ALLIS-CHALMERS

SCOPE

SUMMER 1967

USNS KANE: A SEAGOING LAB . . . Page 14

ALLIS-CHALMERS
SCOPE

Magazine for Employes

Jack Pearson .....Editor

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BETWEEN THE COVERS

The United States is embarking on a strong program aimed at providing a better understanding and use of the resources of the sea. Allis-Chalmers know-how and products have vital roles aboard a new ship whose mission is part of that oceanography program. Come along for a trial cruise on the USNS Kane, featured in the cover story starting on Page 14.

Have you or your children ridden a Ferris wheel lately? You might be surprised to learn that nearly all of them are powered by Allis-Chalmers engines. Page 6.

Another unusual application for Allis-Chalmers equipment took place last year near Atlanta, Georgia, where our construction machinery was used to form a new golf course. Page 11.

The ticker symbol "AH" is used at the New York Stock Exchange to identify Allis-Chalmers on the Big Board. How does the exchange operate, how is the Company's stock bought and sold? Page 19.

Two aspects of education, both of which are continuing Allis-Chalmers programs, share the spotlight. The General Management Course and its "Mister One Thousand" are described beginning on Page 22. The ten latest college scholarship winners are pictured on the back cover.

Why was corn traditionally planted in 40-inch rows? Simply, that those 40 inches adequately accommodated the width of a horse.

Taking a NARROW Viewpoint

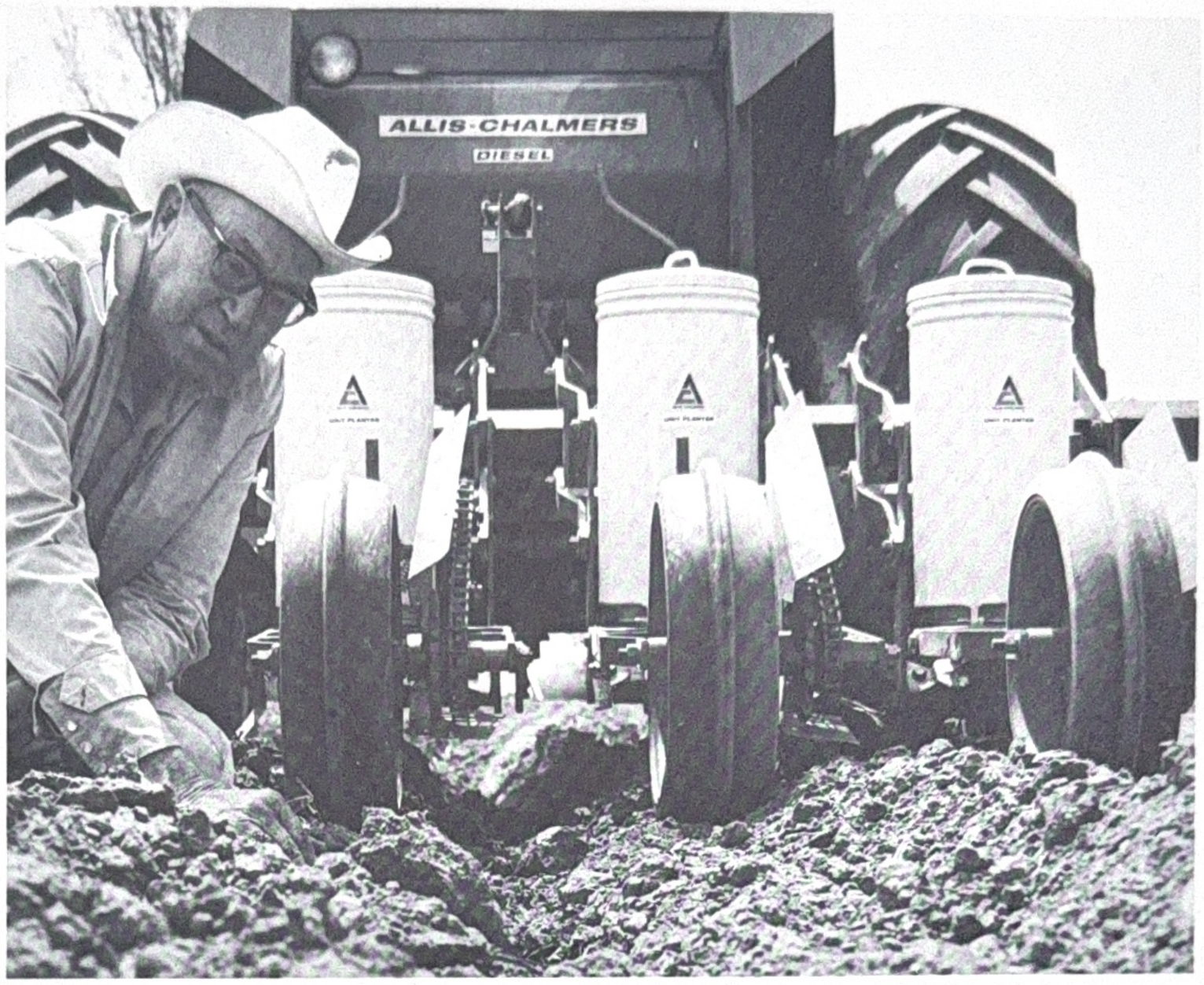
From Maryland to Colorado, hundreds of the nation's most knowledgeable farmers are growing corn a new way. The prospects are more bushels per acre and bigger profit.

