



ALLIS-CHALMERS

SCOPE

WINTER 1969



AT HOME ON THE FLORIDA RANGE



SCOPE

Magazine for Employees

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ON THE COVER

That top view may look like a stampede but—as the scene below it shows—the activity in reality was part of an orderly roundup of cattle. It took place when a cattleman in Florida found a new use for the Terra Tiger all-terrain vehicle. The little rigs do an effective job of herding. Page 8



A ripened wheat field culminates a farmer's labors and hopes. It also is a challenge to the professional harvesting crews and to combine servicemen. Page 2

One of the world's busiest iron ore ports is also one of its newest—in Angola (Portuguese West Africa). Allis-Chalmers equipment had an important role in construction phases of the project. Page 10

Wire—hundreds of feet of it—is just one of the many things that go into the making of switchgear. People contribute to the product's form and function. Page 13



Right in the heart of the Land of Lincoln, 32,000 ballots sped through computers at the Springfield Plant on election night last November. It was the third time that the plant's facilities had been utilized to tally vote results. Page 18



Service: Where The Action Is



Rolling from field to elevator took only minutes as combines gathered this crop.

Put yourself aboard a *Gleaner* combine. Guide it over acres of heavy-headed wheat, laying a dusty trail of crisp, broken stems and chaff. You're a professional wheat harvesting contractor, with payroll, service and repair costs, plus feeding and lodging costs for the crew. So you look for available, reliable service and parts during your busy months in the wheat corridor. With Allis-Chalmers, you get it.

Hundreds of custom combiners operating 1,000 *Gleaner* combines found more of this field service available from Allis-Chalmers in 1968 than ever before in the 40-year history of professional wheat harvesting in North America. Started by a few Oklahoma farmers who harvested their neighbors' wheat, custom combining has become a multi-million dollar business. It has spread from wheat into soybeans and other combinable crops. It provides all or most of the income for several hundred operators, who in turn employ other hundreds of drivers and helpers.

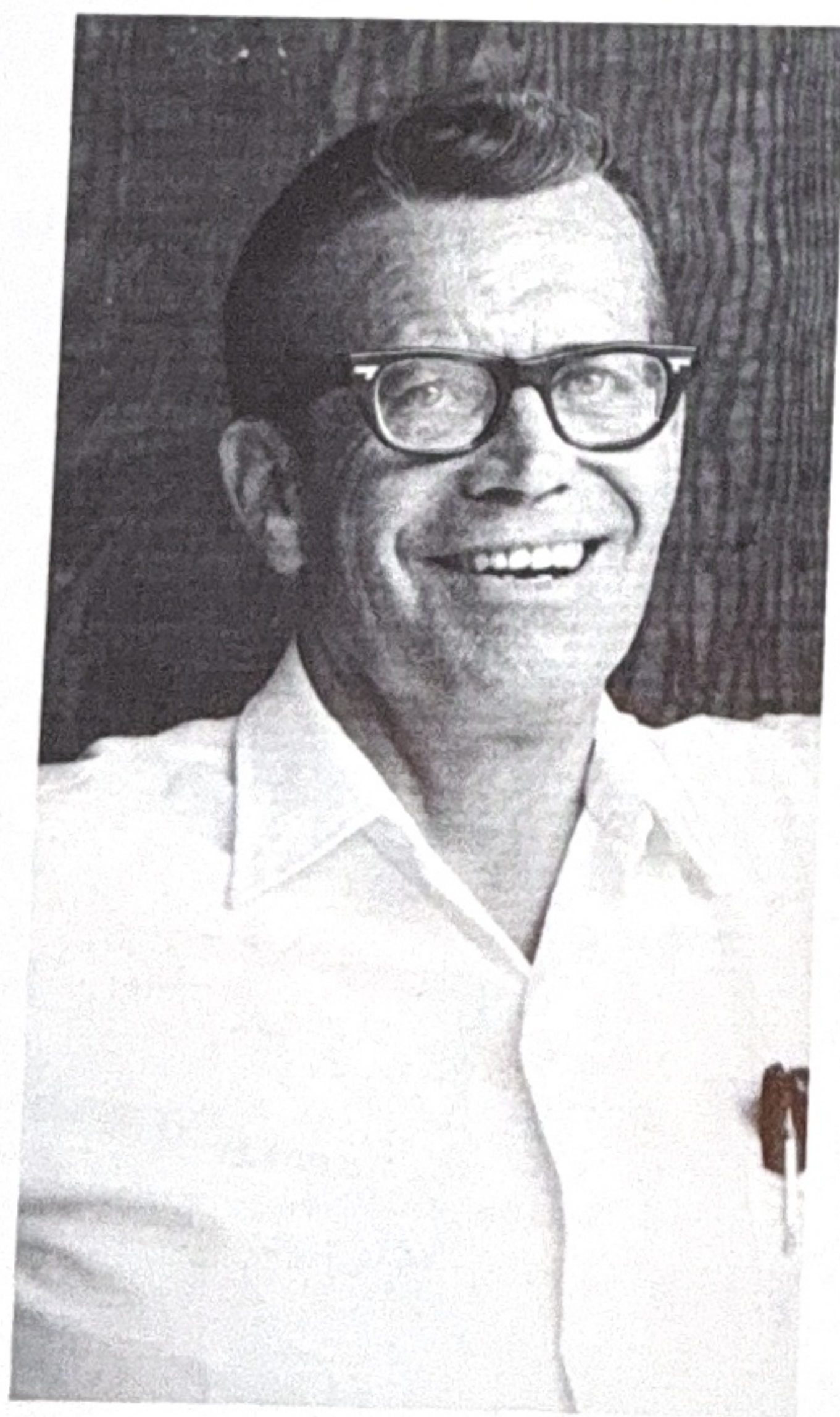
The wheat corridor in which these professionals operate runs through northern Texas, Oklahoma, Kansas, Nebraska, North and South Dakota, Montana, Colorado, Wyoming, Manitoba, Saskatchewan and Alberta. The crops mature progressively northward; thus, combiners can start in May and end in September.

"We've been providing backup for our wheat corridor farm equipment dealers for years, but we knew from the combine ownership trend that 1968 would be special," said Lewis (Abe) Lincoln, project coordinator. "Many combiners had built up their *Gleaner* fleets so they could take lots of bushels from many acres

Caravan routes: Solid line, station wagon; other, van and wagon.



These men are among the FED service personnel who got a maintenance briefing in Wisconsin before the pre-harvest clinics. From the left are Ralph Nettleton, Wichita; T. S. Brownlee, Atlanta; L. C. Bills, Dallas; W. H. Jackson, Amarillo; C. J. Burnham, Omaha; Billy Whitfield, Wichita, and Bobby Fairley, Milwaukee.



Project coordinator Lewis Lincoln found his white shirts a luxury.

fast. But more combines at work mean more wear and tear."

Service availability for 1968 involved hundreds of Farm Equipment Division service personnel, dealer personnel and representatives of the division from West Allis.

While professional harvesters early last spring were dickering for new equipment, handling truck and combine overhauls, outfitting radio equipment and promoting future customers, FED was busy with its plans.

"We scheduled a series of service clinics in the southwestern pre-harvest rallying centers," Lincoln said. "At each of these we planned to spend hours in formal training, plus days in helping combiners prepare to help themselves. We would stress preventive maintenance, offer a new printed guide to better combining with a key to problems and remedies and deliver more on-the-spot help by specially trained people.

"FED branch servicemen took special training at the sales farm near Milwaukee in early spring, prepara-

tory to working with the 350 dealers and the combiners."

The servicemen also were ready to take turns staffing two station wagons and a semi-trailer truck van, all radio-phone equipped. These would follow the harvest front, issuing emergency parts to dealers from the van and bringing combiner and dealer together for fast results. The station wagons were to work on opposite sides of the wheat corridor.

Service clinics were held in late May in Vernon and Seymour, Texas, and Altus and Frederick, Okla. While all were well attended, the clinic in a quonset hut May 27 in Frederick attracted almost triple the expected volume. Some 150 people found seats or stood, eager to learn about the anticipated field service and pick up service tips.

