultaneously in the main assembly bay. Comparable in size to the Willow Run plant, this Marietta plant is one of the outstanding industrial plants in the South.

The complete project consists of the mammoth main assembly building and eight major auxiliary buildings—the steam-heat plant, paint shop, engineering and administration buildings, final assembly and clean-up building, hospital and employment building, dead storage building, and repair shop.

## POWER TO SERVE A CITY

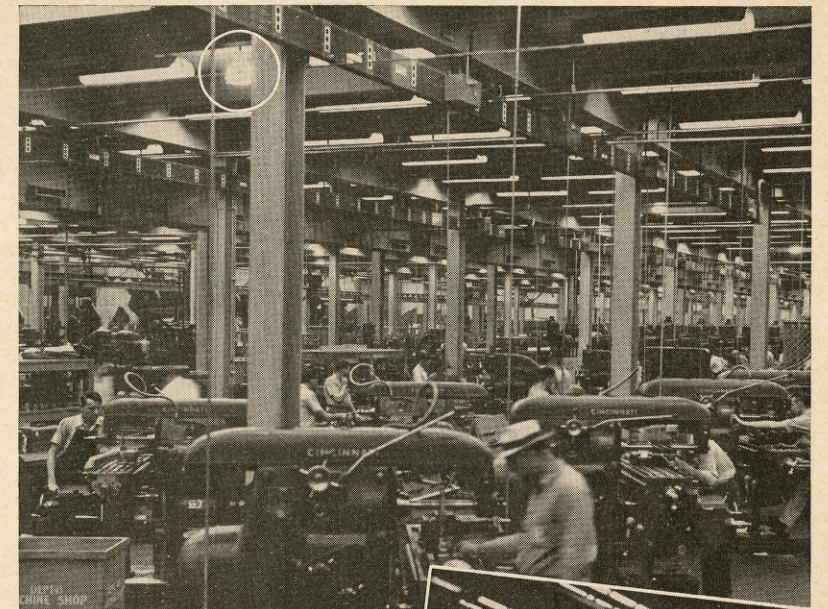
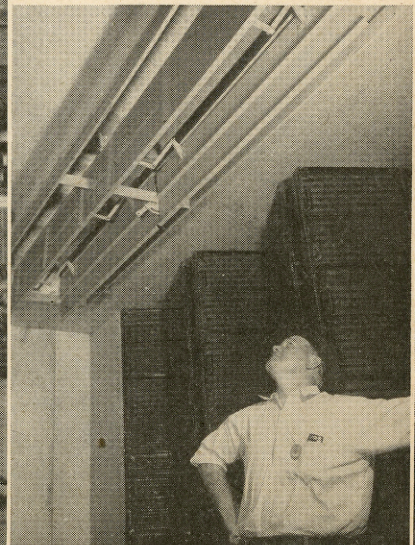
Electric power for the big cranes, lathes, presses, milling machines, cooling and ventilating fans, refrigeration and other electric equipment is supplied by the Georgia Power Company—enough to take care of the needs of a large city.

The blacked-out, windowless main assembly building is scientifically illuminated by high-bay, high-level fluorescent lighting. The air is freshened and the temperature regulated by a system of 83 huge cooling and ventilating fans. To attain the precision measurements of the bomber parts, temperature variations in the metal-working and fitting areas must be kept within 6 degrees Fahrenheit. Twenty-nine more huge fans ventilate other sections.

Bell and Army engineers mustered maximum ingenuity in streamlining the molding, machining and manufacture of the deadly B-29 bombers. And, within less than two years after construction on the bomber plant began, the *Atlanta Journal* reports, bombers are rolling off the assembly lines on their way to wreck the Axis!



**MAINTENANCE** of the high levels of light in the Bell Bomber Plant is a major operation in itself. Burned up to 24 hours a day, each of the 36,000 200-watt fluorescent fixtures must be cleaned, and the tubes and starters replaced, every several months. The maintenance crew reaches most of the fixtures from the network of 25 miles of catwalks among the high beams. Above, C. L. Hamontree, Ralph H. Davis and Paris Hunter "keep 'em bright and lighted." At left, the adjustable platform from which are serviced fixtures not accessible from catwalks. Below, a "weather engineer" looks at one of the steam-heated coils over which is blown fresh air that is cleaned by the black filters and a "wash" before comforting the bomber makers. Walther P. Shelton is maintenance superintendent. J. F. Whitehead, Jr., Georgia Power Company lighting specialist, helped design the lighting system.