Their corn is planted in rows only 20 inches apart, half the traditional distance. New equipment made available first by Allis-Chalmers permitted the change.

For generations corn was invariably planted in 40-inch rows. The reasoning: The space would accommodate the width of a horse, pulling a cultivator between the rows. When the horse was supplanted by the tractor, the 40-inch rows remained, perpetuated perhaps by the same sort of logic which put the engine at the front of the "horseless carriage."

In any case, it was not until recent years that farmers, plant geneticists, farm chemical people and Allis-Chalmers farm equipment engineers began experimenting in earnest with narrower rows. New varieties of hybrid seed and greater knowledge of modern fertilizers opened a whole new technology.

It all began in 1962 when Allis-



This 20-inch Allis-Chalmers planter was one of two narrow-row machines used to put Orville Tunis' corn in the Kansas earth last year. His yield exceeded 175 bushels per acre.

Chalmers built the first narrow-row or 30-inch cornhead harvester. Tests run with this one experimental unit were encouraging enough to begin commercial production in 1963. That year 25 units were built, and in the next year, 50 units.

By 1965, the narrow-row concept really took off. Allis-Chalmers built nearly ten times as many units as the year before. It was also in 1965 that the national magazine "Successful Farming" ran an article challenging farmers to raise 200 bushels of corn per acre. On a farm near Moweaqua, Illinois, Clyde Hight took the dare.

He asked Allis-Chalmers to build a 20-inch cornhead, and the Company agreed, not only to build the cornhead, but a 20-inch planter as well.

Hight achieved those 200 bushels of corn per acre and then some (he had been averaging between 91 and 157 the previous four years), and 5,000 visitors came to his farm to see how he did it. The revolution had begun. (More recently, Hight, as well as some other farmers throughout the U.S., have begun using *No-Til* planters in connection with their 20-inch programs. The new units developed by Allis-Chalmers enable farmers to get the seeds into the ground with an absolute minimum of tillage.)

Over 300 farmers tried 20-inch corn rows for the first time in 1966. All used Allis-Chalmers cornheads. The *Gleaner* combine had the only 20-inch cornhead on the market. But more important, the farmers were happy with the results they achieved.

By using Allis-Chalmers 20-inch planting and harvesting equipment, they did remarkably better than the national average. Narrow-row enthusiasts averaged 122 bushels of corn an acre; the national average was 72, reflecting an unusually hot, dry, windy summer in many parts of the Corn Belt.

The town of Satanta, Kansas, is out where it takes irrigation water to get a corn crop of any kind. But when the corn is given what it needs, it gives back in abundance. Near Satanta, Orville Tunis farms big acreage and he makes each acre pay off big.

Last year Tunis went to 20-inch row corn on his 260 acres. Previously, he had always planted in 40-inch rows, but he had seen the extra yield value of what 30-inch rows could do. Then when he read what 20-inch rows had done, and found that Allis-Chalmers could provide equipment for such rows, he decided that would be for him. He figured he could up his production by 35 to 40 bushels per acre over 40-inch rows.