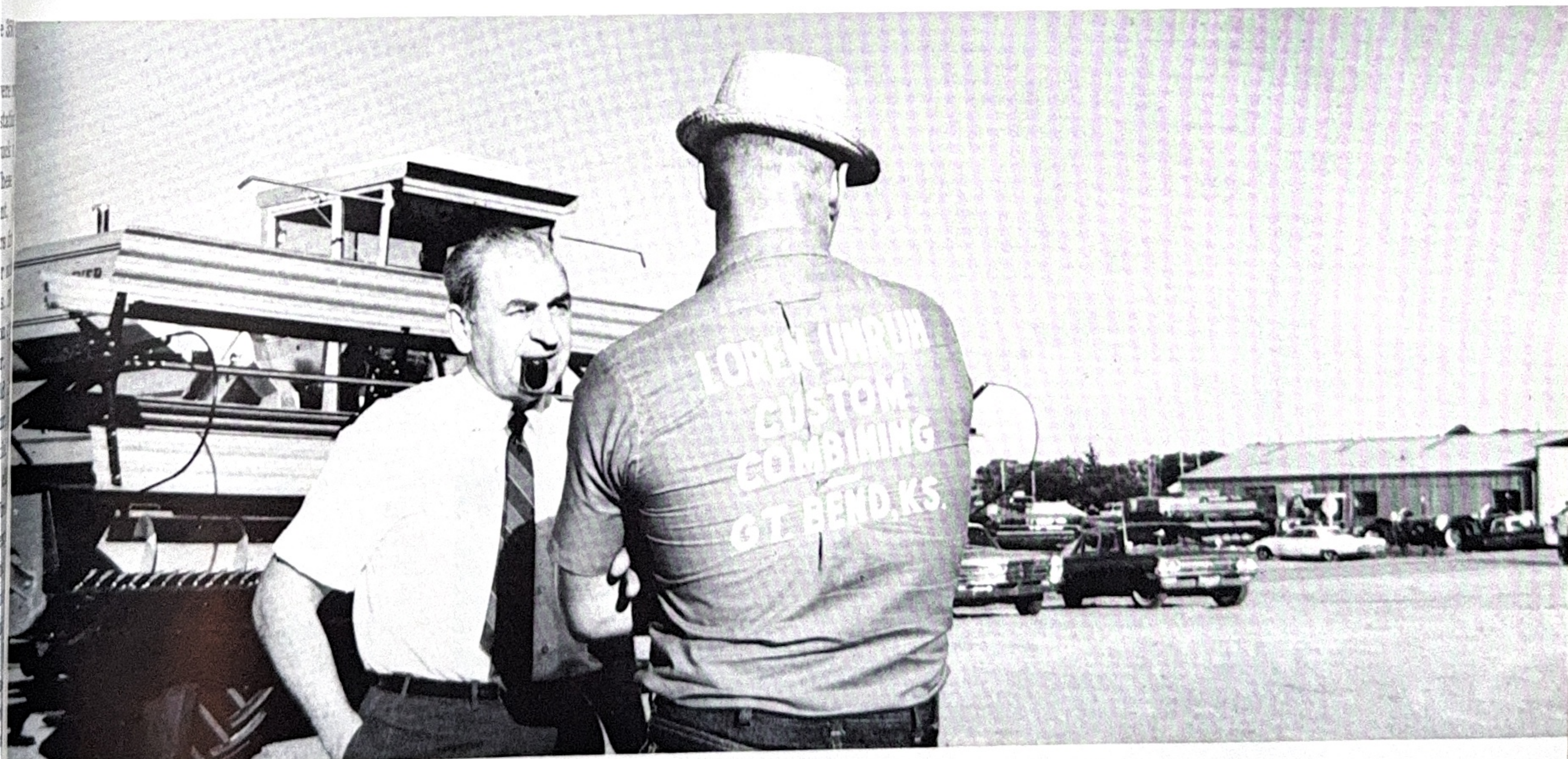
That's because the clinic was advertised on the local radio station, because posters giving time and place of the clinic were hung in store windows and because advertisements were run in newspapers. These mes-



Practical, consistent advertising helps the professionals attract business.



Owner J. H. Esau, Inman, Kas., directed parking of piggyback combines.



The Frederick (Okla.) clinic was on the doorstep of the Stuenkel Implement Co., FED dealership, where harvesters came daily.



Service clinics attracted combiners like this group in Frederick.

sages reached combiners camping as far as 50 miles away.

Rain slowed the start of the harvest. However, once on the road, the combiners traveled in convoys.

"Wherever clusters of combiners stopped for a week or two, to work through a territory, dealers were busy," explained Wilbur J. McGuire, Valley City, N. D., who operates four *Gleaner* combines. "We worked on our own machines in Frederick because of better weather than that back home. We needed parts for immediate use and future stock."

However, combiners were not inclined to overstock. They wanted local service, as well. Careful planning for extra heavy parts stocking by wheat corridor dealers assured that almost all needs were satisfied at once. Rush shipments of other parts came at intervals from Independence, Mo., where the *Gleaner* combines are produced, and from Parts Central in Illinois.

"There was no telling when a com-

biner with a problem would contact us, even in the middle of the night," said R. E. Culbertson, one of several West Allis service instructors.

"We were at Vernon, Texas, when a combiner, camped 70 miles away at Throckmorton, Texas, called at 11:30 p.m. He required a complete component replacement. The van carried the item and by noon our crew was alongside the combine, making the change. By mid-afternoon, the combine was rolling."

Farther north, a combiner at Sydney, Neb., called the van at Martin, S. D., 300 miles away. Culbertson drove to Sydney, starting at noon, helped the combiner plan for a repair job and got it started, then drove back to Martin. Bedtime that night was 2:30 a.m.

"The operators would even drive 100 miles after work to find us," said Richard Howell, another service instructor based at West Allis. "Although our vehicles might have been 300 miles apart, the combiners



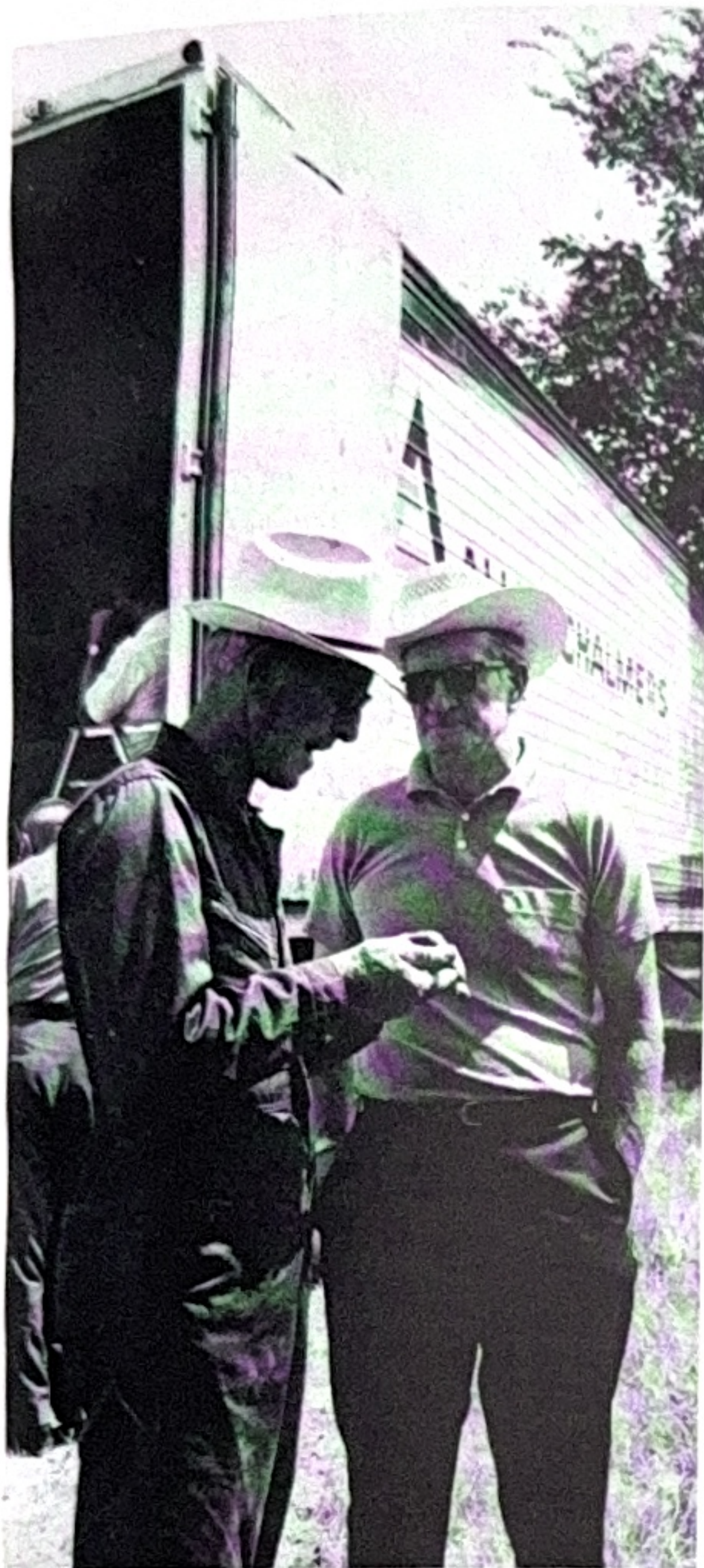
tracked us through local dealers or other combiners. Radio announcements wherever we stopped let them know our location."

The periodic moves carried the van from Seymour and Frederick to Enid, Okla., Dodge City, Kas., Colby, Kas., Holyoke, Colo., Sydney, Neb., and Martin, S. D. It went on to Pierre, S. D., Bismarck, N. D., Fargo, N. D., and finally Regina, Sask.

The van and the two station wagons, with the 45 participating Allis-Chalmers men, logged 5,000 miles. An estimated 225 combiners were helped by the 350 dealers.

By the time the last bushel was harvested, the payoff of the 1968 caravan was taking form. Owners of *Gleaner* combine fleets said that they were thinking of expansion in 1969 and purchasing new models; owners of competitive combines were making comparisons with the Allis-Chalmers service as they headed home.

Said R. E. Bruse, manager of the Amarillo FED branch: "Reports are



Presence of the parts van was a "magnet" for combiners.

exceptionally good. We've learned that some operators will switch to *Gleaner* combines next year because they know they'll get parts."

Added Howard Merrow, salesman at Wichita: "Without the caravan, dealers would have encountered some unhappy customers. But such wasn't the case; they got promised help."

The autumn of 1968 found FED personnel already busy planning the 1969 field service program.

Such far-ahead planning is really quite important to combiners, dealers and Allis-Chalmers. Combiners may have expanded their own markets beyond those of 1968. A combiner who in June had plans for getting along in 1969 with his 1968 fleet may change his mind.

While hometown dealers are providing parts and service to get the 1968 fleets in condition for next season, they're also promoting new equipment sales. Allis-Chalmers is also beaming promotional literature at the combiners. ■



Proof of the harvest was golden wheat kernels, bursting with the goodness of sun and soil, ready for trucking to an elevator.

ROUNDUP ON WHEELS

There's something new in Florida cattle ranching: *Terra Tiger* all-terrain vehicles have out-performed horses as cowboys' mounts for herding cattle.

At W. B. Brown's ranch in the Everglades near Belle Glade, three of the Allis-Chalmers rigs scampered after stubborn beef cows one recent afternoon. The cowboys were conducting a semi-annual roundup of some 400 head.

Several days of rain had turned sections of the pastures into quagmires. Cattle refuse to cross such mudholes, and it's even difficult to get a horse across. But *Terra Tiger* units don't fear mud, so Brown decided to try them.

Brown heads a dealership at Margate, Florida, for the Outdoor Products Division and the Industrial Tractor Division. When he saw how the all-terrain vehicles operated in a field behind his store, he could envision their possibilities for cattle herding.

