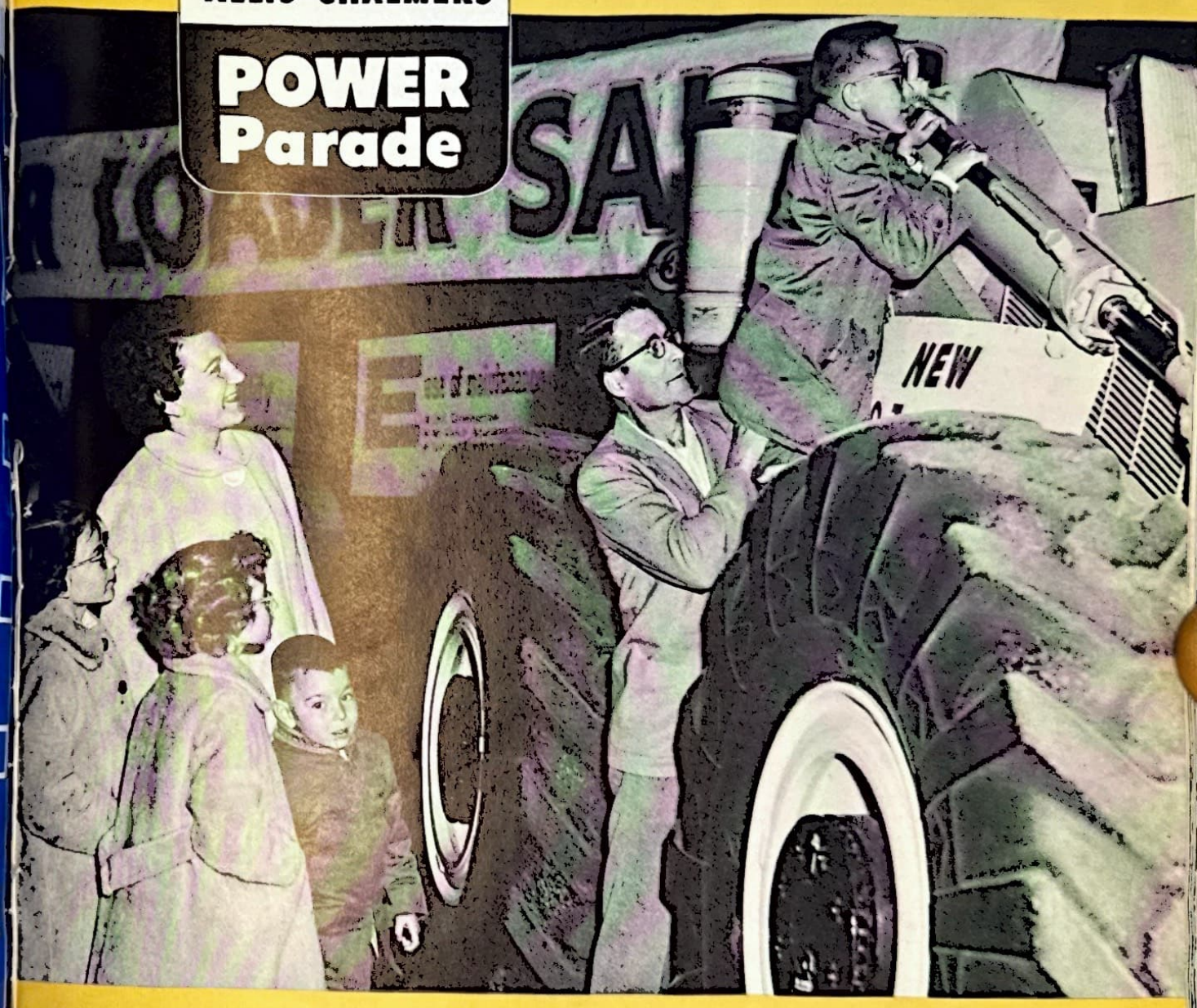
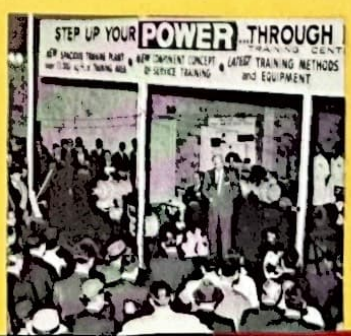
a-c scope

magazine of allis-chalmers people

may-june, 1961

ALLIS-CHALMERS POWER Parade





COVER PHOTO

Youngsters like Robert Clevenger are just naturally attracted to impressive equipment such as the new TL-30 tractor loader on display during "Employe and Community Day" at Springfield Works. He gets a lift from his father, Jesse, a gear shop employe. Mrs. Clevenger and children Vickie, Nancy and Don look on. The event was held in conjunction with Allis-Chalmers construction machinery "Power Parade."

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PHOTO CREDITS

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A-C SCOPE

MAGAZINE of ALLIS-CHALMERS PEOPLE
Jack Bartness . . . . . Editor
I. J. LaBarbera . . . Art Director
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Tablespoons or Steam Shovels?

Theodore Roosevelt and a companion were playing the role of sidewalk supervisors, watching one of those new-fangled steam shovels bite away at dirt in an excavation. The companion remarked that many more people could be employed on the excavation project if the steam shovel and its operator were replaced by men with hand shovels. Roosevelt glared at the man and said, "Yes, and think how much more work you would have if you replaced those hand shovels with tablespoons."

Roosevelt's companion saw a loss of jobs in the steam shovel; Roosevelt saw progress that would lead to more jobs.

The same reasoning that befuddled Roosevelt's companion has many people worried today. In times of recession, such as the one from which we now show signs of emerging, this line of thought receives more consideration than ever. But history proves that it is in error.

It now takes only two-fifths as much labor, on the average, to do a given job as it did in 1910. If it were true that increases in productivity or technological advances threw men out of work, we could conclude that three-fifths of our national work force should be unemployed. We know otherwise; we know employment is 75 per cent higher today than in 1910.

While the sad truth is that unemployment has been higher than usual in months past, this unemployment is the result of maladjustments in the economy which can occur whether technology is changing or not.

George Meany, president of the AFL-CIO, said last year: "The philosophy of the American Trade Union movement has been not to interfere with the introduction of labor-saving devices, because we came to the conclusion, many years ago, that these devices in the long run would open up new markets and provide more jobs."

Greater efficiency is the springboard for a higher standard of living for more people. Allis-Chalmers steam turbines are a case in point.

In 1900, a kilowatt hour of electricity was generated by the combustion of 2.5 pounds of coal, and today by only 0.7 pounds. Our efficient units have helped bring about the wide-spread use of inexpensive electricity for a thousand and one applications.

Inexpensive electricity has aided the development of products unheard of in Teddy Roosevelt's time — the giant electric household appliance industry, to name one broad product field. More appliances, in turn, require more electricity and more Allis-Chalmers generating and transmission equipment.

W. G. Scholl, our executive vice president, told Construction Machinery dealers at Springfield recently that in the next 10 to 20 years Allis-Chalmers will be making products we haven't even thought of yet. These new products will flow from the imaginative minds of our research and development people. These products will be manufactured by people who have adapted their skills to improved production techniques. And these products will be purchased by customers who will then wonder how they ever got along without them.

ALLIS-CHALMERS

POWER Parade

Gear for construction machinery upturn with intensive dealer meeting

Set sights at Springfield

The construction machinery dealer got to the heart of the matter: "We needed this!"

"This" was the "Power Parade" of Allis-Chalmers construction machinery held at Springfield, Ill., late in March.

"This" covered a lot of territory, and had meaning for Allis-Chalmers employes as well as our dealers from 182 cities in the United States and Canada and the customers they serve.

"This" referred to the equipment introduced — entirely new units or units featuring major new components — the most complete line the dealers have ever had available to sell. "This" was a peek into the future, a look at the powerful units and innovations our research and development people have in store for the months, and the years, ahead. "This" included ideas for dealership growth by building a better sales organization, increasing parts and service facilities and sound financial planning.

Packed into the two-day session was anything the Power Parade planners could think of to bring in more business — and more work into the shops and offices.

The meeting was particularly timely. R. S. Stevenson, president, predicted an imminent upturn in the construction machinery business "and I feel it has a very good chance of being a sharp increase."

Based on what the 800 dealer principals and salesmen saw at Springfield, Allis-Chalmers is ready for this upswing with the broadest, most versatile line of equipment in its history — products of our Springfield, Cedar Rapids, Deerfield, Harvey and West Allis Works.

Passing in review were more than 50 units — select models of crawler tractors, tractor shovels, tractor loaders, motor graders and giant motor scrapers — the

Deerfield-made tractor loaders spell out the meeting's theme.

ALLIS-CHALMERS POWER Parade

This impressive line of motor scrapers and motor wagons, made at Cedar Rapids, was part of the largest display of construction machinery ever presented by Allis-Chalmers to its dealers as a group. More than 50 units were shown.

largest display of construction machinery ever presented by Allis-Chalmers to its dealers as a group.

Major new models of construction machinery introduced include: an HD-21G tractor shovel — as shown, specially adapted for steel mill slag removal operations; a medium size, 105-hp model 145-T motor grader; a TL-30 tractor loader featuring a lifting capacity of 25,000 pounds, and a new TS-160 motor scraper with an 11 cubic yard capacity.

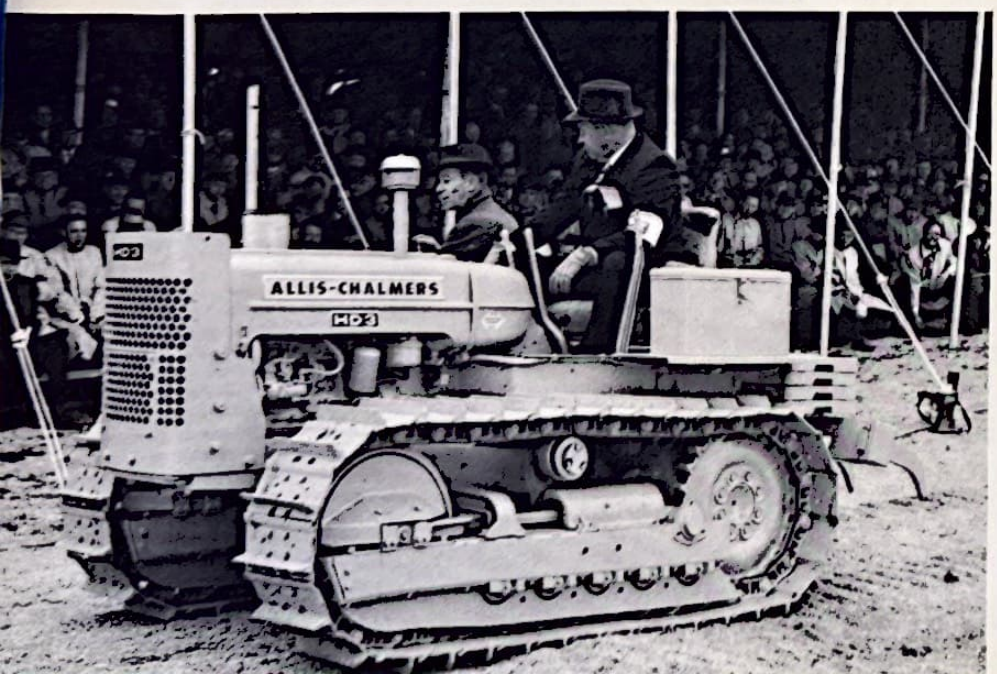
Other featured units ranged from a redesigned HD-21 crawler tractor, the biggest in Allis-Chalmers line, to the new compact crawler tractor series, the H-3 gasoline and HD-3 diesel powered units, both in the 40-hp class.

A big crowd-pleaser was an experimental earthmoving machine, a huge dual engine motor scraper with almost 700-hp and the capacity to move 40 cubic yards of dirt a load. This 95,000 pound unit will be ready for the sales force later this year.