The fact that his land was short of natural moisture didn't hurt much. He irrigated. The average daily high temperature in July topped 100 degrees. Other adverse weather included a hail storm that hit 140 acres. It knocked the corn down badly. The same night winds were clocked up to 80 miles an hour.

Despite the mess the weather caused, the harvest picture wasn't bad. Tunis' first year experience with his 20-inch *Gleaner* head was a good one.

"That machine doesn't go through the downed corn and throw ears—it just sort of combs through them. I like it. My *Gleaner* combine with 20-inch head sure got the corn out. And, it didn't jerk it out either," said the Kansan.

Having planned for 150 bushels

MINNESOTA— Lawrence Doyen of Garden City had corn yields in excess of 154 bushels per acre last year, while his neighbors, planting in conventional 40-inch rows, averaged only 115.

per acre, Tunis was happy with his 1966 accomplishments. On 150 acres, most of which was hailed on, he harvested 175 bushels per acre. On another 17 acres the measured per acre yield was 191 bushels. Obviously, Tunis got plenty of corn from his total 260 acres planted in 20-inch rows. His yields in 40-inch rows in previous years averaged about 115 bushels per acre. This year he planted 550 acres in 20-inch rows.

In 1966 Lawrence Doyen of Garden City, Minnesota, had about 300 acres of corn in 20-inch rows. His harvest yielded 154 bushels to the acre.

Doyen manages and operates 640 acres and, in addition to crops, raises about 150 head of cattle and 1,000 hogs a year. Doyen said his average yield the year before had been only 125 bushels to the acre—and this means 20-inch corn is at least partly responsible for a good increase in yield. This year he increased his 20-inch corn acreage from 300 to 325, and he also planted 200 acres in soybeans.

One of the outstanding advantages of narrow row corn is that moisture is conserved through earlier shading of the ground. "It doesn't even have to rain as much," Doyen said. "The ears, though, are good sized and I believe that the fertilizer is utilized better."

Ted "Skip" Hammond of Nebraska City, Nebraska, had good luck in 1965 with 28-inch rows, and had seen enough experimental evidence that 20-inch row corn could work even better. He decided on planting 340 acres of his corn in 20-inch rows in 1966.

Hammond averaged 155 bushels an acre from 20-inch rows, about double what he had three years before, and roughly 50 percent better than what his neighbors were achieving. He's increased his income close to $40 per acre, and upped his 20-inch crop to 800 acres this year.

Don Humphrey of Kingston, Ohio, was another successful farmer. "I planted some corn for three other farmers with my narrow-row planter, as well as my own," he said. "I think it is accurate to say we are all averaging about 25 to 30 bushels more per acre in the 20-inch row plantings than in those that were spaced 40 inches apart. Generally speaking, my 20-inch corn ran about 155 bushels and the 40-inch corn averaged about 110." Humphrey planted 500 acres in corn and 60 in soybeans this year, all in 20-inch rows.