Brown had one unit trucked out to his 770-acre ranch to try it. He learned that one *Terra Tiger* vehicle would get the animals moving but that two more were desirable to prevent cattle from breaking away from the main body.

The three *Terra Tiger* units formed a half-circle behind 40 to 50 head and effectively moved them—sometimes at a walking pace, sometimes at full gallop. When a head-strong cow broke away, one cowboy-driven vehicle would go after her. Occasionally, the *Terra Tiger* units would team up with horsemen to speed the drive.

The idea was to bring in individual herds from their pastures to a central penning area where cows were dehorned, branded and pregnancy-tested; then the cows were driven back to their pastures, a half-mile away.

"These *Terra Tiger* units are great," one cowboy said. "Herding cattle is a tough job for horses, especially when

it's muddy. But these rigs don't tire out. And, besides, it's a lot more fun than riding a horse."

Horses don't make any noise, he pointed out, but the *Terra Tiger* vehicles do, convincing cows to move.

Brown has demonstrated *Terra Tiger* units to other ranchers. At one ranch it took the vehicles 20 minutes to drive a herd of cattle from a pasture to a holding pen. "The rancher had tried the same thing the previous day using seven men on horseback, and the job took 2 1/2 hours," Brown said.

As a result of his demonstrations, several ranchers are interested in buying units.

"I imagine they'll find other uses for the rigs, too," Brown said, "like turkey hunting."

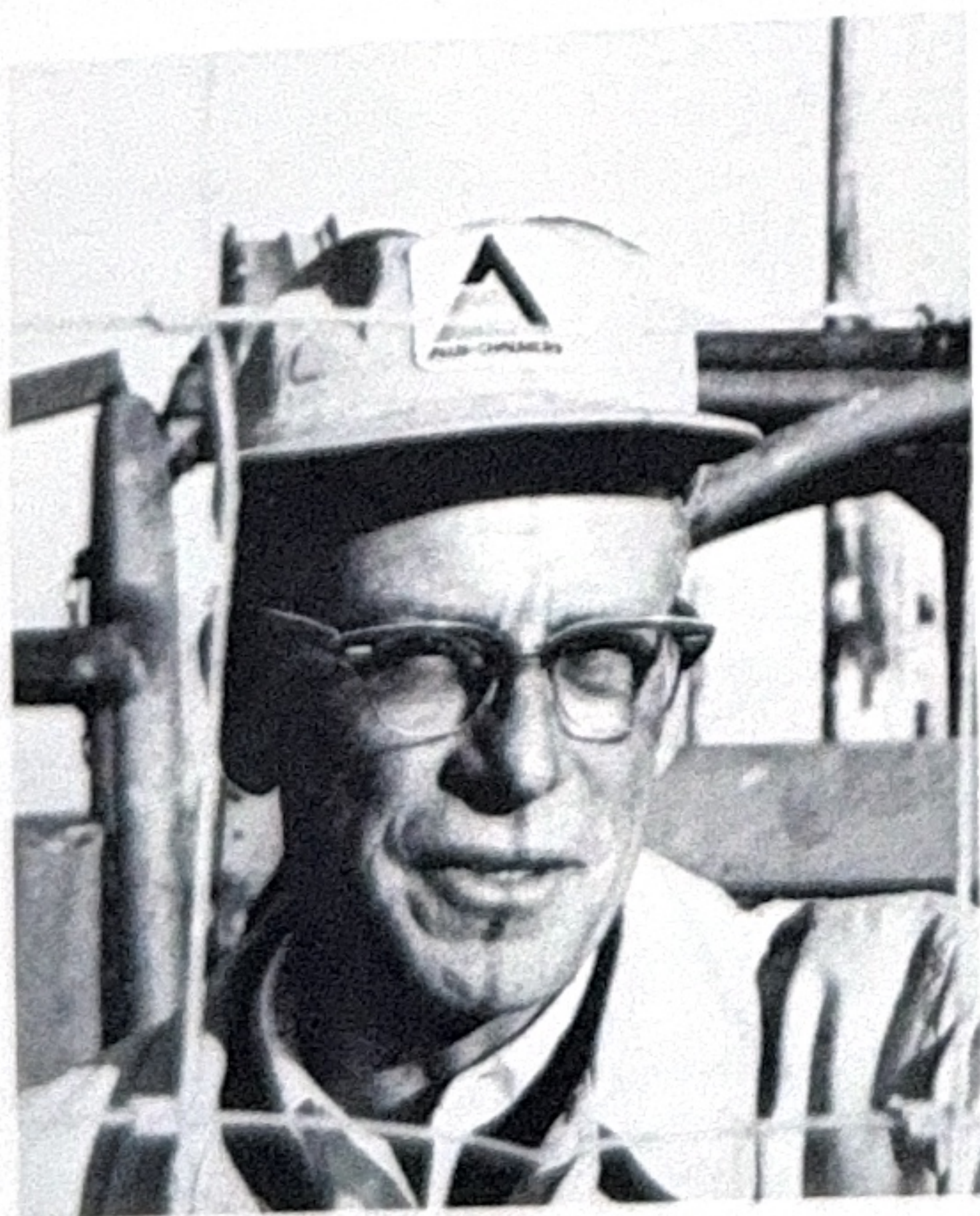
John Johnston, general manager of Brown's dealership, Margate Tractor Co., said the firm had sold a number of units. Surveyors who work in the Everglades bought *Terra Tiger* vehicles to reach inaccessible areas. Hunters and fishermen also bought units.

The dealership is promoting sales of *Terra Tiger* units with demonstrations and displays, Johnston said. Airboat races in the area draw big crowds, and Johnston plans demonstrations at them to gain exposure.

Although cattle herding may be one of the most unusual applications for the *Terra Tiger* vehicle, the rig was originally designed for sportsmen. Other dealers report sales to utilities for power line inspection and to lumber companies for timber cruising. One unit was sold to a scientific expedition hunting turtle eggs in the Bahamas.

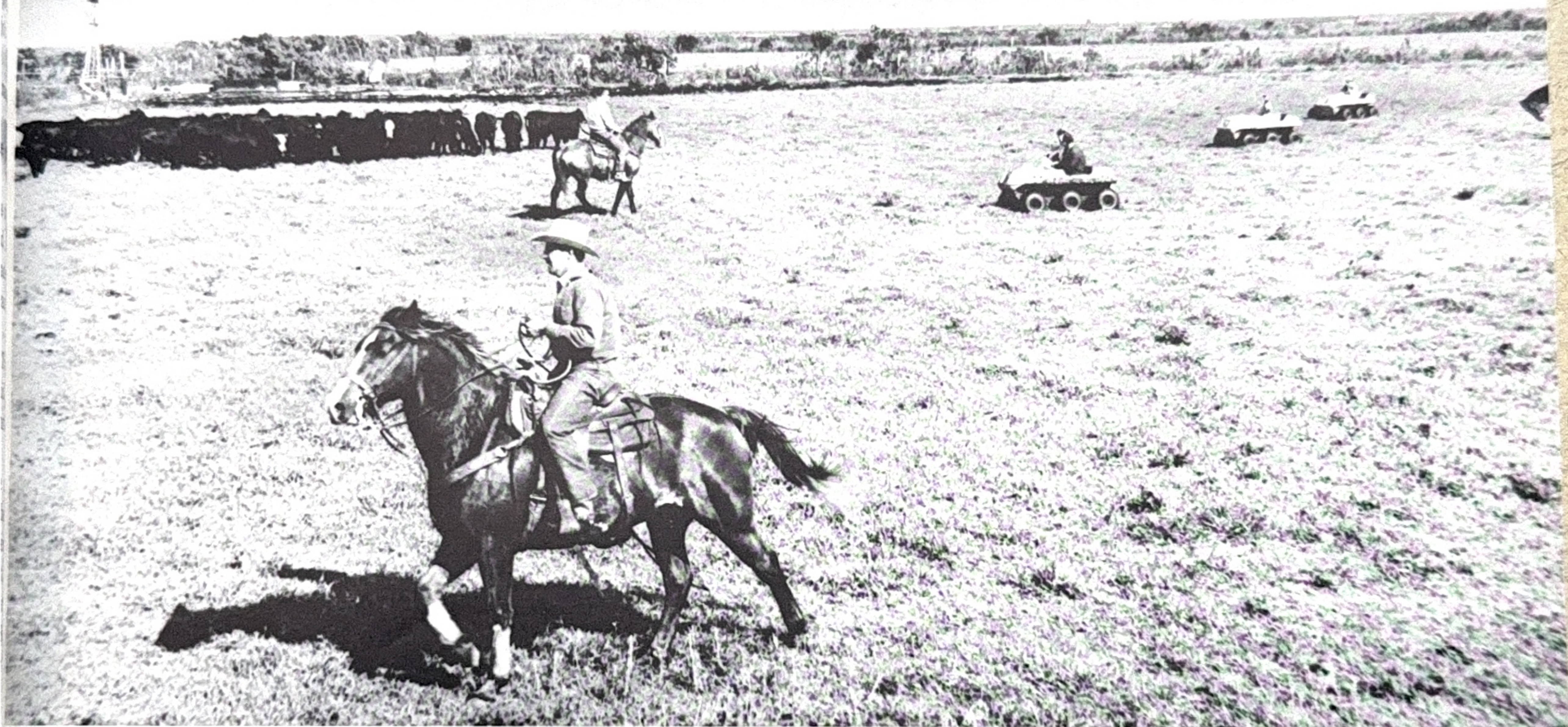
The *Terra Tiger* units are produced at the new Lexington Plant in South Carolina. They are marketed by the Outdoor Products Division's dealer organization.

A modern cowboy chased a herd on the Florida ranch.