Dealers took a close look at the machines and their components in a mammoth exhibit tent where Allis-Chalmers people fortified them with sales ammunition.

At the start of the two day session, V. M. Holloway, general sales manager, Construction Machinery Division, told the dealers: "We are very confident of what we have to show you and tell you." Judging by a sampling of dealer reactions during the course of the two days, Holloway did not overstate his case.

Warming up the topcoat audience is the HD-3 crawler tractor being introduced by H. T. Larmore, assistant general manager, Construction Machinery. The unit is manufactured at the West Allis Works.



E. J. Mercer, division general manager and a vice president, said, "We are already increasing our production schedules, putting people back to work to manufacture the very best line in the business."

He said that in the 1960's the construction machinery business will outstrip the 1950's by perhaps two-fold. While assuring the dealers that Allis-Chalmers management has been taking action to develop the best possible line for the growing U. S. and Canadian markets, he noted, "This is a man's business we are in, and it is a rewarding business — rewarding for men with courage, daring — men with unlimited desire to be the very best in the business."

Much emphasis was placed on the company's determination to become number one in the construction machinery industry and to stay there. W. G. Scholl, executive vice president, summed it up when he said, "We don't want to be in the position of having to catch up with anyone."

John Carlson, the recently named general manager, Engine-Material Handling Division, reported that engineering development work in 1960 reached the highest peak in the company's history, and will be even higher in 1961. He said, "Hundreds of projects are in the works at all times, some due to come out in 90 days, others later this year. Some of these developments are not evident by looking at our equipment; they only begin to show up on the contractor's job after thousands of hours of trouble-free operation."

Stressed throughout were such sale-

Taking a close look at the brake assembly for the HD-21 crawler tractor is Paul Bruell of the Illinois Tractor Co., Mount Vernon, Ill. Dealer personnel were fortified with sales information at Springfield.

Peter Spoehr, Construction Machinery Sales, directed attention to Harvey Works engines. Packed into the two-day session was anything the Power Parade planners could think of to bring in more business.

Ben M. Scott of the Tom W. Carpenter Equipment Co., Amarillo, Tex., sported this sweater, knitted by his daughter-in-law. He was one of 800 dealer representatives who saw the broad line of equipment.

The huge tent at the right quartered displays of our equipment — from complete units to components. Since predictions are for an upturn in the construction machinery business, the meeting was particularly timely.

producing features as stronger frames, more flexible mounted equipment, engines designed by Allis-Chalmers specifically for its own equipment, developments such as the new "power train" — clutch, brake and transmission components — which offers new levels of tractor performance, dependability, ease of operation and reduced maintenance.

Elements of the meeting were well fitted together, complementing each other.

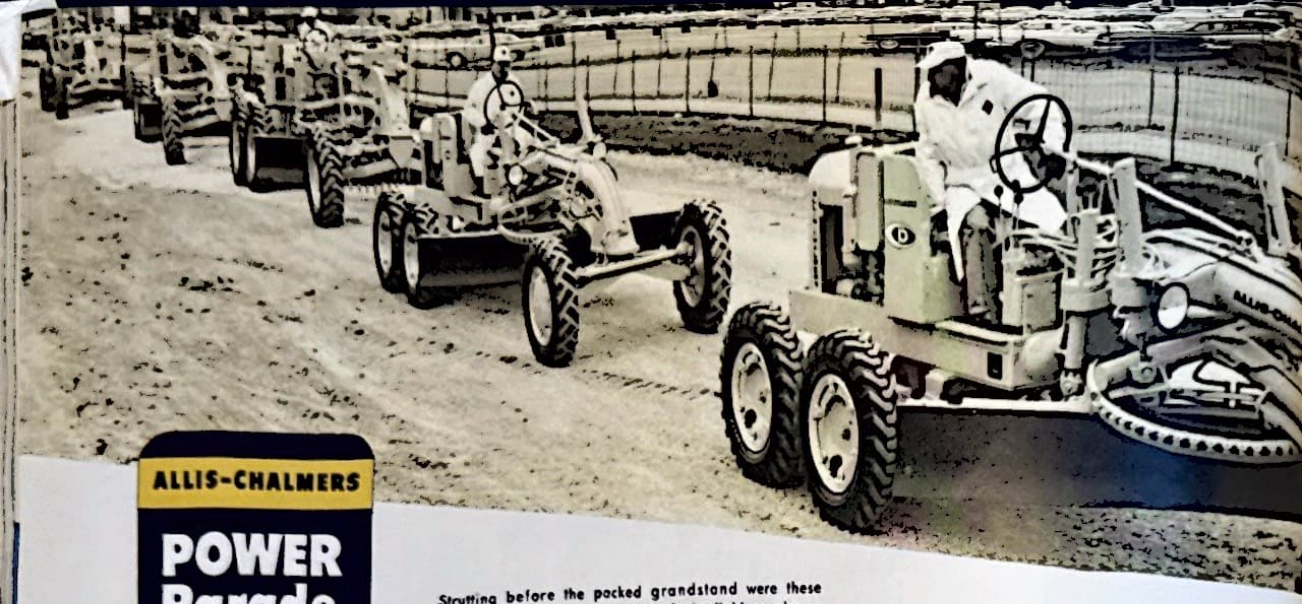
In the exhibit tent a speaker discussed the advanced manufacturing techniques employed at our plants to produce Samson-strong, quality units; earlier, President Stevenson told the dealers that everybody at Allis-Chalmers is committed to quality. "We want to be known as the House of Quality, and with our background and resources we should be."

Stevenson told the dealers about the "Teamwork For Progress" program which is designed to make all Allis-Chalmers employes even more aware of the need for quality products. "When I saw our people carrying these Teamwork emblems on their lunchboxes I knew that the program was being accepted. This matter of quality goes beyond an engine or any other component in our products. It begins with people," he said.

Stevenson said, "This construction machinery business is a business of giants and we are well financed and equipped to be in it. We have a gross investment of $134 million in the road machinery business."

Speaking of the manufacturing tools in all Allis-Chalmers plants, he said that nearly 64 per cent are under 10 years old and 90 per cent are under 20 years old.

New facilities like the multi-million dollar Harvey Works engine plant add to A-C's production and sales potential.



ALLIS-CHALMERS

POWER Parade

Strutting before the packed grandstand were these motor graders turned out by Springfield employes. They wore their new coats of "Allis-Chalmers" yellow.

At Springfield, the dealers toured a new training center providing a factory supervised training program for dealers' service personnel. The 17,000 sq. ft. building has a lecture room, fully-equipped shop, sound-dampened engine check room, atmosphere-conditioned fuel pump and calibration room, a large display and group instruction area, and offices for training staff personnel.

Scholl remarked that Allis-Chalmers is prepared to do anything it "ought to do" to gain more business. "We want planning, we want advanced thinking. Some 50 per cent of the products we will be making in the next five years will be new, and in the next 10 to 20 years we will be making products we haven't even thought of now."

But the Power Parade dealt primarily with the present and immediate future, with products and information the dealers could take back to their customers to get more business the day after the meeting ended.

Scholl assured them that A-C has the management, facilities and product lines to get the job done.

H. T. Larmore, assistant general manager, while introducing the new line, spoke of a $100 million market that presently exists for tractor shovels alone; of a $2.6 billion dollar pipe line market, and of our exclusive selling advantages; of the largest line of crawler tractors and accessories ever available from Allis-Chalmers; of a line of motor graders with a model for every use; of motor scrapers and motor wagons, six big units in all; of tractor loaders, the finest line on the market.

"If you work nights to sell them, we will work nights to make them," he told the salesmen. "We have the products to be sold in all the major construction machinery markets of the world. We can sell to the job because we have the right equipment for every job."

The new HD-21G is a good example of how Allis-Chalmers has prepared its equipment for specific jobs. This huge tractor shovel was specially modified for use in steel mill operations. The 70,000 pound unit features important modifications fitting it for work in high temperatures reaching 1,200 degrees experienced in slag removal. Truck frames have been plated inside and outside for increased strength; hydraulic hoses have been guarded and fireproofed. The operator's compartment has been completely redesigned to provide better visibility and control.

A special slag bucket of special alloy steel, highly resistant to wear and extreme temperatures, has been developed. Bucket booms just underneath the bucket have been tied together to provide a solid base and eliminate weaving.

This unit is one of the advancements Boyd S. Oberlink, senior vice president, had in mind when he said, "Allis-Chalmers has a responsibility to operate a business which will earn a profit sufficient for a fair dividend and for expanding and improving the company; and to employes to provide a growing, dynamic enterprise which is a good place to work."

He said dealers share in this responsibility, because while Allis-Chalmers designs and builds the best construction machinery in the world, it is the dealer who seeks out the customer who buys that machinery and puts it to profitable use.

"We are in this business together and we can only succeed together. Together we can do anything — anything that together we want to do," Oberlink said.

An "Employe and Community Day" enabled Springfield Works people and their guests to view the displays. Here Myron Moore, (third from right) shop clerk foreman, his family and friends inspect an HD-11G crawler made at Springfield.

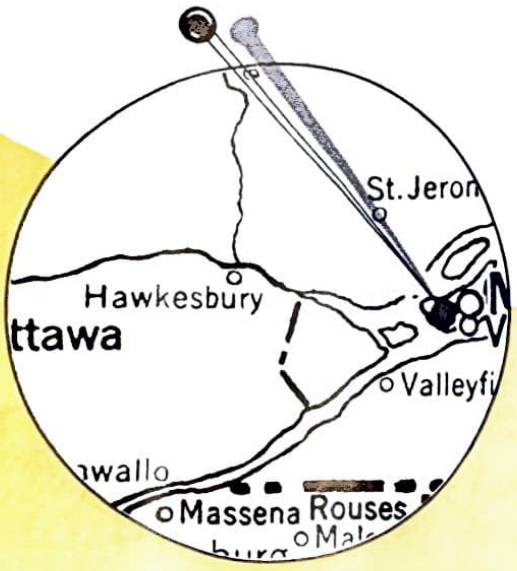
What's your P.Q. *(Plant Quotient)*?

It takes a pretty good memory to quickly recall the names of all Allis-Chalmers manufacturing plants in the United States and Canada. Our operations are many and widespread.

Try your luck at identifying Allis-Chalmers plants from the maps and rhymes on these pages. If you can name the city, which is pin-pointed, you automatically (with one exception) have the name of the Allis-Chalmers Works there.

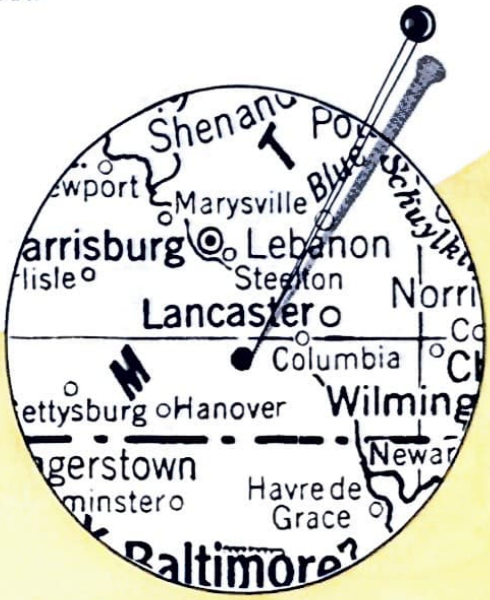
One or more of these cities may be on your vacation route. If you have the time, you may wish to drive past the Allis-Chalmers plant.

The answers to the map puzzle are on page 24.