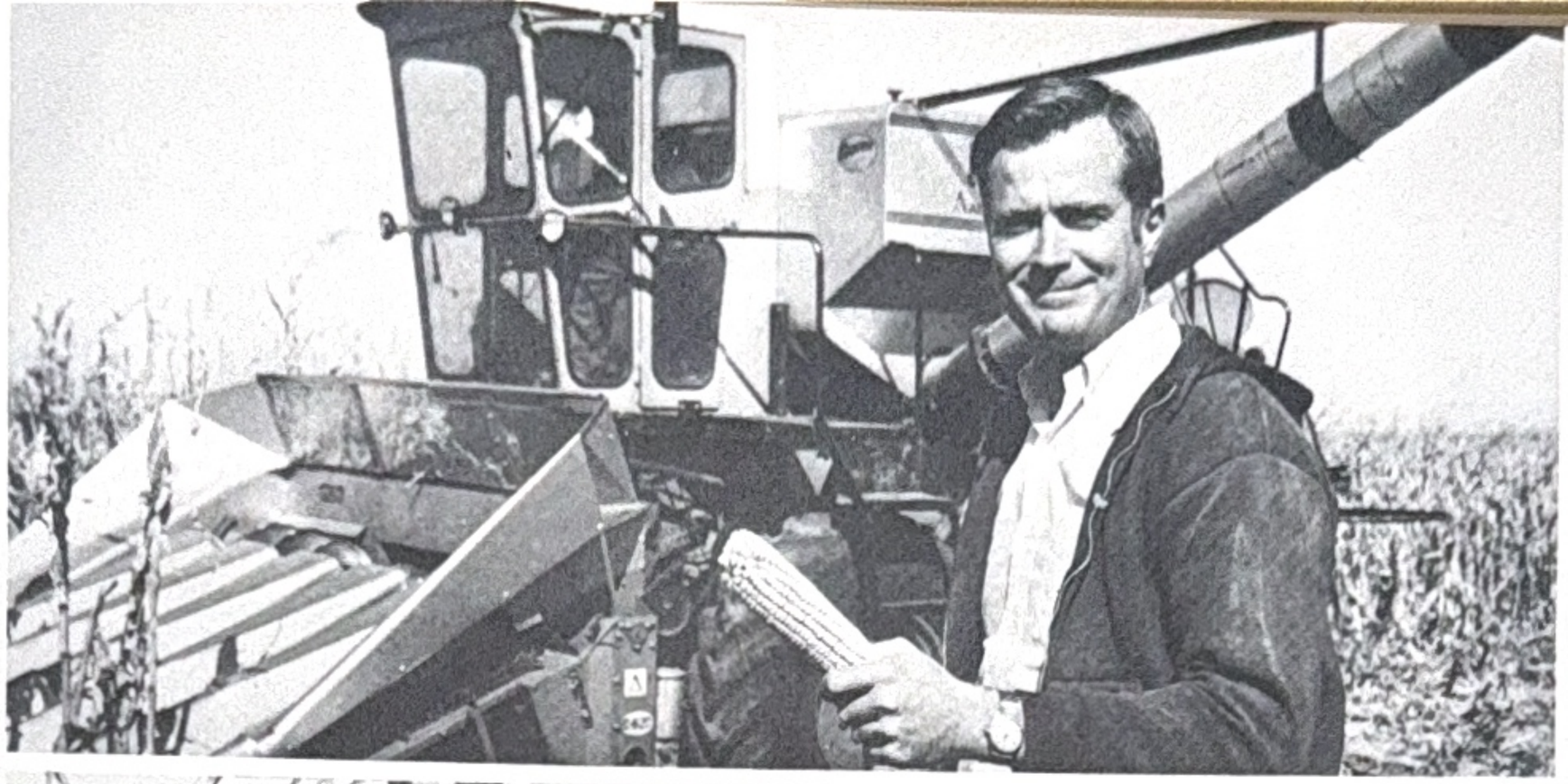
"The two biggest advantages that I see are easier and better weed control because of faster shading of the ground, and better conservation of moisture. Our rainfall during the growing season, from planting until maturity, totaled only eight inches. So the crop utilized it well."

Doyle Smith, who operates 2,100 acres in the Lawton area of Iowa, is an enthusiastic booster for the new Allis-Chalmers equipment. Smith planted 750 acres of corn and 300 acres of soybeans. He started the latter part of April last year and made rapid progress on his large acreage, which includes both bottom land and steeply sloping contoured areas. His output was 126 bushels per acre, in a drouth zone where nearly all farms were managing only about 100.