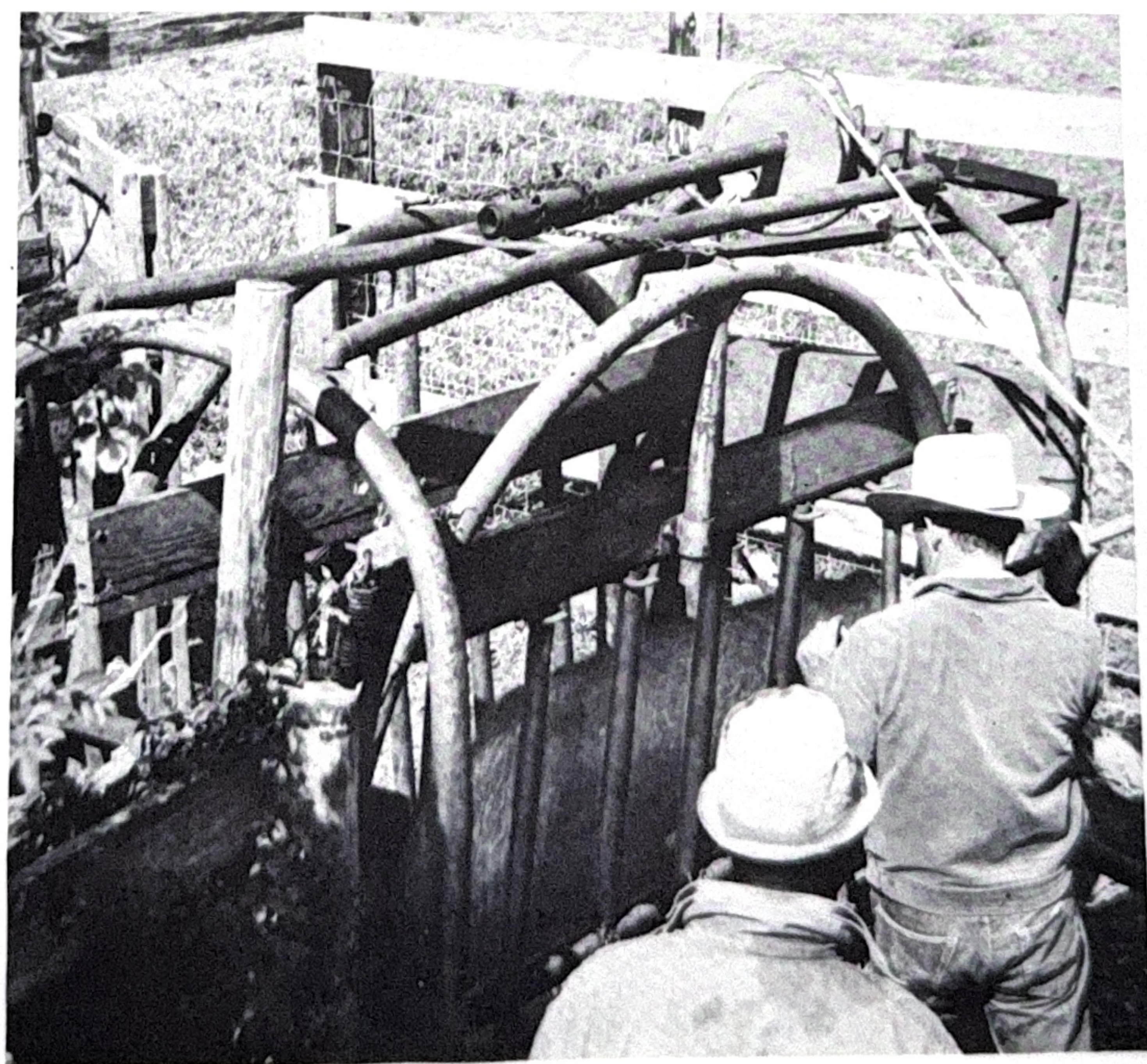
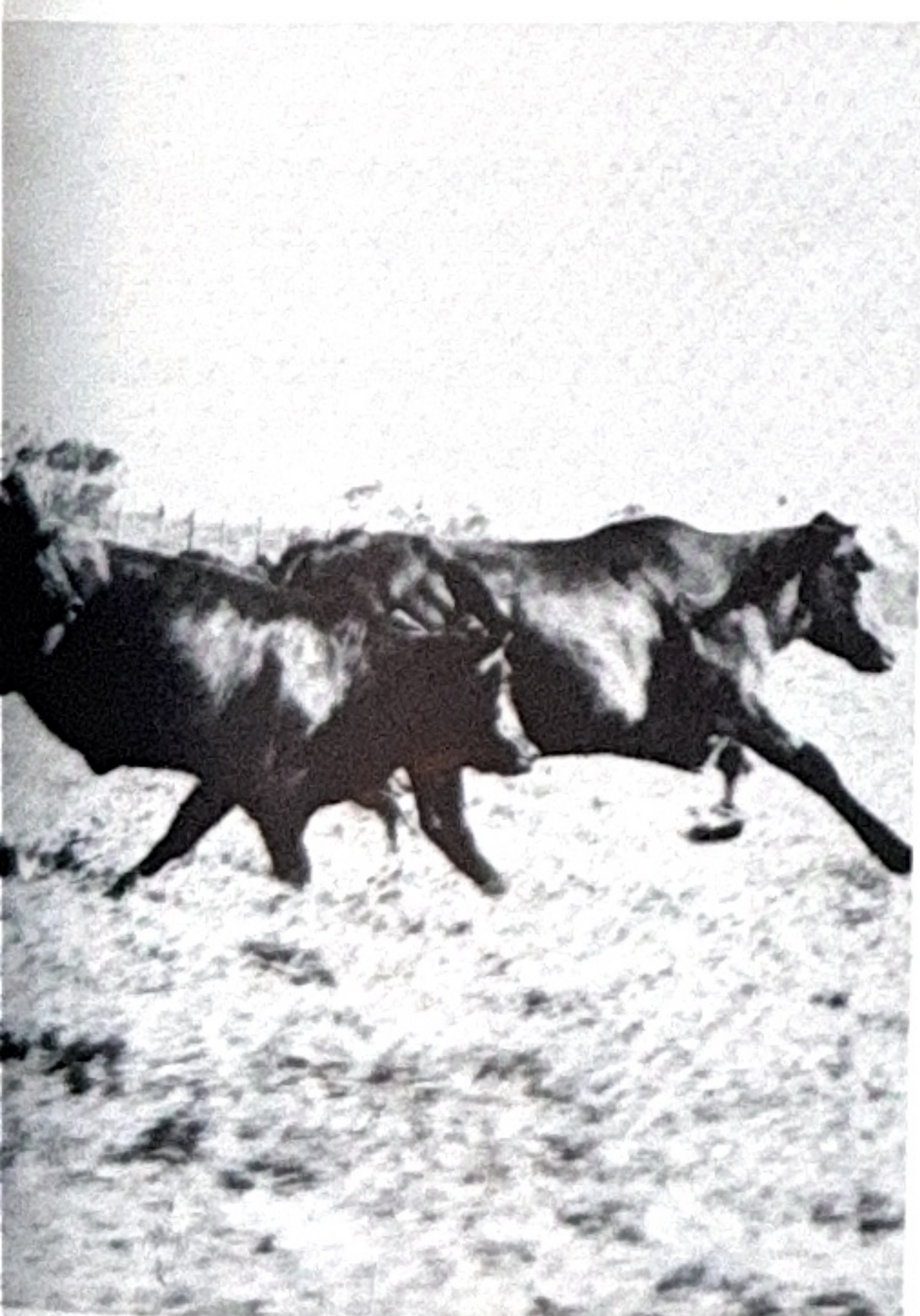


W. B. Brown inspected his herd during the unusual cattle drive.



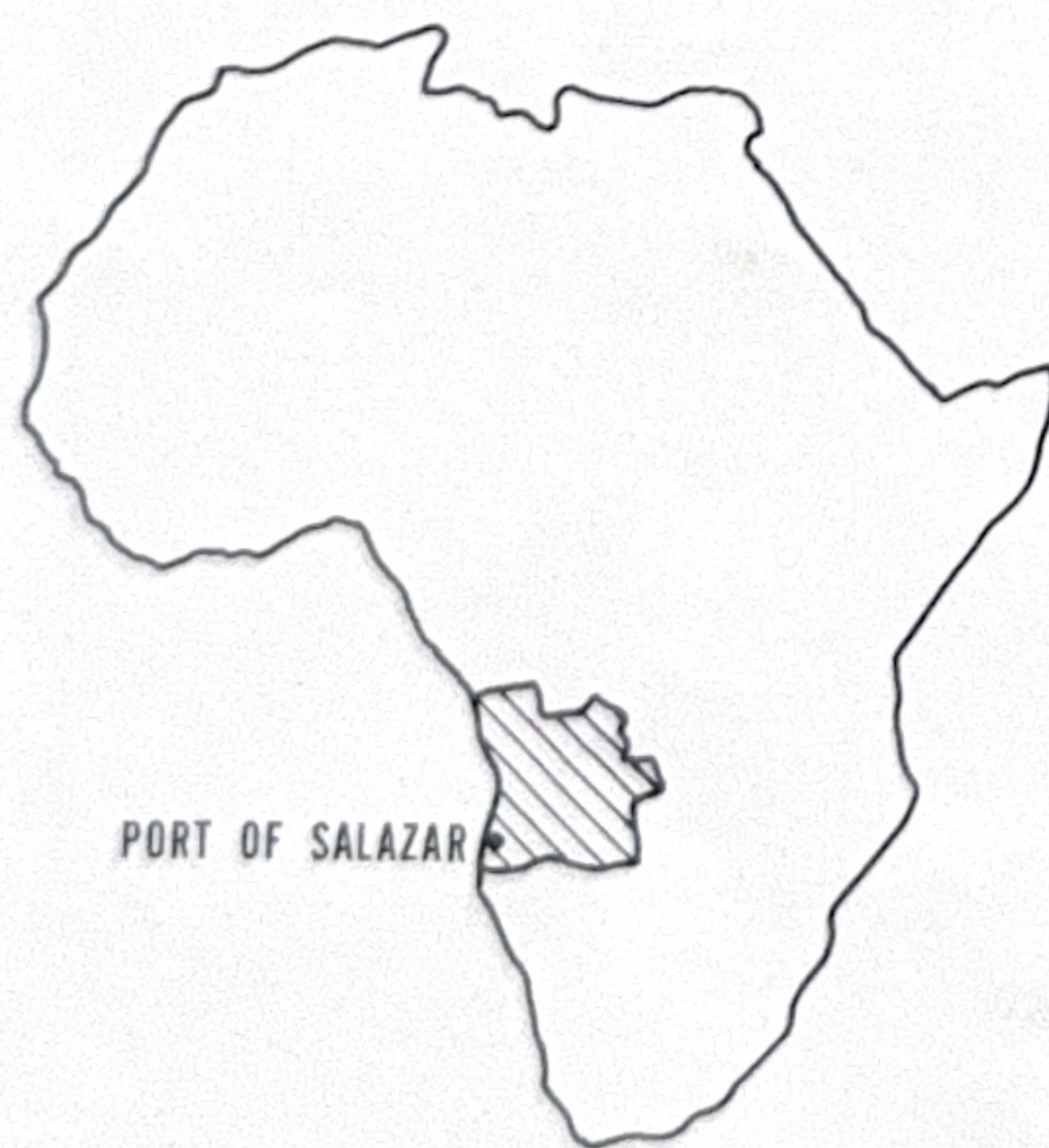


The old and new in mounts for cowboys (above) joined forces at this stage of the drive.
 (Below) A chute held one cow so that ranchhands could brand, pregnancy-test and dehorn it.