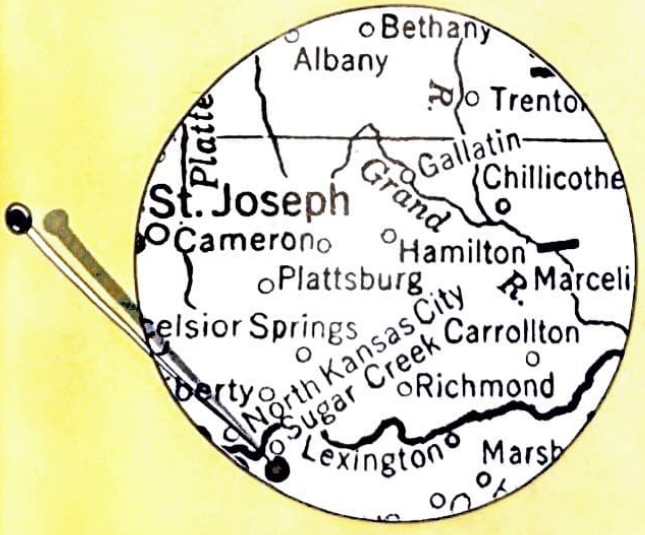
1. French and English spoken here,
Hockey sticks beat loud and clear.

Plant city name _____



2. The U.S. Capital long ago
When the Redcoats were the foe.

Plant city name _____

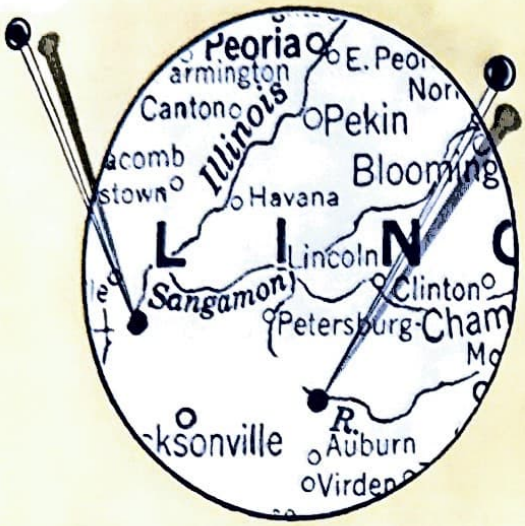


3. A famous Harry calls this home,
People here "must be shown".

Plant city name _____

4. Cincinnati completely surrounds
A city where industry abounds.

Plant city name _____

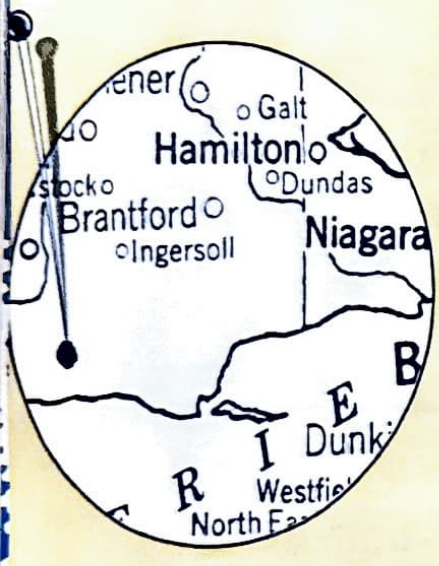


5. Lincoln lore is to be found
In town and country miles around.

Plant city names _____

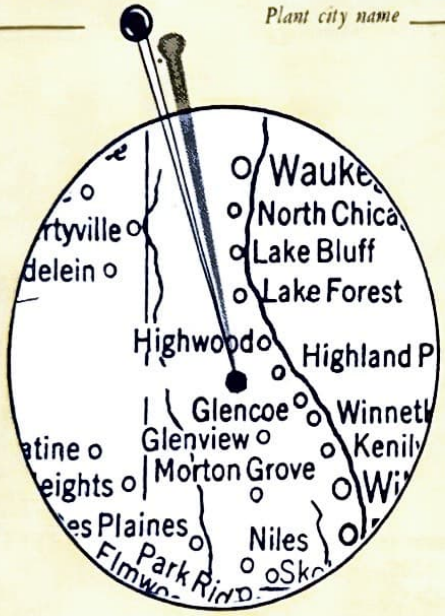
6. The Wabash river courses bold
Near a plant just 10 years old.

Plant city name _____



7. A southern city in this nation,
Yet, it's north in God's creation.

Plant city name _____

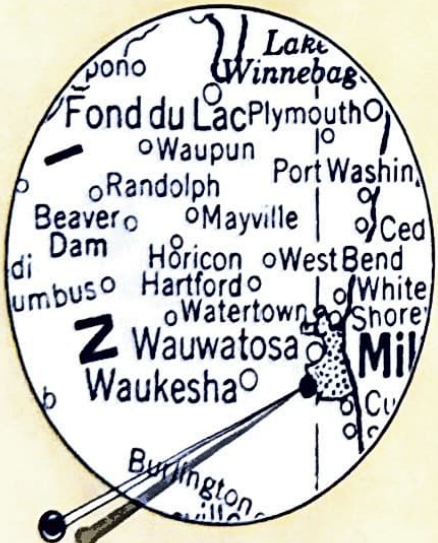


8. Chicago's boundary falls short
Of this neighbor to the north.

Plant city name _____

9. Movie stars and the wide Pacific
Make this location quite terrific.

Plant city name _____



10. Burr mill stones gave it a start,
Now its operations are far apart.

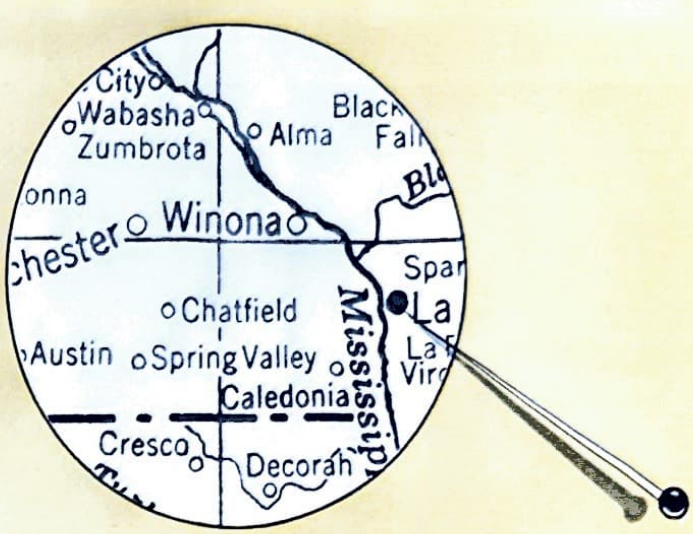
Plant city name _____

11. Centuries past an Englishman
Gave his name to this land.

Plant city name _____

12. The tall corn here, they say,
Grows a foot, day after day.

Plant city name _____

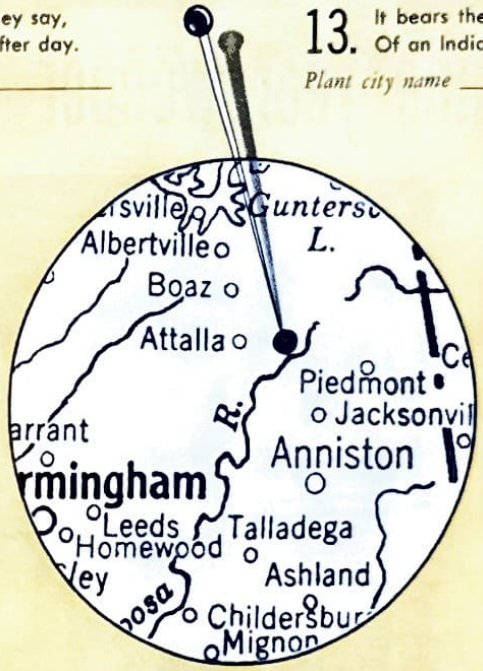


13. It bears the name
Of an Indian game.

Plant city name _____

14. Progressive paper
companies depend
On the products this plant sends.

Plant city name _____

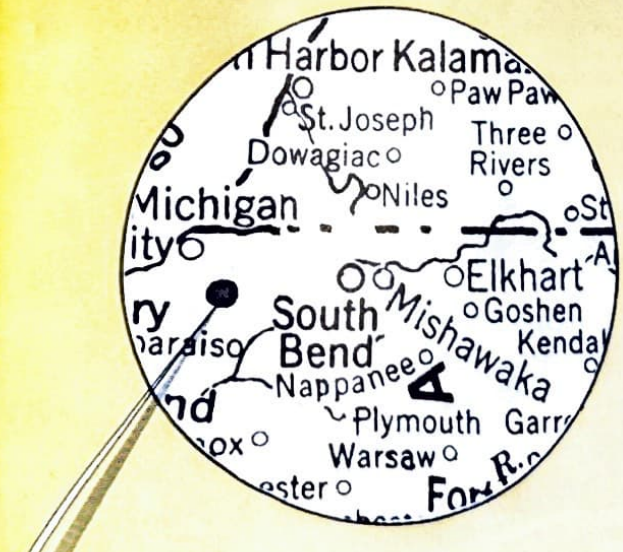


15. Hospitality is in full bloom,
Mountain ridges take up
much room.

Plant city name _____

16. The Windy City's breeze
Reaches this suburb's trees.

Plant city name _____

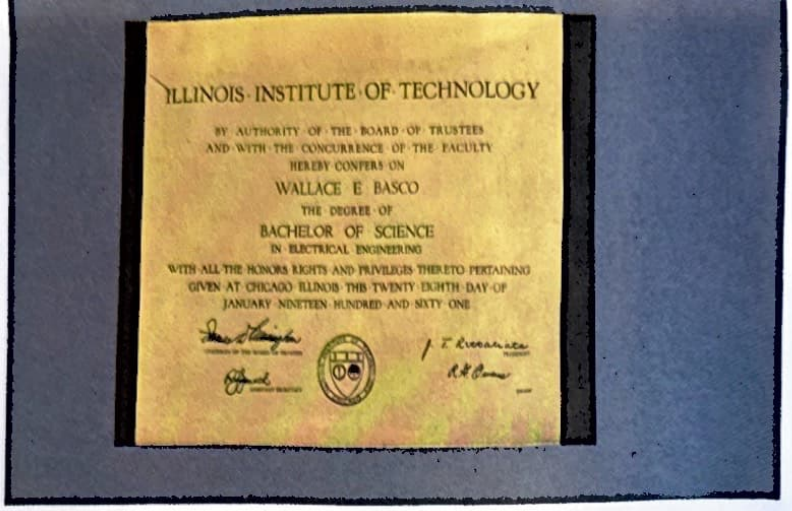


17. There are lakes around
That come into town.

Plant city name _____

18. The man who heads the U.S.A.
Here hung his hat many a day.

Plant city name _____



Wallace Basco gains electrical engineering degree

The nine year wonder

The nine year old son of a Chicago District Office salesman took a dim view of college life.

Young Mike Basco formed his opinion while observing his father, Wallace, combine a demanding sales job with evening school studies undertaken at the Illinois Institute of Technology. For a time, Mike thought this type of life was the rule for college students, not the exception to the rule.

For nine years Wallace E. Basco persevered at this schedule until he received his Bachelor of Science degree in electrical engineering in January.

Since then, Basco has settled back into "normal living." And Mike, a student of promise himself, has taken a less critical view of higher education.

Basco's work-school schedule has become something of a ritual for hundreds of ambitious Allis-Chalmers people who tackle evening school studies in vocational schools, colleges, or through correspondence courses. Basco's nine year effort, however, is well above the average.

Like 1400 other Allis-Chalmers employes, Basco has made good use of the Company's College Tuition Refund plan during the 4½ years it has been in effect. These employes have taken 5800 courses at 87 different colleges and universities during this time.

The plan was initiated by Allis-Chalmers in September, 1956 to encourage and assist the self-development of

With nine years of evening school courses behind him, Wallace Basco, a salesman at the Chicago District Office, feels that "my studies have prepared me to do a better job. But preparation is no guarantee. It's still up to me."

Basco devotes full time selling controls and switchgear to Electro-Motive, a division of General Motors and the nation's largest builder of locomotives.