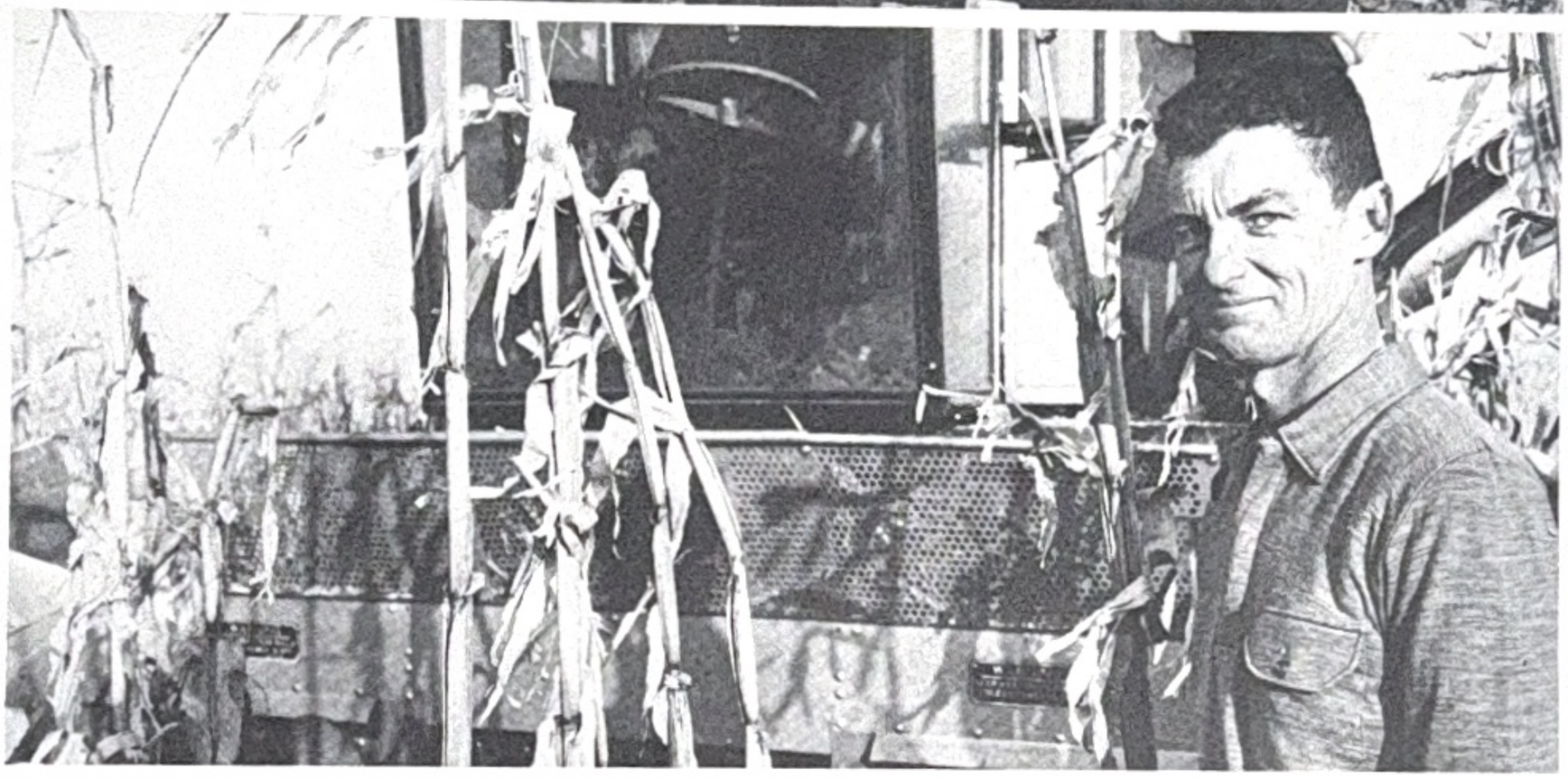
"I like the shading effect of narrow rows during hot, summer days," he said. "You can feel the difference if you walk down the rows. The soil actually felt cooler in our fields than in the neighbors." He's with 20-inch rows to stay. This year 1,170 acres are in corn, and 30 acres are planted in soybeans.

Tests by Dr. William Colville, professor of agronomy, University of Nebraska College of Agriculture, showed that at 24,000 plants per acre, 20-inch corn yielded 24 percent more than 40-inch rows.