A crawler push-loaded a scraper while another scraper awaited its turn on the port project site in Angola.



The map of Africa locates Angola and the Port of Salazar.

A brand new facility on the Atlantic Ocean in Angola (Portuguese West Africa) already ranks among the world's busiest iron ore ports. Construction and operation of the Port of Salazar consequently bode well for the economic future of that sun-soaked land.

Allis-Chalmers equipment was instrumental in construction phases of the project, which followed discovery of vast iron ore deposits 300 miles inland at Cassinga. The result was that Port of Salazar is now handling monthly shipments that have reached 550,000 short tons of high grade ore.

Port of Salazar, from which the shipments are made by Companhia Mineira do Lobito, is located near Mocamedes on Angola's dry south-

west coast. The ore comes by rail from Cassinga.

The prime mover in construction of the new port was Lourenco Ltda., contractor firm headquartered in the Angolan capital, Luanda. Using a fleet of 14 pieces of Allis-Chalmers construction machinery and associated equipment, Lourenco cut a 1,040,000 cubic yard swath through craggy coastal cliffs. (For a mind picture of the amount of rock, earth and sand moved, a million cubic yards is the volume of material that would be contained in an object that yards long, 100 yards wide and 100 yards high—about the height of a modern 30-story office building.)

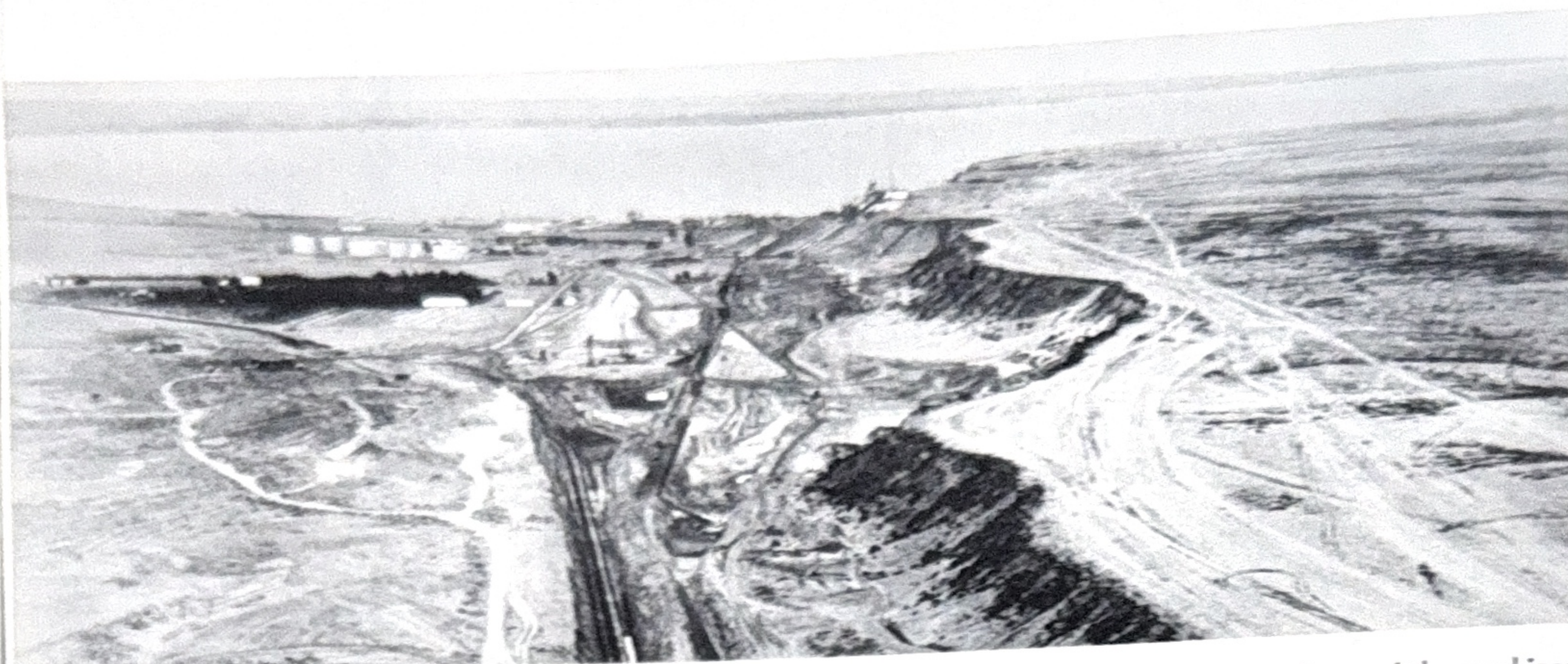
In just five months, the contractor carved through cliffs, built ore stor-

Africa Challenge Met

A PORT IS BORN



Rock and sand spoil, pushed into piles by a crawler, was dumped into a truck by a wheel loader.



Rocky cliffs above the bay were a challenge to the contracting firm and the machines during site preparation work for the new port and ore handling areas.



To speed loading of material, a 22-ton crawler ripped the rocky cut area prior to action by the scraper ready in the foreground.



Contractor Antonio Lourenco (at right) discussed the project with Rui Guilherme (left), a dealer representative, and Luiz Pinho, Lourenco's general manager.

age areas and graded the railroad complex for the Port of Salazar. Working 20 hours a day under hot, dusty conditions, Lourenco moved the rock, earth and sand in time for completion of the port to meet shipping schedules.

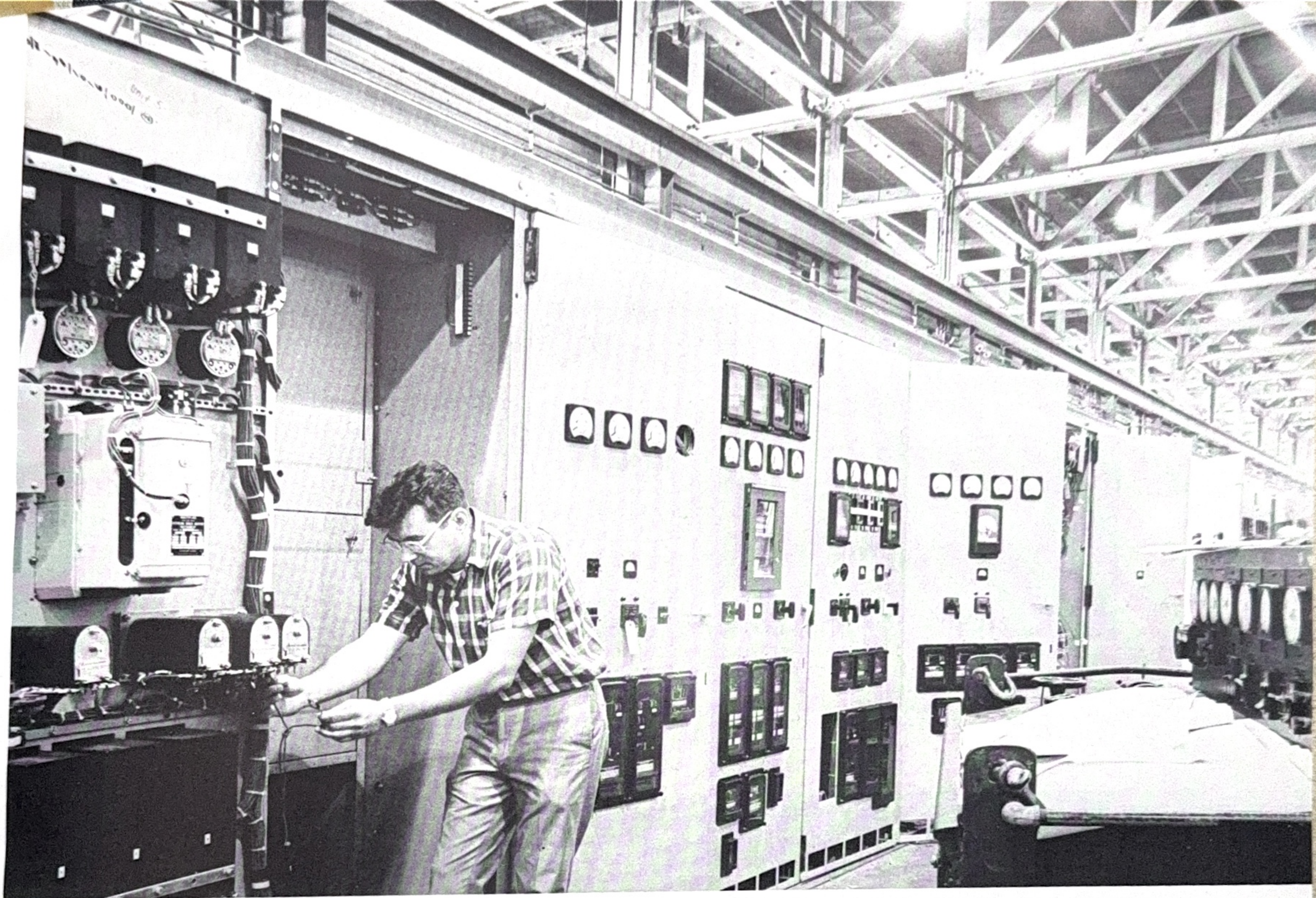
Allis-Chalmers equipment on the job included four motor-scrapers, six crawlers, two wheel loaders, a crawler loader and a grader. One crawler ripped the material prior to loading while another pushloaded the scrapers. Dozers piled up the rock, which was loaded into trucks by wheel and crawler loaders. Other machines did general utility work on the fill, spoil dumps and storage areas. In meeting the challenge, all the machines worked 10 days straight under the broiling sun; then two days off were provided for inspection and maintenance.