His evenings comparatively free, Basco now has more time to spend with his children. He admits that studying most of the time "got to be a grind."

Helping pack away some of his college books are Mrs. Basco and son Mike. Basco received $1450 in tuition refunds from Allis-Chalmers.

employes in job-related fields of engineering, science and business administration. Allis-Chalmers pays the full tuition for all completed courses — one-third near the start of the course and the balance upon completion.

On the average, A-C students received about $165 in aid from Allis-Chalmers during the first four years of the program. Basco, who started and completed 25 courses, received $1450 in tuition refunds.

All full-time A-C employes are eligible for the plan. To date, the roster includes hourly, salaried, supervisory and non-supervisory people, and people from our largest plant, West Allis, to the smallest, Oxnard.

Most employes take only one or two courses that will help them in some specific phase of their work; others are after a bachelor's or master's degree.

Although these courses must be taken outside working hours, it is not all night school work. You will find second and third shift people attending day school classes.

Basco applied for the plan as soon as he learned it was being offered. He had been taking evening school classes on his own since 1952, the year he joined Allis-Chalmers at its Chicago District Office.

He had a taste of regular college life when he attended Wright Junior College for 1½ years after his World War II service as a flight engineer in the Air Force. After his marriage, he left school and went into sales work. This was interrupted by another year's service stint during the Korean conflict.

After joining Allis-Chalmers, he decided a college degree would help him a lot in his work. But he agrees with J. C. Collier, manager of the Chicago office, who said, "An EE degree is no magic door. At the rate things are changing, education can become as obsolete as the old street car in 10 years if you don't keep on learning."

Basco said, "Formal education gives you background, tells you where to go for information, more than anything else."

Basco found that the combination of work-school proved to be a case of one hand washing the other. What he learned on the job helped him at school; what he learned at school helped him at work.

Basco, admittedly, is a man who wants to be on the go. "Allis-Chalmers Industries Group is an aggressive organization, and it's getting more so. I've always wanted to be number one in whatever I did, and I feel that everyone else should be the same way. Giving a man new goals and new challenges spurs you to become number one. This is healthy for the individual and the company. It's one reason that I stuck with my studies.

"Much of the credit for my degree goes to my wife, Lee. I liked studying most of the time. But I'm no miracle man. It got to be a grind. That, plus the fact that it took a lot of time away from my family. (He has three children, Mike, Dave 4, and Amy 3). But Lee, kept encouraging me. Otherwise I'd never have made it.

"That tuition refund money I got from the company also was a morale builder. I'll always be grateful for the financial assistance."

As a rule, Basco took two courses a semester plus another in summer school. One semester he took 10 hours of courses, but vows, "I would never do that again. It was just too much."

Basco feels he has "a real interesting job. I get to meet a lot of people in our own company and I deal with somewhere near 100 people at the Electro-Motive, my account for the past three years."

To Electro-Motive, a division of General Motors and the nation's largest builder of locomotives, he sells controls and switchgear. Basco said, "I was a power major at IIT. The subjects in this field helped me more than any others because they are so directly related to my work.

"We have good products to sell, but we have stiff competition. If people like myself can't produce, we have no business on the job. I feel that my studies have prepared me to do a better job. But preparation is no guarantee. It's still up to me."

J. C. Collier, manager of the Chicago Office, advises, "A degree is no magic door. An education can become as obsolete as the old street car in 10 years if you don't keep on learning."

Joe Prohaska solders a static ring at Terre Haute.

Nicholas Drvenkar checks for burrs on a core lamination.

Clarence Dryer gathers material for an assembly job.

Norman Straw completes job on transformer unit component.

Many hands build mobile sub-stations for power systems

Trouble shooter on wheels

Allis-Chalmers mobile sub-stations and mobile transformers are designed and manufactured with one eye on the customer's power requirements, and the other eye on a scale.

Jim Moon, supervisory engineer at the Terre Haute Works, will tell you that every pound and every inch count when turning out these compact and efficient units that travel the nation's highways to wherever they are needed.

This power on wheels exemplifies the increasingly higher requirements customers are placing on equipment in all fields. Allis-Chalmers looks for greater efficiency when it buys a machine tool; A-C's equally cost-conscious customers expect products that will help them do a better job.

The latest technology, methods, and machinery help employes to work easier and better, but, now as always, Allis-Chalmers depends on people — engineers, coil winders, assemblers — to produce a quality product.

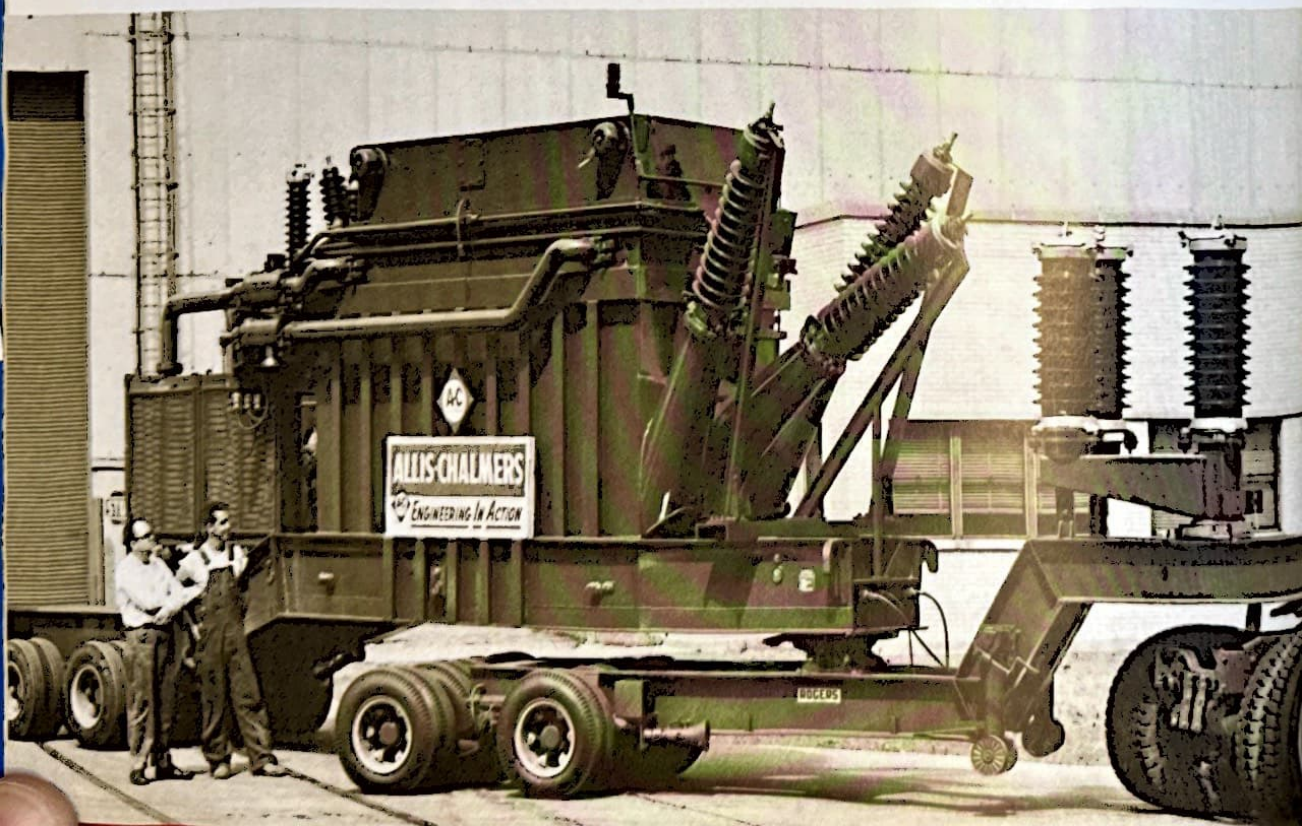
Consider the 20,000-kva 3-phase mobile transformer made at Terre Haute for the California Electric Power Co. The customer detailed his power needs, and the state of California highway code specified the height, width, length and axle loading to be followed so the unit can be moved, without red tape, from one location to the next.

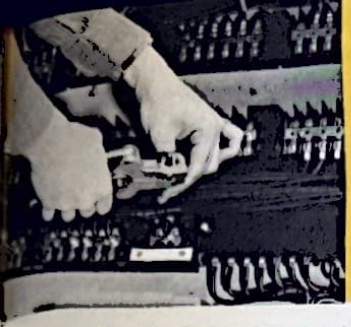
Then the customer asked: "Can you do it?" Allis-Chalmers engineers said they could, and then designed the largest two-winding mobile transformer in the country. (Now under construction at the West Allis Works is one of the largest single phase transformers, rated at 40,000-kva, 230-kv, for the Pacific Gas & Electric Co.)

Moon said, "Because of the weight, size and power requirements, we had to use every possible corner. When the state of California said we must stay within a width of eight feet, it meant eight feet, period."

In the shops, the challenge goes on. Sometimes it's the challenge of repeating an identical job with continued efficiency. Other times, because mobiles are custom constructed, special problems arise, all related to quality and cost.

Jack Leberman, foreman in core lamination department, said, "A burr-free cut



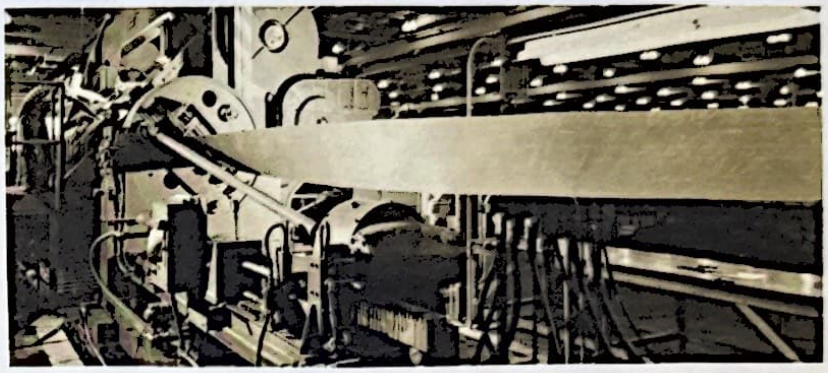


Joe W. Brown wires control panel on power transformer.

Charles Heady at work on a coil winding operation.

Eugene Blanchard tightens legs on a core assembly.

Keith Bussa adjusts dials in the calibrating laboratory.



Core laminations are produced at Terre Haute by this automated payoff system that feeds transformer core steel to this giant shear and punch press. A combination of skilled employes like Frank Toth working with modern equipment is needed to meet the increasingly higher requirements customers are placing on equipment in all fields.

on core laminations for every transformer is essential to efficient and quiet operation. You must have good people who are interested in their work to get this quality. Quality is built in by people as well as by machines, and we have people who are proud of their work."

Units like the mobiles often require special materials such as aluminum and high strength steel to hold down the weight.

Bill Hieber, superintendent, Tank & Plate shop, speaking of the special steel, noted: "This metal is tricky and calls for more pre-planning and more precaution in welding, among other things. But it's all part of the job."