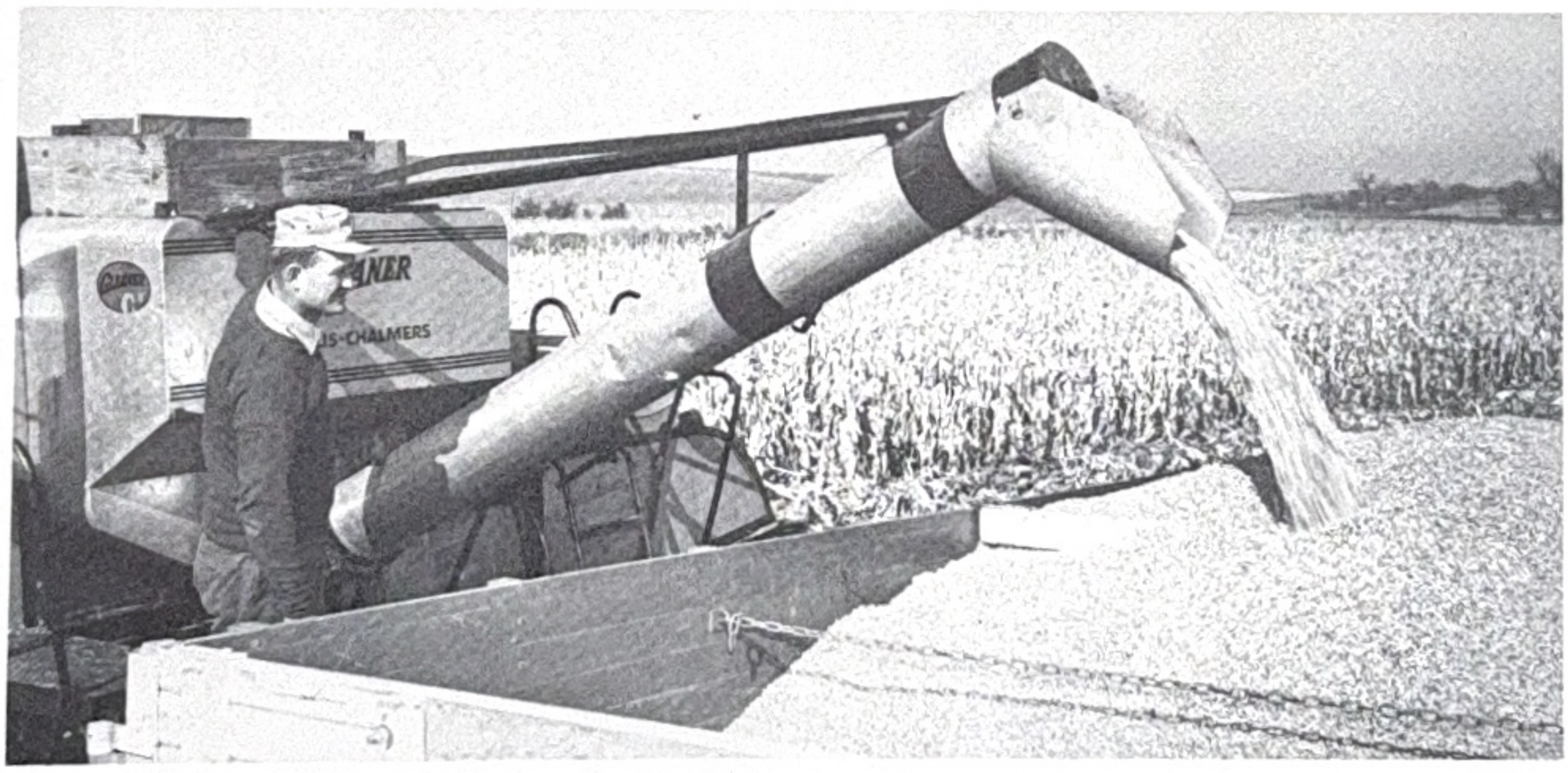
"The main feature of narrow-row spacing is not an increase in number of plants per acre but in more uniform spacing of plants to each other," Professor Colville said. "This enables the plants to get better use of plant foods, moisture and especially light. It also helps slow down weed growth because of more shading. A population of 18,000



NEBRASKA—
Ted Hammond
of Nebraska City
was very pleased with
his results last year.
While nearby fields
were producing only
100 bushels of corn
per acre, Hammond
was getting 155.



OHIO—
Near Kingston,
Don Humphrey
averaged 155
bushels of corn per
acre with 20-inch
rows, setting a fine
example for his
neighbors, who
averaged only 108.