Despite the rock and abrasive sand, the units had only the usual wear, reported Antonio Lourenco, owner of the contracting firm. He said, "Within its class, the machinery is the fastest, has the highest production capacity and offers the greatest availability."

The Allis-Chalmers dealer for the International Division in this project was Maquinas e Equipamentos Tecnicos de Angola (META), Luanda. META stationed one of its representatives in Mocamedes, providing instant service day and night when required.

The impact of the project can be seen in the fact that iron ore, as an export earning foreign exchange for Angola, now has a ranking in mining second only to diamonds. In the first half of 1968, more than one and a quarter million tons was shipped from Port of Salazar. In June alone, the shipments exceeding a half-million tons surpassed Angola's iron ore output for all of 1960. The June cargo went to Japan, Germany and the United Kingdom under contracts with steel works in those countries.

Angola has been primarily an agricultural land, exporting coffee, sisal, cotton, sugar, corn, palm kernels and oil, peanuts and rice. Now, together with development of oil deposits and potential for manufacturing, the iron ore industry is helping broaden Angola's economic base.



Employee skills and know-how are an integral facet of switchgear production. Here, Rodney Hoover tests a unit at West Allis.

Quiet and Unglamorous, But Vital — That's Switchgear

On the job in a customer's location, a lineup of Allis-Chalmers switchgear is quiet and unobtrusive. Bluntly stated, switchgear is efficient but hardly glamorous. That's why the public at large may not appreciate the vital function it serves.

A look at the exterior panels gives the impression that the only action is the movement of meter indicators noting changes in the flow of electric current. Otherwise, a bank of switchgear looks like large foot lockers.

Nevertheless, the domestic market for switchgear products represents some 163 million dollars a year. Serv-

ing this growing market is a vital part of the Control and Switchgear Division's potential. That's why, in the shop and even before, switchgear is the hub of extensive activity.

Men and women in the Hawley Plant at West Allis, Control and Switchgear Division, and at the Boston and Pittsburgh Plants, Power Protection and Switching Division, contribute to switchgear's form and function. All provide certain components; Hawley designs and builds the total system.

The result is an arrangement of electrical devices that protect a

power system from overloads and other mishaps at the point of use. Switchgear keeps safe the men who operate it. Although it can be likened to a common household distribution box, switchgear is more complex because it uses a combination of circuit breakers, disconnect devices, wiring, relays, meters and the like. These are used to open and close electrical circuits while providing full safety to the operators.

Some users puzzle over the differences between control and switchgear. Control covers devices—whether electrical, magnetic, elec-



Customer inquiries for switchgear arrive in Switchgear and Substation Products, West Allis. Edgar R. Brucklacher (left), supervisor, Switchgear—Industrial, reviews one with James C. Hunt (center) and A. E. Brown, application engineers.



In Product Engineering, the concept of a product filling specific customer needs is committed to paper. Checking a drawing are (from rear) Roger Coke, salesman; Robert Stephan, drafting supervisor, low voltage, and Max Everett, senior engineer.



After Production Control relates the desired product to plant capabilities, Industrial Engineering gets the task of planning the entire manufacturing process. Tracing a wire diagram are (from left) Bruce Tarnaski, computer input clerk, and Albert Miller and Merritt Harsch, industrial engineers.

tronic or mechanical—which serve to govern in some predetermined manner electric power delivered to operating equipment. Switchgear is used at times for certain control applications, but more generally for its own purposes alone.

"Switchgear orders tend to be big," according to T. T. Thorne, product manager. Last September a typical large contract valued at over \$900,000 was booked. The equipment is for a new \$65 million Boise Cascade Corp. pulp and paper mill near DeRidder, La.

"Today, more than ever, reliable control and switchgear systems are of great importance to our customers," Thorne said. "Utilities and other users are demanding more from switchgear. They're finding new ways to apply it, too."

We live in a world of switchgear. It's in the factories and office buildings where we work; it's in public buildings, aboard ships, in electric utility facilities, in stores and places of entertainment.

"Because they experience so many uses, switchgear units are decidedly not 'off the shelf' items in their final form," said L. T. Williams, manager of manufacturing. "Yet, nearly all the components are standard—the current transformers from Pitts-



Mrs. Lucille Mielcarek adds data on the status of ordered materials to a work packet. This is a function of Production Control.



Individual packets are sent to all areas involved in a project according to the master schedule. Foremen Donald Boese (left) and Thomas Bauman (right) go over a new project with Alois Kolata, superintendent, assembly and test.

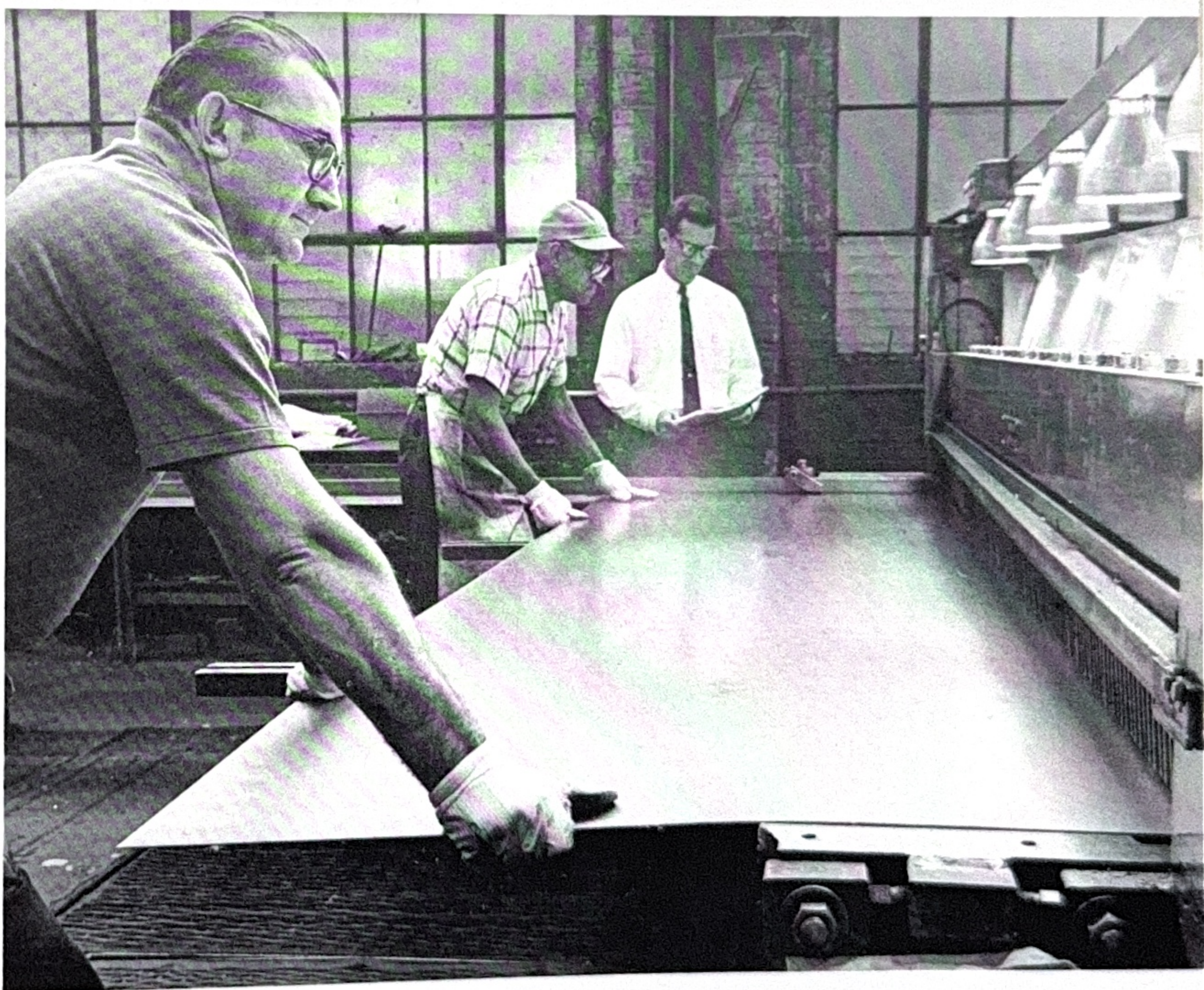
burgh, the breakers from Boston, the relays and meters from a variety of sources. Because of this, computer selection of components and wiring arrangements, and computer preparation of all manufacturing instructions and basic documents, are common procedures."

Starting with Industrial Engineering, which receives design instructions from Product Engineering by way of Manufacturing Engineering, the entire manufacturing operation for high and low voltage gear is guided by the product of computers. Printed drawings, labels, shipping tickets, labor tickets, materials requisitions and starting date instructions arrive in manufacturing offices neatly cased in plastic envelopes—the work packets prepared by Manufacturing Order Services.