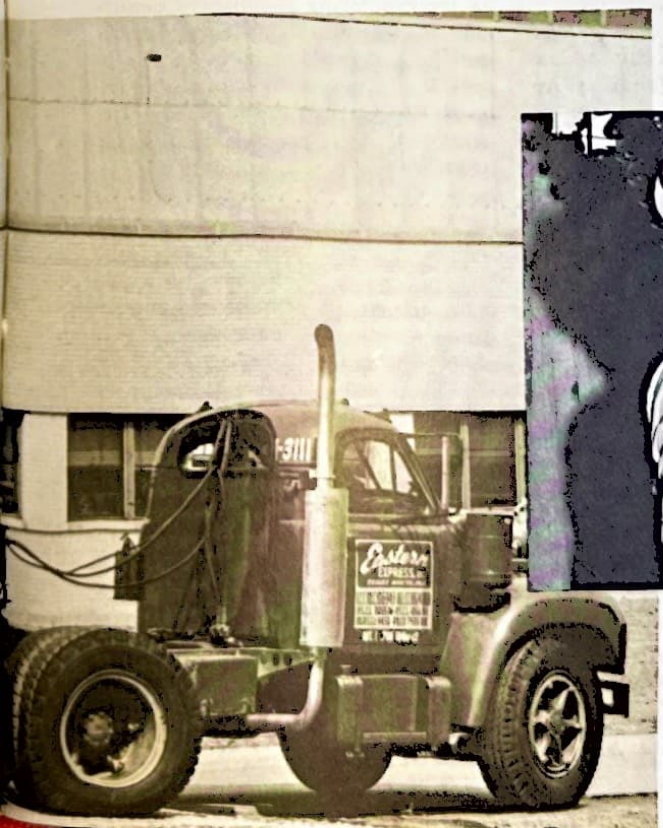
The job of the mobiles is to help insure continuity of electrical service to home and industry. Although most mobile units are obtained primarily for use in emergencies, it is not uncommon to use them more frequently for construction until the permanent power supply for sub-stations is completed, or for maintenance, than for the purpose originally intended.

Surveys have indicated that some systems use mobile units only 6 per cent of the time for emergencies, while they are used 24 per cent of the time for maintenance and 70 per cent for construction. The high percentage of use for construction results because these units provided the most economical source of power for this purpose.

Permanently mounted on a trailer, the mobiles are easily transported from one location to another. In many instances, even under ideal conditions, it would require a minimum time of two to three days to move a spare transformer from its stored location to a station. A mobile spare unit of this type could conceivably reduce this time by as much as 60 per cent.

For these reasons, mobile equipment is becoming a necessity for most power systems. And Allis-Chalmers people are showing they can give the customer the most for his money.

Every inch and every pound counts when fabricating the compact and efficient mobile units. Placing a bushing on a mobile are (from left) George Beeler, Paul Gentry and William Brown.



A masterpiece (left) of design and manufacturing is this two-winding mobile transformer from the Terre Haute Works. Believed to be the largest of its kind, it was purchased by the California Electric Power Co. for maintenance work and to cope with any emergencies that may arise. Shown are Bill Warren (left), a foreman, and Bill Zambenini, a welder-assembler.

The vastness and rugged terrain in much of Canada can conspire against smooth shipment of equipment from Lachine to the customer's site. Lachine employes take the good with the bad in stride and use land, sea and air vehicles and craft to get our products to the customer when he needs them. In contrast to expanses of wilderness, energetic, productive Canada boasts modern and picturesque cities linked by splendid transportation networks.

'It's on the way'

Prompt renewal parts service from Lachine pays off

Checking out a replacement gear for a crusher built at Lachine is Joe Mueller, fitter. Some customers order certain parts at the same time they place the original order because of the remoteness of their site, and the consequences of down time. Equipment out of service only two or three days can easily cost the customer thousands of dollars.

The spring breakup of frozen waterways comes suddenly in parts of Canada. Canadians bet thousands of dollars on the exact moment the ice on certain streams will give way — the winner take all. The interest is intense.

The people at the Lachine Works of Canadian Allis-Chalmers Limited also have a keen interest in ice breakups. At some remote mine a customer may be waiting anxiously for a renewal part for a crusher. The condition of the ice may determine how it can be shipped, and consequently, how soon the customer will receive it.

Getting renewal parts to the customer when he needs it is an integral part of any Allis-Chalmers or CA-C sales and manufacturing operation. In Canada, the job of shipping the part is often more complex than in the United States because of the vast areas of wilderness, the absence of roads and railroads to serve many customer locations, and the weather.

Employes at Lachine take these problems in stride. They utilize boats, barges, trucks, tractors, railroads and aircraft (probably a combination) to meet the customer's deadline.

Art Squibb, assistant manager of sales for the Processing Machinery department at Lachine, said, "We try to anticipate the customer's needs by having in stock at all times, items normally in demand. We also stock in smaller amounts parts, such as crusher side frames, for which we may have a call only once or twice a year.

"A few months ago we had ready for shipment a 7,000 pound pitman for a jaw crusher just 5½ hours after a customer telephoned us. He was anticipating a two to three month shut-down, but because we had the item in stock, he was able to make a truck pick-up in less than half a day. Normally, this size pitman is manufactured in four to six months, including the time to order the casting and to machine it. We are the only company in Canada to keep this type of equipment in stock, and it pays off.

"This renewal parts phase of our operations is as important as any other. A reputation for renewal parts service has as much to do with getting an order as anything else. When a customer purchases equipment from us he has the

Gerry Tranquille, slinger, readies a shaft for delivery to the machining area. Parts are stocked both for new units and to meet emergencies. When an emergency exists, renewal parts receive priority over all others.

Even items for which there is only limited call will be stocked in small number. Here Stan Cieslik makes notes on a crusher head center. A good reputation for parts service is essential to any business.

right to expect that we will have replacement parts available as long as he owns the equipment.

"We feel it is our responsibility to provide spare parts for any piece of equipment we have that is still in existence and useable."

Squibb explains that the company microfilms all drawings and specifications for its lines of processing machinery products. Occasionally, the plant will receive orders for equipment 40, 50, 60 or more years old. These microfilmed drawings then prove invaluable.

Requests for parts for units this old also point out that our products are made to last in face of the extremely rough treatment, said Squibb.

About 80 per cent of the time, shipment of renewal parts is "standard", Squibb will tell you. By this he means the shipping conditions are normal for Canada, where comparatively tough going can begin roughly 100 miles north of the Canadian-United States border. Within this area the vast majority of Canadians reside in modern cities served by excellent transportation. Here, shipping generally causes no major problems.

Beyond, cities, villages, settlements are far and few between, and frequently, so are the transportation facilities. Occasionally, trails must be cut so equipment can be skidded in to processing sites.

For this reason, the airplane is widely used to ship renewal parts. There are limitations, however. During periods of the spring, there may be a foot or two of water over the ice on the "lake" airports, making landings impossible. Or the components may simply be too heavy for the airplane. Or the cost may be prohibitive.

Boats and barges, utilizing Canada's picturesque and widespread network of waterways, are other common means of transportation. Here again, the long winter in many areas limits waterway usage by boats.

The worst times of the year are month-long periods in the spring and in the fall — during the breakup and before the freezeup. In certain areas, "nothing moves" during these two months of the year.

During the spring breakup, the roads leading to a mining site may be impassable preventing truck transportation. A tractor and a skid finally may be used to haul the equipment over the mud to the mine.

Summer is short-lived in the Yukon, the Northwest Territories, and in sections of the southern band of provinces. In some areas, "summer is the time when the ice on the lake is changed," the way one Lachine service man put it.

Yet, at Port Radium, about 50 miles below the arctic circle, CA-C servicemen have been harrassed by mosquitos as "big as horses" during the summer months. Areas somewhat farther south are noted for their huge summer vegetables enhanced by the many hours of summer

'It's on the way'

daylight.

Because of the rugged approaches to some processing sites, Lachine is called upon to meet stout shipping specifications.

Harry Stewart, manager of the Materials and Scheduling department, recalled an order for 12 by 12 inch lumber for skidding to go along with Lachine-made equipment: "Remember," he said, "some of these sites have no cranes. Skidding is absolutely necessary. One of these days someone is going to ask us to build the ship to put it on."

Shipments of renewal parts have varying degrees of urgency. Many customers are so far away they do not wish to risk breakdowns without renewal parts right at the processing sites. It is common for customers to order certain parts at the same time they place the original order. As components wear out, they install the parts on hand and then place an order from Lachine for additional standby parts.

But when an emergency exists, the renewal parts receive priority over all others being processed in the shops. Lachine is prepared to work around the clock, seven days a week to solve the customer's predicament, said Stewart.

Some Lachine people work staggered shifts just so they will be on the job to expedite an emergency order that may come in after the normal office closing time.

Stewart said, "We must be ready to provide emergency service at any time. If we didn't, we would soon be out of business. It is part of our business to be able to ship most components the day they are requested. Our customers can easily lose thousands of dollars if their equipment is inoperative for even two or three days."

Here are a few examples of Lachine's excellent service:

A customer, blasting a large piece of rock above the crusher, broke the side frame. Hours later, the part was on its way.

Another customer was completely shut down by a broken pitman in his crusher. An hour after he notified Lachine, he was told that work had started on the part and would be ready the same day.

At 5:30 p.m. one Sunday a call came in for a gear and pinion for a unit at a Vancouver Island open pit mining operation. A box with 640 pounds of parts was taken to the airport and received by the customer — some 2500 miles away — at 10:30 a.m. Monday, Lachine time.

Such fast delivery of spare parts can lead to major sales of new equipment in the future, and at a time when the future is particularly bright.

Squibb said, "In Processing Machinery we are budgeting to double our volume of sales next year. A lot of iron ore plants, for example, are starting up in Canada. This will mean more business for the A-C plants in the United States and the CA-C plants."

A recent report said that in British Columbia alone the mineral production last year was valued at around $175.3 million, a rise of $26 million from 1959. By 1962 it should be over the $200 million mark, with both copper and iron ore playing a much more important part.

An earlier report said that Canada's output of iron ore will double in the next five years and its value would match that of all major base metals combined. The greatest mining developments the country has ever seen are underway along the Quebec-Labrador trough.

A swing jaw for a crusher is one of many replacement items stocked in the yard at Lachine. Occasionally, parts orders are received for equipment 40 to 60 or more years old, pointing out that our products are made to last in the face of extremely rough treatment. Picured is Wilfred Vouden, lead hand.

Tie rods for gyratory sifters are taken from stock by Bob Mendel, general stores. Stock items range down to many sizes of nuts and bolts. Lachine people feel it is their responsibility to provide parts for any piece of equipment still in existence and usable.

A revolutionary new aggregate plant in British Columbia is another type of market for Lachine-made products. Called Mary Hill, it has a tremendous high grade gravel deposit of glacial origin with reserves estimated at 35-40 million cubic yards. CA-C equipment here includes a crusher, screens, and pumps.

The new plant, capable of producing 14 different kinds of aggregate products at the rate of 500 tons a day, was built to meet unprecedented market demands.

Canada's rich resources are just beginning to undergo extensive development. Its energetic people, as well as the rest of the world, can expect to reap the benefits of these resources.

Canadian Allis-Chalmers employes, with their reputation for manufacturing quality equipment and for keeping this equipment in working order, will most certainly be supplying much of the equipment that turns these resources into useable products.

Science and Engineering Award to Tanke

Invention of an implement tire that has become a milestone in the farm equipment industry has brought W. H. Tanke, chief engineer, LaCrosse Works, the Allis-Chalmers Science and Engineering Award.

He is the second recipient of the award. It was presented for the first time last year to William L. Ringland, chief engineer, Motor and Generator department, West Allis Works.

Tanke has received a silver medallion, a certificate and $5000 for his invention — the zero pressure rubber tire. The importance of this tire is revealed in its complete acceptance by all manufacturers in the farm equipment industry for a wide range of implements.

The invention has been licensed to a number of tire manufacturers.

Primarily, the zero pressure tire affords a practical method of accurately gauging the depth of ground working tools. The self-cleaning tire sheds dirt and has the ability to flex over small ridges, pebbles and other obstructions while holding ground working tools at their depth setting.

Because the tires scour sticky, moist soil without the aid of scrapers, the farmer encounters no aggravating stops to clean them.

The tire has proven invaluable as a press wheel for planters. In addition to gauging planting depth accurately, the tire presses the soil over the seed so that moisture is retained for better germination.