**SKILLED MACHINISTS** shape small plane parts to precision requirements in a section of the Bell Bomber Plant's mammoth machine shop, in picture above. High-bay (17 feet up) fluorescent fixtures provide 50 footcandles of good lighting. At right, Mrs. Leola Irvine and Mrs. Vera Austin do their tasks in the fuselage department efficiently—thanks to plenty of light and other good tools. Yes, Bell Bomber Plant workers need plenty of wholesome food—and they get it in eight modern cafeterias. After lunch, hundreds join in group singing.

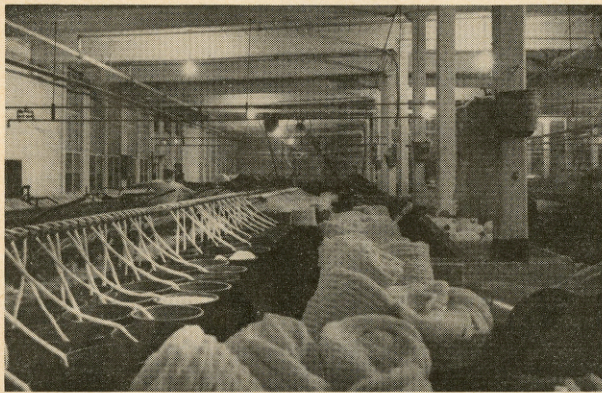




## **CORD-MILL EMPLOYEES** *See, Work* **BETTER**

SINCE THE WAR put Uncle Sam in uniform to safeguard freedom, dozens of Georgia mills and factories have increased their production and improved their employe morale by modern-

izing their lighting systems. And those are two important gains when war-contract schedules and shortages of manpower put a premium on them.



**IMPROVED VISIBILITY** in the card and slubber sections of the Mallison Braided Cord Company mill near Athens is striking in these "before" and "after" views. After the bare droplights were replaced with modern industrial fluorescent fixtures, the streaky, glary light was succeeded by glareless, uniform light that brings every detail of machinery and cotton fiber into easy view.

Among such enterprising Georgia industrial firms is the Mallison Braided Cord Company, pioneer rope factory near Athens. Conscious of the inadequacy and inefficiency of the wiring and lighting of the cord mill, a Georgia Power Company lighting engineer had endeavored since 1933 to get the management to invest in a modern lighting system.

But the matter rocked along until this year when the mill's management was changed. Bruce N. Lanier, the new vice-president, knew from observation and experience in West Point mills the advantages of good lighting. So he called on R. A. Arthur, the Power Company engineer, to design a modern system of wiring and fluorescent lighting for the Mallison mill.

The beneficent results are pictured on this page. The spinning machines are shown above—as lighted by bare droplights that yielded about 4 footcandles of glary light, and the new twin-40-watt tube fluorescent fixtures. The new installation supplies 20 footcandles of light throughout the mill—in the card, slubber, spinning, braiding and weaving sections.

Ask any of the young or old men and women who are waging the war of greater production in the mill, and they will speak strongly in favor of the new lighting. "I don't go home with burning eyes, or headaches now." "We sure do thank the company for making it easier for us to do our work better and faster."

And Mr. Lanier beams with a "thank you" to Mr. Arthur "for the splendid job you have done in the layout of this lighting system."

# Promotional Lighting -- "Dusk To 10 P. M."

## Change In Conservation Rules Makes Compliance Easier

VOLUNTARY COMPLIANCE with the official recommendations for conservation of electricity in the National Conservation Program was made easier for most merchants last month when the War Production Board lightened the rules for saving electricity through reduced use of outdoor, display and show-window lighting.

Approved use of these types of non-essential lighting was extended from any two hours each evening to burning from dusk to 10 p.m.