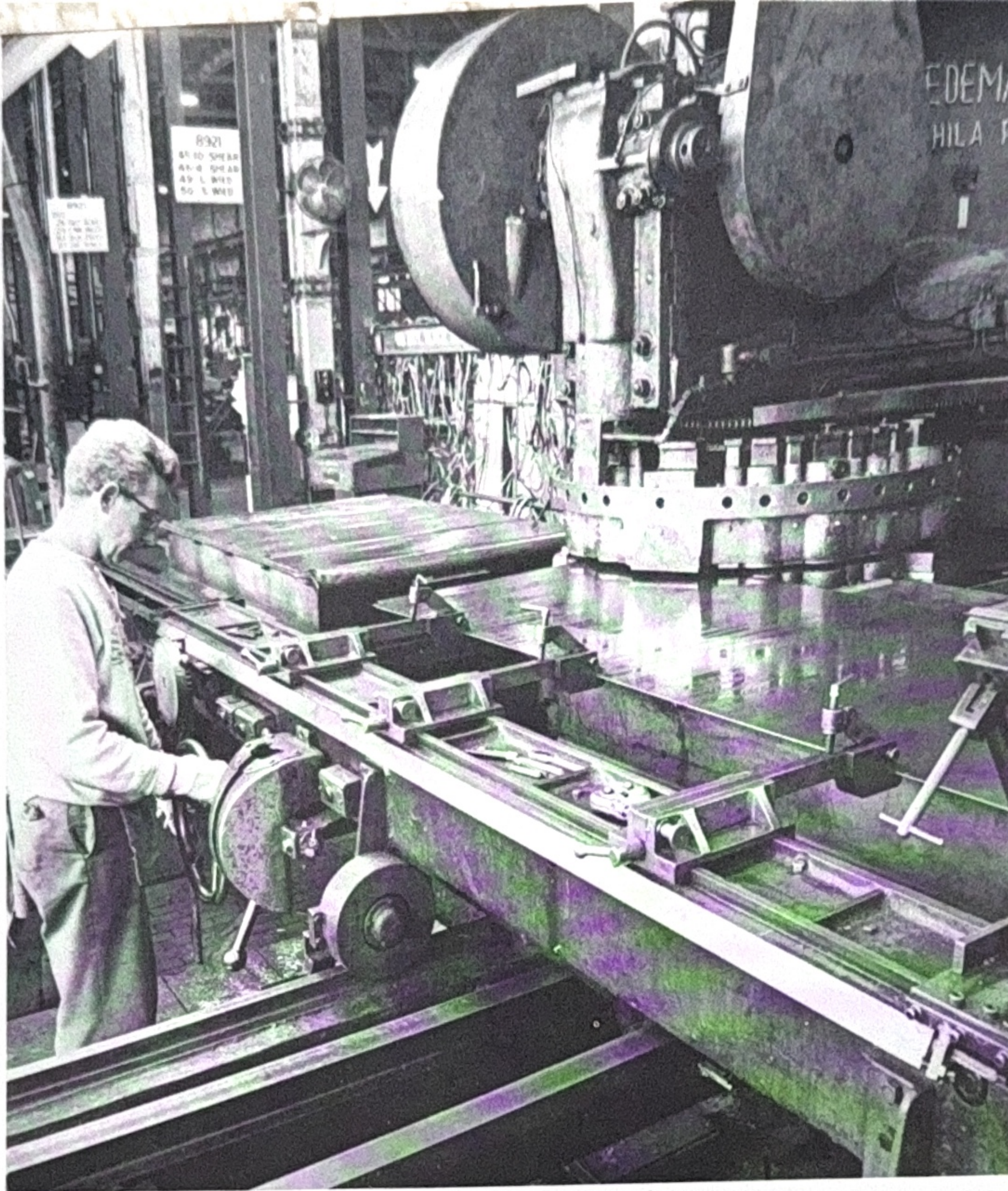
These packets are fitted into the time cycle for fabrication of special items, modification of standard items, construction of frames and panels, preparation of tools, getting materials from inventory or outside, assembly, testing and shipping.

"If anything provides a common language for switchgear production, it's the language of the 'packet,'" Williams said.

"Packets are stored in Production Control ready for staggered release



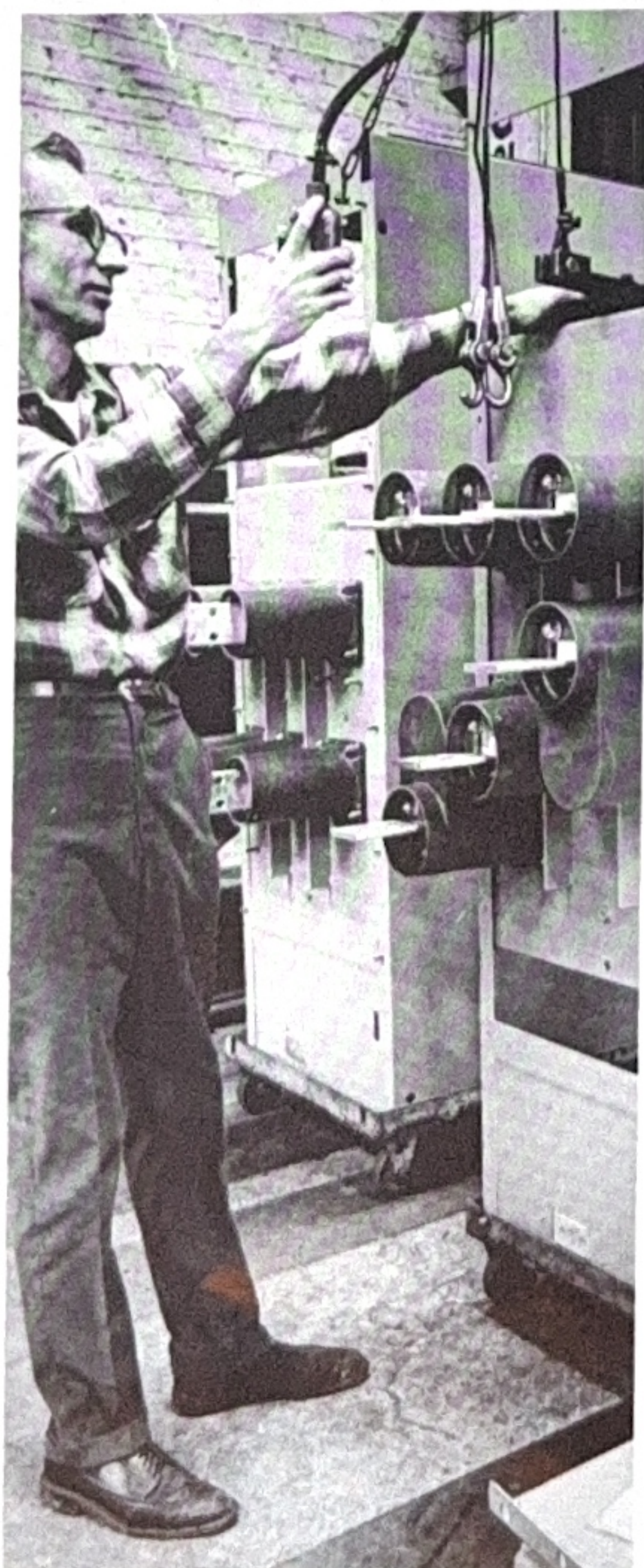
Much basic switchgear manufacturing centers on cutting, bending and joining sheet metal. This shear cuts sheets to size. Operators are Frank Ciecka (front) and George Guerin. At the rear is Ralph Ellis, superintendent, fabricating and machining.



To accommodate meters and wiring, switchgear cabinets must have apertures and notches. James Leonard operates a punch press over whose table pass many of the flat pieces.



As part of the painting and cleaning process, Alvin Janeczko removes panel sections from the drying line.



Left, Mrs. Emily Dorsch in the stores area uses requisitions from a packet to identify stocked parts. Center, Eugene Fischer attaches a primary disconnect assembly base to a frame. Right, a low voltage panel is assembled and wired by Ray Schmidt.

to shop planning personnel. In the interim, the orders for outside purchase, for selection and storage of components made inside and for selection or acquisition of tools are sent to the appropriate stores, purchasing or tool areas."

All this activity has its start in marketing. Here, application personnel feed into Product Engineering the data on what has been sold. Engineering creates original designs or feeds application information into the computer to select from existing designs those that apply to the job in question. This data is delivered to Manufacturing Engineering, which reviews the order in light of manufacturing processes. Then Industrial Engineering takes over, "building" the production terms of what is to be made or assembled—when and by what process.

Individual packets applying to each part of an order appear all along the routes of planning, scheduling, making of components, assembly and finally testing and shipping.

"The packet system helps us stay on schedule or even a little ahead," said Ray Johnston, production manager, Switchgear Products. "It saves tremendously on hunting for things. Best of all, it helps us all use what we already know and apply what we've already done."

Like a military battle plan worked out so far in advance that ships which will carry troops have not even been launched, the production plan for a given order may require steel, or wire, or paint still being made elsewhere.

"Everything in the plan is keyed to scheduled dates toward which everybody works," Williams said.

"Everybody who has experienced the 'packet' system knows that at H hour on D day he is to have something done and on its way to another person in another location. Even the move orders for lifting a piece of equipment are made up in advance."

Of course, changes do occur. Sometimes they originate in marketing; product sales may receive a new delivery request from a customer. Sometimes the change comes from design; a new material or arrangement could be on the horizon. Perhaps a shop change may be needed.

Many things contribute to the competitiveness of a product line. The work flow is definitely one. Here, as in details of design or application, people's contributions are felt.