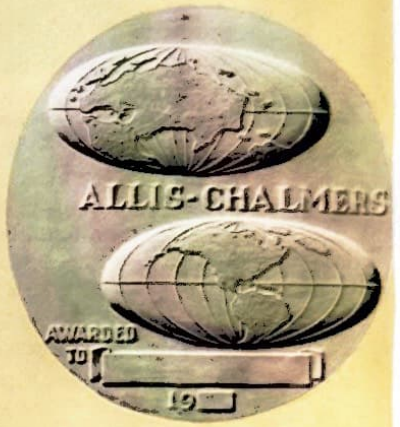
The tire's self-cleaning action makes it popular when applying pre-emergence chemicals at planting time, because the chemical spray would cause soil to stick to any wheel except the zero pressure type.

A more recent application is the use of the tire as a seed press wheel for pressing seed into contact with undisturbed moist soil. Through capillary action, the seed is kept moist until it germinates. This makes it possible to plant at a shallower depth in warmer soil, which offers advantages both in arid areas and where there is a hazard of heavy rainfall at planting time.

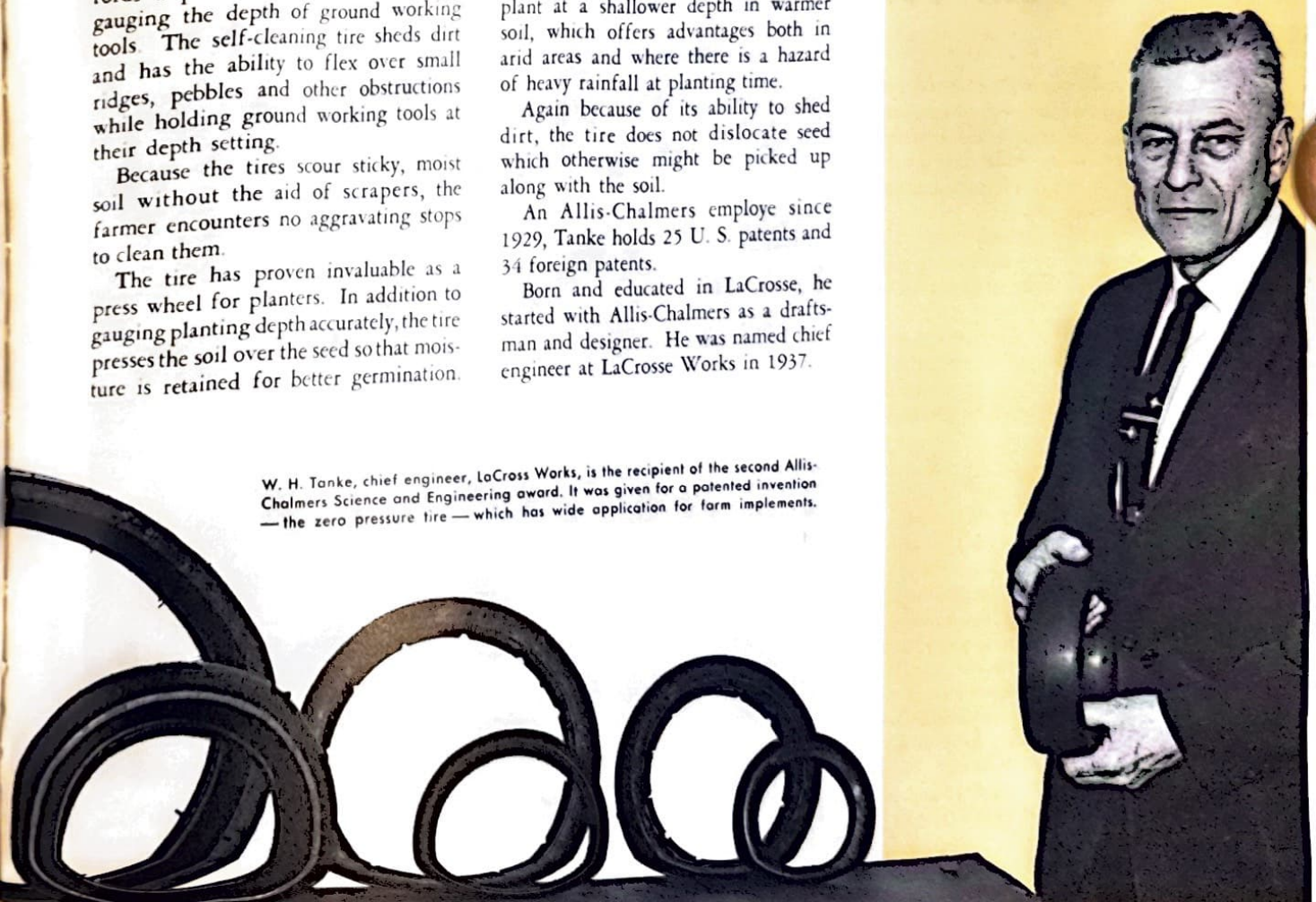
Again because of its ability to shed dirt, the tire does not dislocate seed which otherwise might be picked up along with the soil.

An Allis-Chalmers employe since 1929, Tanke holds 25 U. S. patents and 34 foreign patents.

Born and educated in LaCrosse, he started with Allis-Chalmers as a draftsman and designer. He was named chief engineer at LaCrosse Works in 1937.



A silver medallion, a certificate and $5000 were given to Tanke for his tire concept. Allis-Chalmers depends heavily on employes who develop new ways to get things done.



W. H. Tanke, chief engineer, LaCross Works, is the recipient of the second Allis-Chalmers Science and Engineering award. It was given for a patented invention — the zero pressure tire — which has wide application for farm implements.

Patent system flourishes, benefits A-C people

A 19th century government Commissioner of Patents is said to have suggested that the U.S. patent office be closed. Reportedly, he felt that no one could possibly improve on the inventions made up to that time.

This report, however, is a myth. Officials working with the constant flow of patents are the least likely to feel that new ideas will ever go out of style.

Fortunately for Allis-Chalmers and its employes, no one has given serious consideration to this myth. The patent system in the United States is flourishing, and industrial progress owes a big debt to this fact.

Prolific Allis-Chalmers inventors are presented with certificates of recognition for their "ingenuity and outstanding contribution to society through the patent system" by Robert C. Watson (left), U. S. commissioner of patents. From right are: A. J. Roubal, senior development engineer, Processing Machinery; R. C. Allen, senior engineering consultant, Industries Group; Harold Winograd, consulting engineer, Rectifier section; W. F. Strehlow, senior consulting engineer, Tractor Group; W. C. Sealey, chief engineer, Transformer and Regulator departments. All are from West Allis. The recognition event was sponsored by the Milwaukee Patent Law and the American Patent Law associations.

Six centuries old, still in style

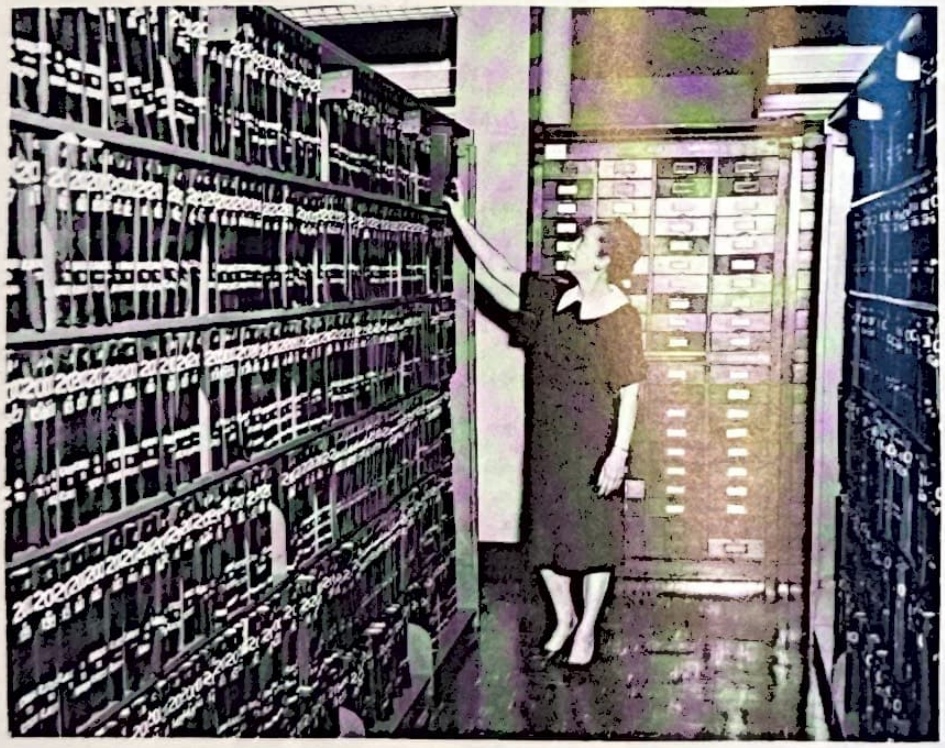
Without the possibility of patent protection, the incentive for creating and developing new ideas would diminish. The benefits of successful development would not outweigh the cost of unsuccessful developments.

Further, why expect any company to spend time and money to make improvements which could be freely copied by competition?

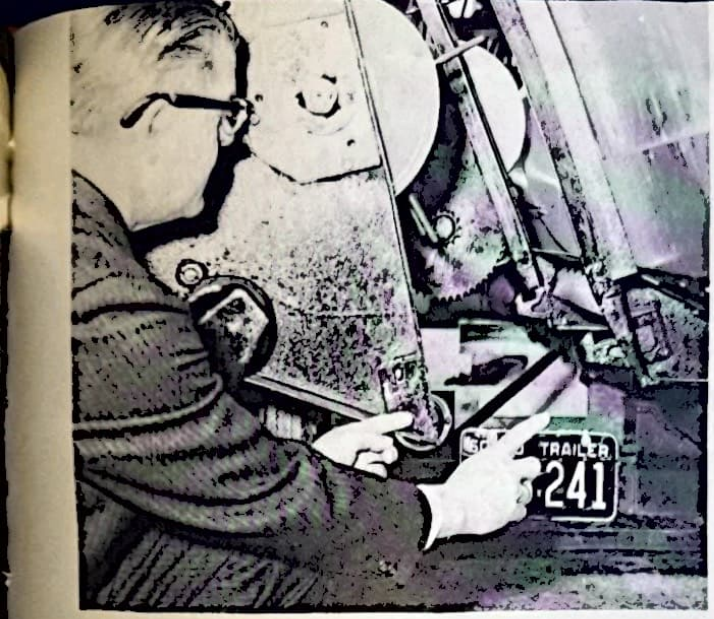
Patent rights are an incentive to provide better products so people can have more and live better. Patent rights encourage progress, and Allis-Chalmers people are contributors to this progress.

Here are a few of the A-C ideas patented last year — a method of processing iron ore in the *Grate-Kiln* system, a non-leaking bearing assembly for grinding mills, a hydraulic system for steam turbines, a transformer tank shield, a folding mechanism for disc harrows, a supercharged generator, a safety mechanism for the *Gleaner Baldwin* harvester.

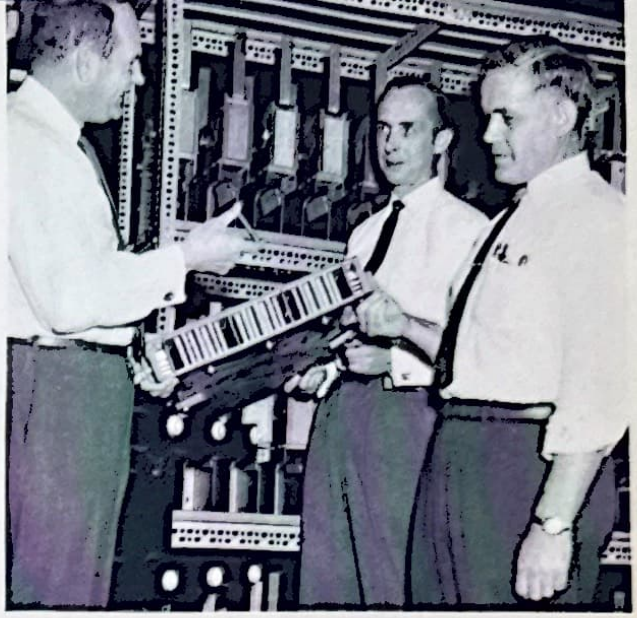
Revolutionary developments can and do "shake up" the industry from time to time. Allis-Chalmers has had many of these. The *Grate-Kiln* iron processing method and the supercharged generator mentioned are in this category.