The changes are covered in Amendment No. 1 to the Report on Voluntary Conservation Program for Electric Utilities, which reads as follows:

"Effective immediately, in accordance with the unanimous recommendation of the Special Task Committee on Conservation, paragraphs (1) and (3) of the Report on Voluntary Conservation Program for Electric Utilities are hereby amended to read as follows:

"(1) *Indoor and Outdoor Advertising, Promotional and Display Sign Lighting*

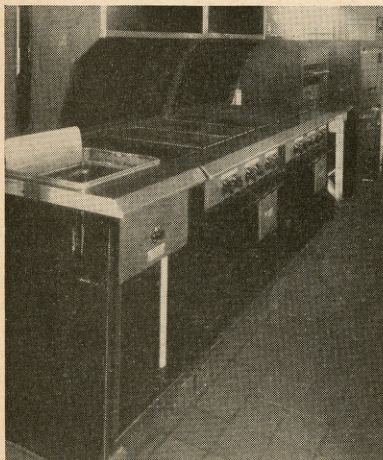
- "(a) Daytime: Eliminate completely.
  - "(b) Nighttime: Reduce burning hours so far as practicable, but in no case burn after 10 p.m. in terms of local time.
  - "(c) Electric signs necessary for direction or identification of places of public service, such as public restaurants, public lodging establishments, transportation terminals, etc., may be operated during nighttime but only while the establishment is open for business.
  - "(d) Reduce lamp wattage of all signs by the maximum practicable amount.
- "(3) *Show Window Lighting which does not provide essential interior illumination.*



THIS SHOE STORE in Augusta and other commercial establishments may burn window lights and signs from dusk to 10 p.m. now and still comply with the National Conservation Program.

- "(a) Daytime: Eliminate completely.
- "(b) Nighttime: Reduce burning hours so far as practicable, but in no case burn after 10 p.m. in terms of local time.
- "(c) Reduce wattage by maximum practicable amount."

## Staggered Cooking Schedule Saves KWH & \$



ALL-ELECTRIC is the modern kitchen of the King and Prince Hotel on St. Simons Island, which is on war duty.

COMMERCIAL ESTABLISHMENTS that do their cooking and baking electrically can reduce their power demand and net bill by maintaining a staggered schedule for using the va-

rious cooking equipment. Arranged so that a minimum of equipment is turned on "High" at one time, here is a schedule for a commercial food establishment serving 16 hours daily:

	TIME (A.M.)										TIME (P.M.)							
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8		
Ranges.....	H	H-M	M	M	M	M	L	L	L	L	L	L	O	H-M	M	M	L	O
Roasting Ovens.....	O	O	H	H	A	A	A	A	O	O	O	O	O	O	O	O	O	O
Fry Kettles.....	O	O	O	O	H	A	A	A	A	A	O	H	A	A	A	A	O	O
Broilers.....	O	O	O	O	O	H	H	H	H	M	L	M	H	H	H	H	O	O
Bake Ovens*.....	A	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	H
Stock Kettles (Minor).....	H	H	H-L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	O
Coffee Urns.....	H	H	L	L	L	L	H	L	L	L	L	L	H	L	L	L	O	O
Griddles.....	O	H	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Waffle Bakers.....	O	H	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Egg Boilers.....	H	L	L	L	L	L	O	O	O	O	O	O	O	O	O	O	O	O
Toasters.....	O	H	H	H	H	L	L	L	L	L	O	O	H	H	L	O	O	O
Steam Tables.....	O	O	O	O	O	H	L	L	L	L	O	O	H	L	L	O	O	O

H—Switches on High; M—Switches on Medium; L—Switches on Low; A—Devices operating automatically; O—Switches Off.

\* Bake Ovens operating at night. Start to preheat at 8 p. m. ready for baking at 10:30 p. m. Off at 6 a. m., baking in stored heat until 8 a. m.

## Power Engineer's Ingenuity Solves Equipment Problem For War Plants

BEN ASKEW, veteran industrial power engineer of the Georgia Power Company, contends that there're more ways than one to lick an electric-service problem. And he is always careful to see that it is solved the most economical way, war or no war.

War posed a dual problem for Ben not long ago, but it didn't tax his ingenuity long.

The manager of the Atlanta factory of the General Motors Corporation put this problem before Ben early this year. "We are moving an entire war-work plant into our idle No.1 building. We will use 1400 KVA (kilovolt-amperes, or kilowatts) with 460-volt equipment. How can we quickly get 460-volt service over the present 550-volt lines, still use the 550-volt compressors and lighting, and be able to change back to full 550-volt service as quickly as possible after the war?"