Together, all these contributions make for products salesmen can sell and sell and sell. ■

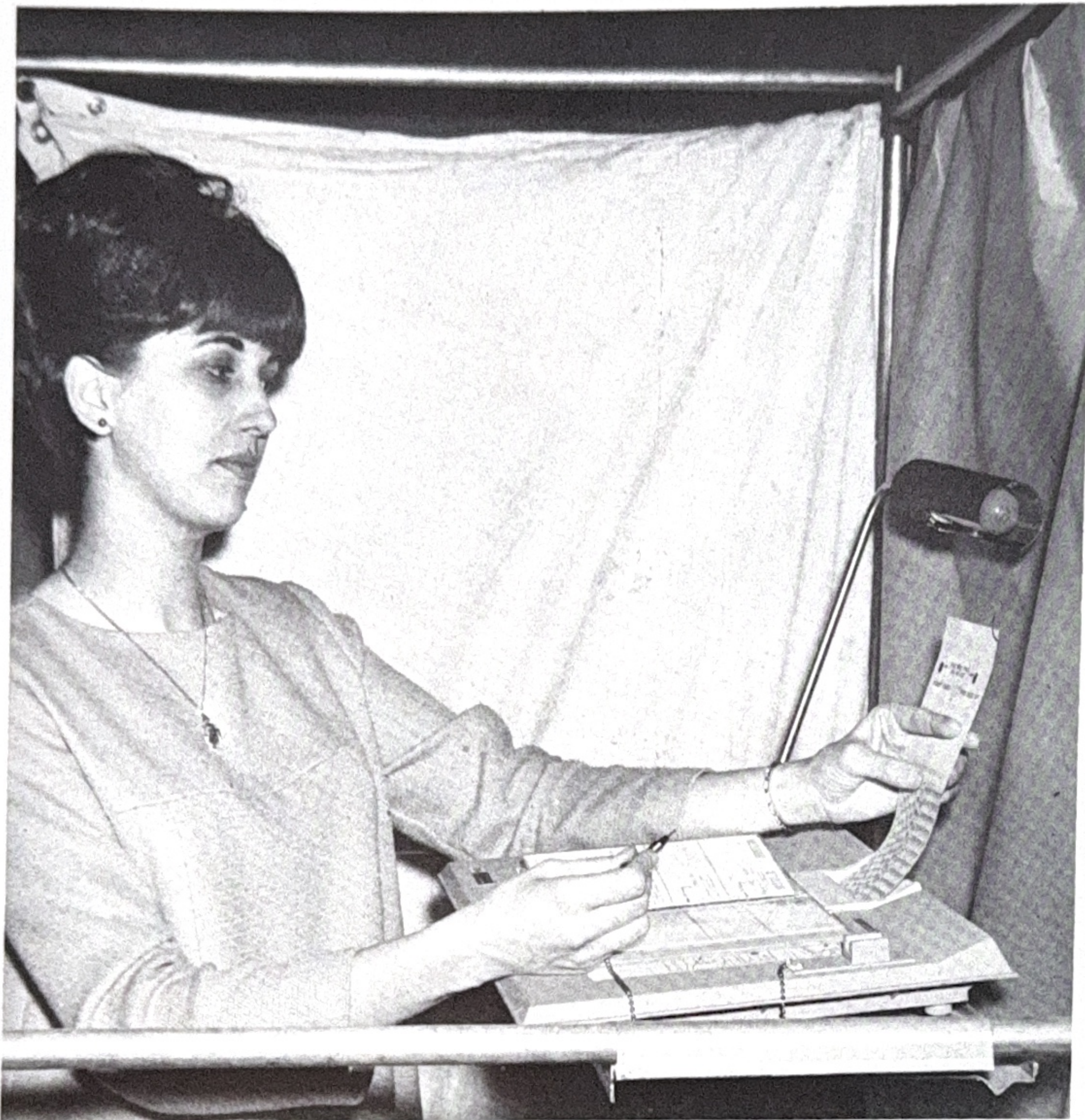
Hundreds of feet of wire are used to connect the functioning, metering and control components. This bundle handled by Ratko Pavlovich (foreground) and Earl McGivern contains 80 strands.



The order now completed, layers of cardboard and canvas protect the unit ready for shipment. Paul Tockley (left) and Alvester Jackson make a final pasterdown.



A Good Neighbor In Land of Lincoln



Sangamon County, Illinois, was Abraham Lincoln's home in 1860 when he was elected president of the United States for the first time. Even a man of Lincoln's vision would not have foreseen the time when ballot counting and reporting could be only a matter of seconds.

That's what it was, however, in Sangamon County last November. Because of punch-card ballots and the use of computers at the Springfield Plant of Allis-Chalmers, election totals for a precinct could be known about 30 seconds after the data was fed in. It was the third time that Allis-Chalmers equipment and facilities had been utilized to tally the vote in the 86 county precincts outside the City of Springfield.

(Photo at left) Gerry Wilkerson, a secretary in the Test Department, Construction Machinery Division Development Engineering, demonstrated what it was like in a voting booth on Nov. 5. The ballot she held in her left hand was inserted into the Votomatic ballot stand, beneath an official voting booklet.

Offices' candidates' names and referendum propositions were on each page of the booklet, which was attached to the stand. Next to the name of each candidate was an opening exposing a perforated portion of Gerry's ballot underneath. Using the pointed stylus shown in her right hand, she poked through the hole alongside her chosen candidate's



name. This popped out the correct perforation in her ballot.

When Gerry finished voting, she removed her ballot from the stand and gave it to an election official. She had transformed the ballot into a computer card ready for easy "reading" by the electronic devices.

After the polls closed, precinct captains carried the punched ballots to the Springfield Plant. (Opposite page, lower left) Four captains were signed in by two election workers.

(Opposite page, lower right) Ballots ready for the computer received a last check by County Clerk Josephine Oblinger, whose office was responsible for tabulation and security of ballots. Among Allis-Chalmers employees who helped during the night were data processing personnel (from left) Gene Wheeler, Brick Foster and Mel Slusser.

(This page, below) Assistant County Clerk Pauline Paine (center) made sure the ballots went into the card reader device after receiving them from precinct election officials. Waiting at the right were Slusser and a print-out runner.

(Photo at right) A Springfield television station broadcast election reports directly from the computer room. Data processors (from left) Bob Robertson, Ike Hunt and Larry Nutt were on hand as the cameraman focused his equipment. More than 32,000 ballots sped through the computers during the night.

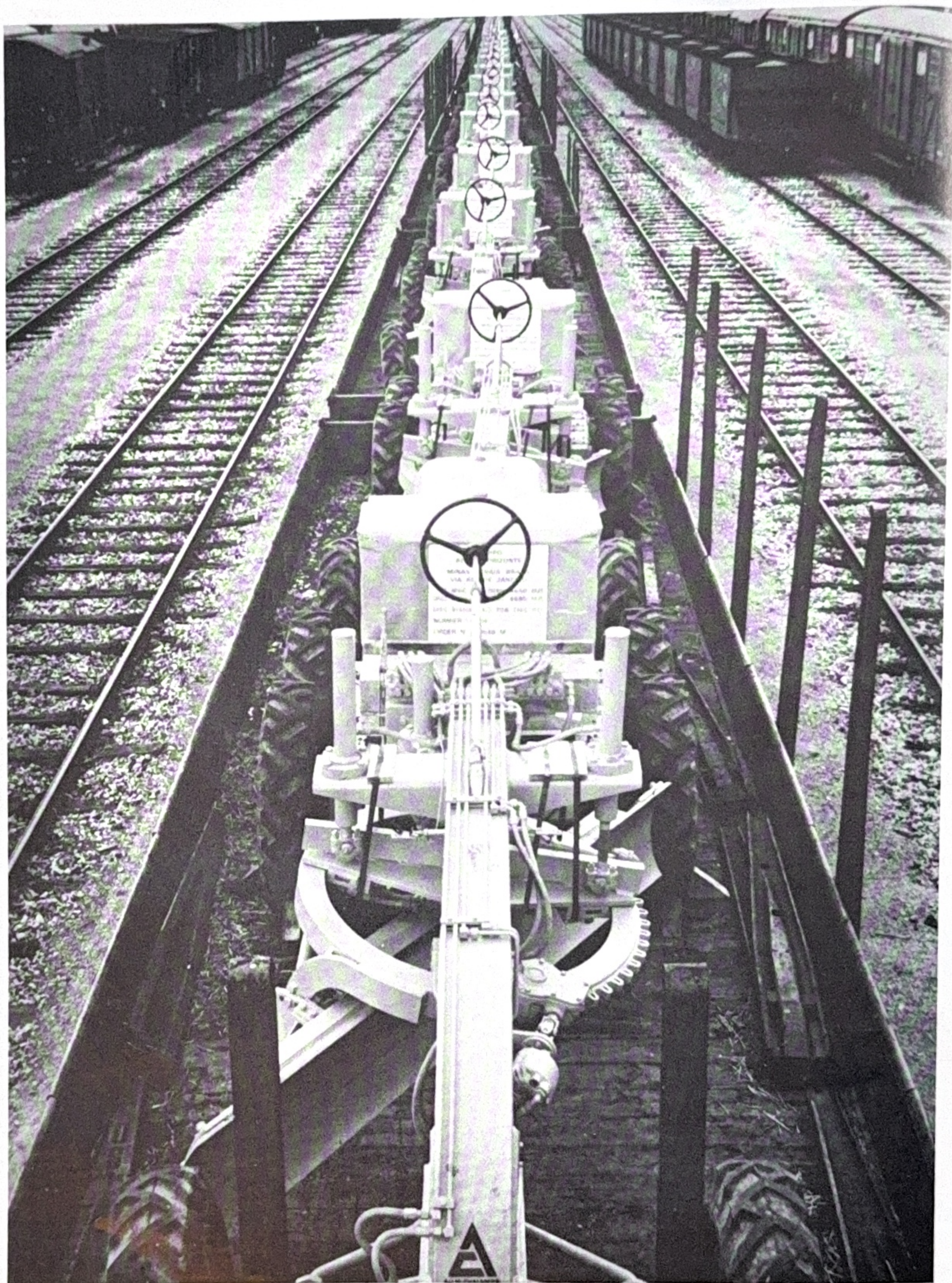




SCOPE

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BULK
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On Target For Brazil Work

Pointing down the railroad tracks like an arrowhead are motor graders being shipped to Brazil from Allis-Chalmers plant in Dieppe, France. They are part of a construction machinery fleet to be used by municipalities in the State of Minas Gerais for road maintenance. The fleet includes 134 graders from Dieppe, 48 bulldozers from the Springfield Plant and 12 wheel loaders from the Deerfield Plant. The fleet is valued at more than \$3 million.