Allis-Chalmers Patent department files contain all U. S. patents relating to certain product fields. In all, some 3 million patents have been issued in the United States since 1861, when the present numbering system began. Reaching for a file is Ethel Clement, secretary.



A quick, detachable combine header, conceived by Gene Allen, assistant chief engineer at Independence Works, helps increase sales of these units.



Boston Works engineers (from left) Donald Weston, Victor Mortenson, Martin J. Reilly, joined forces for an improved circuit breaker component design.

But, for the most part, new ideas concern less spectacular improvements — refinements that make products more appealing to the customer.

The safety mechanism for the *Gleaner-Baldwin* harvester, to cite a case, would go unnoticed by the average person. But to the farmer on a tight harvesting schedule, the mechanism can prevent lost time and repairs while ripened grain awaits.

Invented by L. E. Oberholtz, chief engineer, and Edgar S. Miller, foreman, Experimental department, Independence Works, the safety device absorbs heavy shock loads when a door of the threshing mechanism springs open to eject a rock or foreign matter that may enter the unit during harvesting. The farmer then merely relatches the door and continues combining.

As another example, A. H. Baguhn, senior development engineer in the Regulator department, invented a device which insures that transformer reversing switches will make definite contact, reducing the possibility of arcing and excessive wear.

Kimball S. Wyman, general patent attorney for Allis-Chalmers, explained that any potentially commercial idea may have patentable significance and value to the company. "Commercial" is the key word.

Thomas Edison found he could make a light bulb glow, but only when he discovered how to make it glow long enough to be practical in competition with gas lighting did it have commercial value and patentable significance.

Wyman said, "Customers have particular respect for engineering good enough to be patented. A unique application can help swing a sale our way. It shows development leadership.

"Patents also bring in revenue in other ways. It is not uncommon for Allis-Chalmers to permit competitors to use our patents for a license fee. This gives us a financial return for our development work from our competitors and makes our ideas available for the good of customers of the entire industry.

"Many people do not know that each inventor becomes immortalized as a part of our country's history when his invention is patented. His name will always be on all copies of the patent printed by the U. S. government.

"A patent is a contribution to technical literature. It teaches a step in the technical progress of our society. All United States patents are permanently on record in Washington — some 3,000,000 in all since 1861 when the present numbering system began.

"Our founding fathers provided for patents in the consitution and our country has been granting patents since 1790. However, the origin of patent systems dates from the Republic of Venice in the 1400's, before Columbus discovered America."

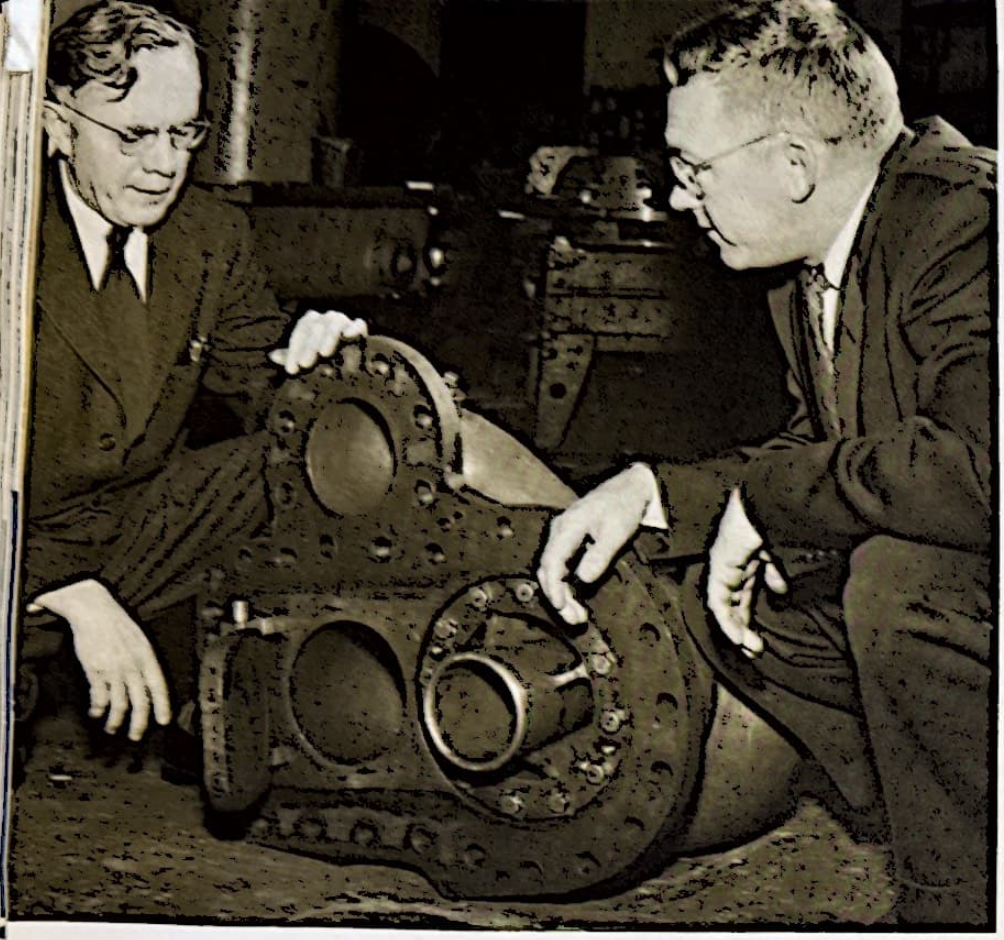
Patents accruing to Allis-Chalmers are on the increase, Wyman said. This is due to a greater product diversification through the years and greater emphasis on product improvement as well as research and development work.

To be patentable, an idea "must promote the useful art." For example, it must perform a useful function. If it is like something else already published or in use, it must perform in a better way.

Great care is taken at Allis-Chalmers to make certain that the ideas of Allis-Chalmers people going into products do not accidentally infringe on patents to others. If this were not done, the company would be involved in costly patent infringements when our products were on the market.

Our patent department works with employes in other departments to help find, as early as possible, ideas of patentable potential. A vibrating mechan-

Detailed drawings are included with each patent sent to Washington, D.C. Attorney Robert Benson discusses the details of a special shell mold with Adolph Werner, chief draftsman, A-C Patent department.



Attorney John Hines learns about an element in a hydraulic system for steam turbines from C. E. Kenney (left), development engineer, Thermal Power department, West Allis Works.

Six centuries old, still in style

ism for vibrating screens, for example, is considered by a patent attorney working regularly with Processing Machinery products.

Then the attorney cross-checks all patents filed on the subject of vibrating mechanisms for vibrating screens. This may be done in the Patent department's files, which includes all patents relating to certain product fields, or it may be done at the patent offices in Washington, D. C. by our attorney.

The attorney reviews these related patents with engineers to be sure we are clear of patents to others. Further, if there is a basis for a patent, he prepares and forwards a patent application in the name of the inventor to the U. S. Patent Office, where independent investigations are made. This idea must be so well described and well illustrated in the papers he prepares that a man skilled in the particular subject could actually carry out the idea.

Our government, on the average, takes 39 months for approval of the application for patent. This average time is true of Allis-Chalmers ideas as well, said Wyman. Some patents are issued in less than a year and others take seven or eight years.

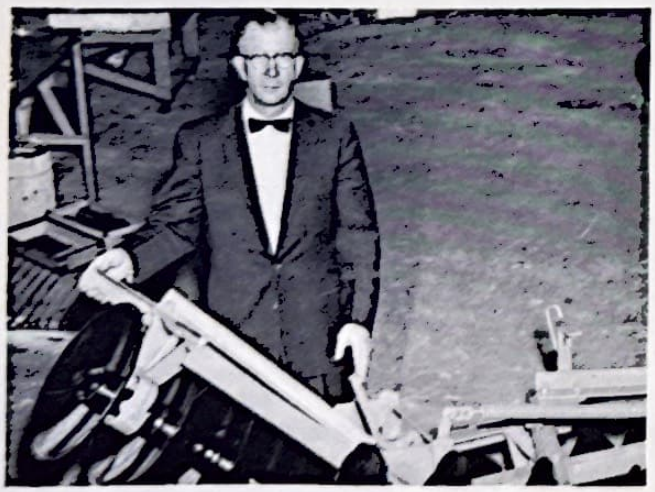
Once issued, the patent gives protection from copying for 17 years. After that, anyone can use the invention without expressed permission of the inventor or his company — the invention is then said to go into the public domain.

An attorney's discovery that an invention has already been patented by someone else can be turned to our advantage. Allis-Chalmers people have in some instances decided to design around the patented invention and as a result have had a truly improved design with sales advantages.

"This is an example of how patents advance the art, advance knowledge," said Wyman. "Our people can see from published patents what has been done before, and then can figure out ways to do it better.

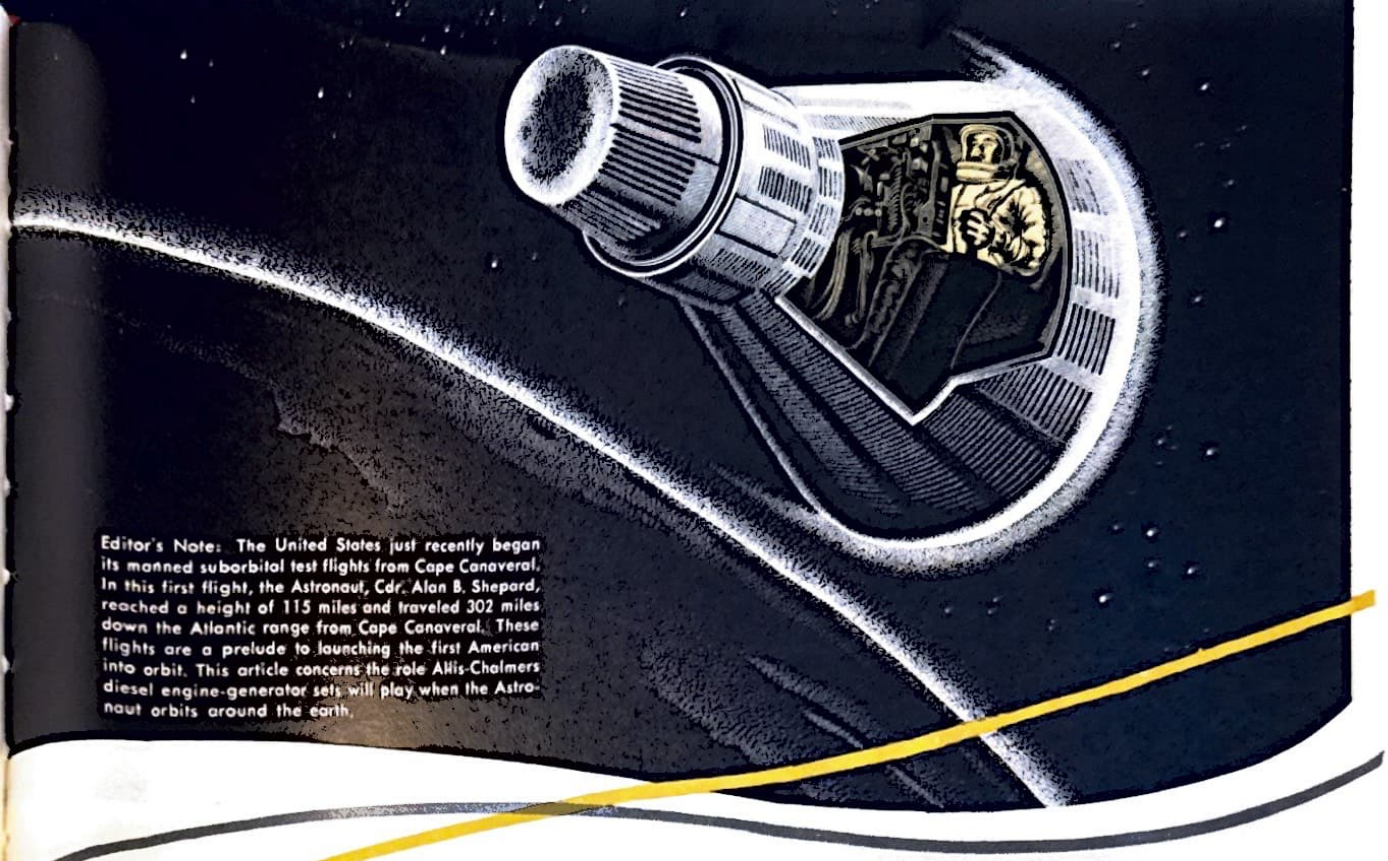
"Patentable ideas have come from employes in all areas of work. That is why we check ideas submitted through our Suggestion program. However, it is only natural that the bulk of ideas that have patent possibilities come from employes whose prime job is development.