Ben's knowledge of the plant and its electric transformers and his knowledge of electric power brought forth a plan then and there. It was to run the 19,000-volt service into the 22,000-volt windings of a 11,000/22,000-volt transformer bank already installed, and thereby get 460-volt service off the 550-volt transformer leads. A line run across the roof to another transformer bank would supply the needed 550 volts for compressors and lighting—without moving any equipment.

This plan was checked, re-checked, and approved and the service was arranged for the new war plant.

Two months later, officials of the Aircraft Division of the Firestone Tire and Rubber Company put a similar problem before Engineer Askew. But in this case the 19,000-volt transformers lacked 22,000-volt windings, so the customer was already planning to have new transformers installed that would cost about \$8,000. As great as the cost was, the problem was a matter of delaying production several months to obtain the transformers. It also would

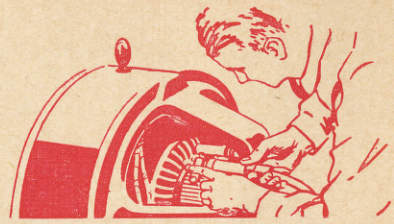
mean delay in converting back to 550 volts after the war because of the proposed substation changes.

Again, Ben had a ready answer. He located two idle 550-volt transformers. They were connected to the 550-volt lines and gave 110 volts on the secondary windings. The 110-volt secondary windings were connected to the 550-volt lines in the manner of a voltage regulator. This caused the 110 volts to "buck" the 550 volts, and reduced the voltage to the desired 440 volts.

Both plants were put in operation much quicker and with less cost, thanks to Ben's ingenuity. And the manufacturing and substation equipment can be used right after the war as before!



WE ARE, in a sense, in the postwar period right now; its problems are influencing today's decisions, and certainly the events of today will spill over into tomorrows. The only way we really can plan for the future is by giving direction to the present. A generation ago we prepared today's events, not by what we then planned for today, but by what we did then about yesterday's problems. The events of the next generation are today being determined. That is why it is so important now that we not merely plan academically for the future, but act constructively for today.—Ralph Bradford, general manager, Chamber of Commerce of the United States.



## 15 Ways To Keep Motors Tuned Up

THE NEED to keep precious electric motors in repair and operating efficiently was stressed recently by BUILDINGS and BUILDING MANAGEMENT Magazine. It offered the following points for motor maintenance:

1. Remove dirt from commutator cover and surrounding parts first, when making inspections or repairs, to prevent dirt from falling into the motor.
2. Check copper surface of commutator to make sure it has a smooth, polished appearance and is free of copper beads, dirt or grease.
3. Be sure that brush-holder mechanisms are seated on brushes and shunts, and terminals are tight.
4. Wipe carbon dust from cables and brush-holders.
5. Lift springs and lower brushes in carbon ways to remove dirt, but don't snap these springs, as this may chip brushes.
6. Replace short or broken brushes and make sure the new ones are of the same grade as those now in motor. If only one brush is replaced, grind the new one to same length as others.
7. Inspect all connections in motor for tightness, making sure all are tight to avoid future trouble.
8. Clean outside of motor first before turning a screw on outside case or cleaning inside.
9. Keep bearings free from dust, and keep bearings covered when bearing assemblies are removed from motor.
10. Blow dust and dirt from armature, preferably with a clean, dry, compressed air spray. Wipe armature clean of oil and grease with a cloth saturated with carbon tetrachloride.
11. Blow out interior of motor with air spray and wipe with cloth soaked with carbon tetrachloride.
12. Use only carbon tetrachloride and carefully remove dust and dirt from brush-holders and cables.
13. Don't ever lubricate the commutator, as this will collect dirt, grease and carbon dust in grooves between segments, favoring shortcircuit trouble.
14. Replace any broken springs or shunts and check all connections for cleanliness and tightness.
15. Remove, clean and repack shaft bearings at least once a year. Use only the right, properly approved ball-bearing grease.