"Businesses have been built on the strength of a single patent. Our business, old and respected as it is, for continued success depends heavily on men and women who come up with new ways to get things done."



A folding mechanism for disc harrows is the patented idea of M. E. Walberg, project engineer, at LaCrosse. It is another product refinement that attracts customers.

Pages of information make up any one patent application. Reviewing a file is Wenzel Zierold, patent counsel. Patents are contributions to technical literature.

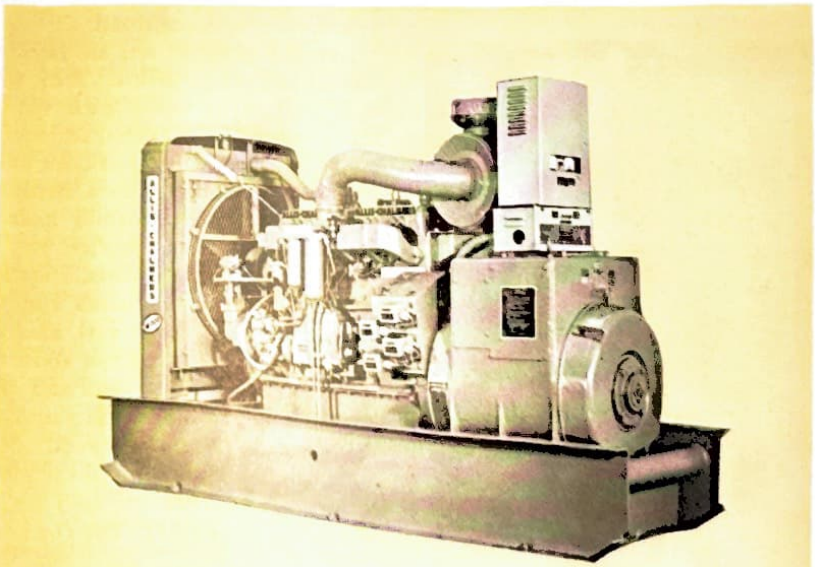


Editor's Note: The United States just recently began its manned suborbital test flights from Cape Canaveral. In this first flight, the Astronaut, Cdr. Alan B. Shepard, reached a height of 115 miles and traveled 302 miles down the Atlantic range from Cape Canaveral. These flights are a prelude to launching the first American into orbit. This article concerns the role Allis-Chalmers diesel engine-generator sets will play when the Astronaut orbits around the earth.

Power for man in orbit

47 A-C diesel engine-generator sets used at tracking stations around the globe

For 4½ hours an American Astronaut will streak in orbit sometime this year. During his three 90-minute passes around the earth, the Astronaut and his spacecraft will be in nearly constant touch with ground-level tracking stations, 120 miles below.



Forty-seven of these engine-generator sets will help ground personnel keep in contact with the United States' Man in Orbit when he circles the earth. This particular 100 kw unit is equipped to combat a dust problem encountered at the Nigeria station near the Sahara desert. These units are assembled at Harvey Works, where the diesel engines are manufactured.

Powering radar, computers, lighting, radio transmitters and receivers in this intricate Project Mercury network of communications will be Allis-Chalmers diesel engine-generator sets engineered and manufactured by employes at Harvey, Norwood and West Allis Works.

Forty-seven sets have been sold to Burns and Roe, Inc., a member of the five-company team led by Western Electric Company, which has been given the responsibility by the National Aeronautics and Space Administration for producing the tracking and ground instrumentation network to follow the Astronaut's flight and maintain contact with him.

The network includes both radar tracking and telemetry installations, located at 18 sites around the globe. Some of the stations are constructed at existing installations, some are on islands, and in remote areas, and still others are on picket ships.

A-C sets are installed at Bermuda, Grand Canary Island, Canton Island, Australia, Nigeria, Zanzibar, Hawaii, Mexico, and California.

Our equipment will be responsible for helping provide power that is reliable and constant and which will not interfere with the sensitive communications equipment.

Power for man in orbit

Discussing the route of the orbiting capsule are (from left) Robert R. Walker, manager, Defense Material, Defense Products Division; E. A. Gibbons, manager, generator set sales, Engine-Materiel Handling Division, and M. A. Buege, manager, Contract Administration, Defense Products.

To meet these requirements, we used the standard 16000 diesel engine, which is noted for its low fuel consumption, and the new brushless generator. Static type magnetic amplifier voltage regulators are used to provide regulation within one per cent and voltage recovery about four times better than conventional methods.

The radar equipment will tell where the capsule-like spacecraft is during the flight. Other equipment will send and receive signals from the craft and its daring passenger.

If, while in flight, the Astronaut is unable to respond as planned, ground-operated stations will take over for him. Computers will relay data from station to station to keep pace with the 17,000-mph speed of the craft.

A man who was instrumental in the sale, E. A. Gibbons, manager, generator set sales, Engine-Material Handling Division, said, "The competition for this order was extremely tough. We got it for a number of reasons. First, we could offer the quality equipment needed. The power source for the electronic devices involved must have very excellent alternating current characteristics. Our sets have these characteristics.

"Then, the contractor wanted superior performance sets that were commercially available. There wasn't time for extensive research and development. Our first units were shipped eight weeks after we got the order.

"These sets are nearly identical to those we are making commercially available day after day. The same features that make our sets acceptable for this exacting communications work is found in the sets sold for rough service jobs like the construction of a tunnel in West Virginia, and those used as reliable standby power for a hospital in West Allis."

Gibbons pointed out, however, that some accessory adaptations were necessary. "We added fuel tanks in the base and special safety controls to all units. The units for the Nigeria station near the Sahara desert required special air filters and extra protection for controls due to the dust problem."

He said, "Also in our favor — we could offer the customer undivided responsibility. We ourselves make all the major components in our engine-generator sets.

"This sale proves again that our diversification of talents, products and facilities makes it possible for Allis-Chalmers to tackle almost any job it wants to."

The design of the sets was standardized to permit the use of multiple units at any site, and to permit operational procedures to be standardized.

Forty-five of the 47 sets are rated at 100 kw and two at 30 kw. They will make available the power each station will require to keep its contact equipment working perfectly. Sufficient units were installed to provide a bank of standby power when normal maintenance takes a unit out of service.

The highly critical Bermuda station has 10 of our sets. Bermuda and the launching site, Cape Canaveral, Fla., are the only two stations that can abort the flight if something goes amiss and drop the Astronaut and his capsule into the ocean in a planned pickup area.

After the third pass around the globe, the Muchea, Australia site will set the retro-rockets for re-entry. The clock will

This lineup of our engine-generator sets is shown being installed at the Bermuda station.

A typical island site (left) in the tracking and ground instrumentation system of Project Mercury. Included are power and operational buildings, living quarters, utilities, and radar and telemetry equipment.

The map at the right shows the orbit in which Project Mercury's Astronaut will travel in his three passes around the earth.

be checked at Hawaii and re-set if necessary. The Astronaut will actually trigger the retro-rockets.

M. A. Buege, manager of Contract Administration for the Defense Products Division, which coordinated the sale, said, "We have called upon the world-wide service organization of Allis-Chalmers International to help service our sets in foreign locations.

"The Honolulu Iron Works, an A-C distributor, for example, is aware that we have equipment at the Hawaiian tracking station and will be ready to service equipment and furnish parts. Our wide-spread overseas organization is a big asset to us in this sale."

In orbit, the Astronaut will be surrounded with every useful instrument and device which science and industry can provide. Communication with him will help to analyze his strange and fluctuating environment, condition, reactions and comments.

His spacecraft itself is a special capsule designed to protect him from the tremendous forces of acceleration, deceleration and the fiery heat of re-entry.

The 4½ hour flight in orbit is being preceded by suborbital test flights down the Atlantic range from Cape Canaveral.

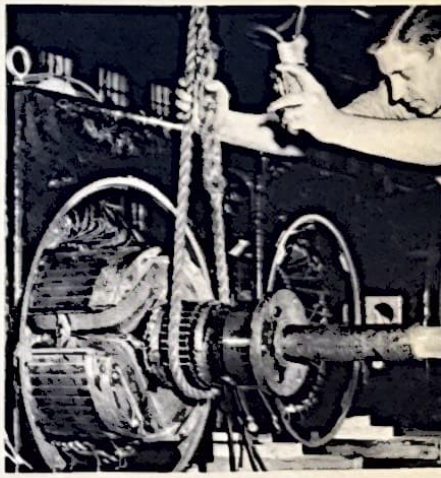
Projects of such commanding importance are nothing new for our engine-generator units. They are now serving the White Alice sites in Alaska.

Unlike the sets for Project Mercury's Man in Orbit, which will be at sites that weave a pattern above and below the equator, the White Alice sets operate in temperatures as low as 40 degrees below zero.

Our versatile sets have a wide range of application: for construction — as portable units to supply power for areas not easily serviced from utility systems; for atomic energy — producing radioactive materials requiring vast amounts of electric power; for watershed control — during a five hour power failure, a 75 kw unit produced the electric power needed to operate six flood gates.

And now it is NASA's Man in Orbit who will be relying heavily on A-C diesel engine-generator sets to make his mission a success.

Assembling a static regulator of the type used on the sets is Glen Phillips, Hawley Shop, West Allis Works. The sets are nearly identical to those we are making commercially available day after day.



Charles Wilson, Norwood Works assembler, guides a salient pole rotor into a generator stator assembly. These generators are the type used in the diesel engine-generator sets.

a-c scope

ALLIS-CHALMERS MFG. CO.

Box 512
Milwaukee, Wis.

The family of Gadsden Works photographer D. C. Irvin is dressed in clothes that were fashionable 100 years ago. They participated in the Etowah County (Ala.) observance of the National Centennial Commemoration of the Civil War. The Irvins won first prize as the best dressed couple at an old-fashioned box supper party held in Gadsden. Their children are Stanley and Jerry.

Answers to plant quiz

Pages 7-8-9

1. Lachine, Quebec
2. York, Pa.
3. Independence, Mo.
4. Norwood, Ohio
5. Beardstown, Springfield, Ill.
6. Terre Haute, Ind.
7. St. Thomas, Ontario
8. Deerfield, Ill.
9. Oxnard, Calif.
10. West Allis, Wis.
11. Pittsburgh, Pa.
12. Cedar Rapids, Iowa
13. LaCrosse, Wis.
14. Appleton, Wis. (Valley Iron Works Corp.)
15. Gadsden, Ala.
16. Harvey, Ill.
17. LaPorte, Ind.
18. Boston, Mass.