BEN ASKEW, Georgia Power industrial engineer, explains the scheme for supplying power to 440-volt machinery in the Atlanta plant of the Aircraft Division of Firestone Tire and Rubber Company to two of that firm's engineers. Standing is F. I. Narzisi, plant engineer, and at right is J. P. Sullivan, procurement manager.



## BETTER LIGHT Helps Schwob Suit Making

GOOD WORKING conditions pay off in a clothing factory, too! If you don't believe it, just ask Simon Schwob, president of the Schwob Manufacturing Company in Columbus, or any of his associates.

To increase the production of its several hundred women employes and make them happy in their jobs, this national manufacturer of men's suits recently remodeled all four departments of the plant at 945 Broadway. High open-beam ceilings were sealed. New fluorescent lighting equipment was installed. New ventilating fans and new rest rooms were provided.

All these improvements made work easier, pleasanter, and more attractive for the makers of pants, vests and coats. The improved illumination stepped up the production of the women so that those on piece work increased their income and those on hour-pay became more proficient for promotions.

The new wiring and lighting system was designed free of charge by a Georgia Power Company lighting engineer, Joe B. Browder. He did the job in consultation with D. E. Woodman Associates, management engineers, retained by Schwob.

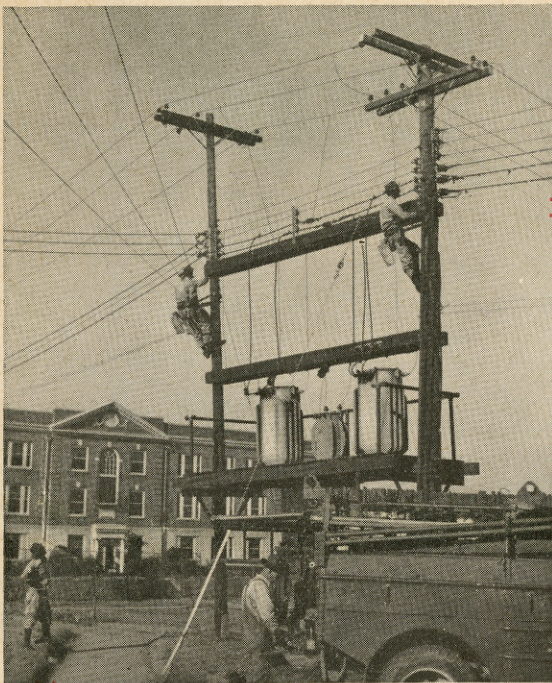


THE ABOVE PICTURE shows the type of lighting that prevailed in all four departments of the Schwob Manufacturing Company in Columbus before it was relighted in October. Bare bulbs on ceiling dropcords supplied spotty, glary general illumination that was supplemented by intense illumination from local fluorescent fixtures and sewing-machine lights. Such lighting was hard on the workers' eyes, made it difficult for them to see accurately or to work efficiently.



A PLANNED lighting system overcame the illumination defects simply, economically, and attractively, as these two pictures show. In the pants department, seen above, four rows of modern fluorescent lights supply some 25 foot-candles of even, eye-easy illumination. (The blurs in the picture were caused by quick movements of the women workers as they pursued their specialized operations.) The coat, vest and pressing departments have been similarly re-lighted for more efficient production. The special-order department is pictured at left. Sight-soothing illumination speeds the manufacture of uniforms for police, guards and other purposes, in this busy section.





★  
**SOLDIERS  
ON THE  
*Wiring Line!***



IN THE SERVICE of our nation are the 243 linemen of the Georgia Power Company. Soldiers on the wiring line, they maintain the battlelines of the home front!

They do not wield guns or planes or bayonets, but they do wield pliers, wrenches, and rigs. They use them to keep the homefront battlelines — transmission and distribution lines throughout the state — in tiptop shape. For they know how essential power is to the production of textiles and food and ammunition and soldiers for our victorious war effort.

Our experienced crews of line-

men not only maintain the equipment of the Company but also that of its power customers — by special arrangement. For example, our Milledgeville line crew is seen above “going over” the substation of the Georgia State College for Women in the Baldwin county seat. They make sure that this substation will supply the power to light and otherwise accommodate the college buildings now packed with WAVES and college students.

In doing such work, our linemen are truly soldiers on the wiring line, for they are maintaining the battlelines on the home front. And we proudly salute them!

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