IOWA—
Doyle Smith
of Lawton
experimented
with 20-inch rows
last summer.
On 750 acres, he
averaged 126 bushels
per acre, 21 better
than his neighbors.

plants per acre in 40-inch rows would be spaced at just under nine inches apart in the row. The same 18,000 plants in 20-inch rows would be spaced 18 inches apart which would reduce waste space."

L. W. Davis, general manager at the Allis-Chalmers Farm Equipment Division and a vice president, said: "Farmers who are already getting maximum yields from conventional rows can reasonably expect substantially higher yields from narrow-row corn.

"Why is it important to be able to produce more at less cost and in less time? For one thing, much of what we eat is linked to the cost of producing corn—meat and milk being merely two of the most obvious ones.

"Corn is the foundation of U. S. farm production, and the world will continue to look to the United States for relief from chronic hunger that grows worse each year as the population expands while the output of farming fails to keep pace." ■

In Business For the Fun of It

The gigantic, original Ferris wheel of 1893, as depicted in a magazine illustration of that period.

A COMPANY in Illinois has bought hundreds of engines from Allis-Chalmers in the last 14 years—just for the fun of it.

Pleasure—especially for children—is the end product of the Eli Bridge Co., of Jacksonville, Ill. It's the only firm in the country that makes Ferris wheels on an assembly line basis. In fact, it produces about 90% of all Ferris wheels sold in the United States. And Allis-Chalmers makes them go around.

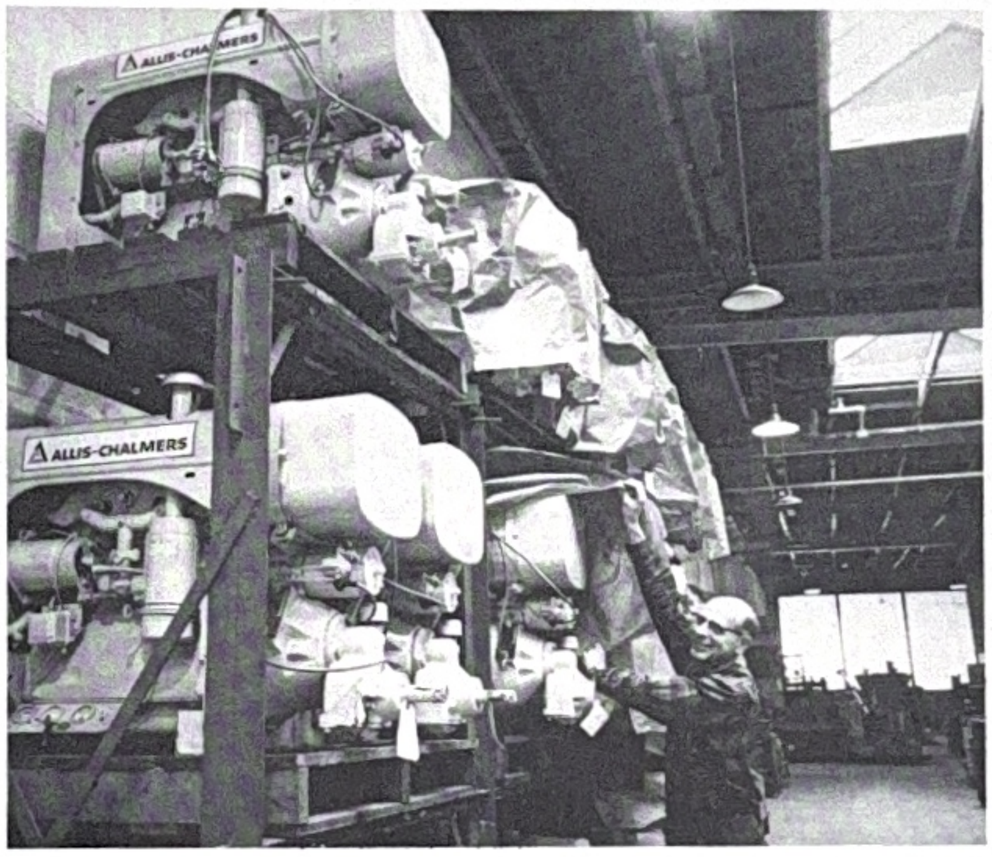
Seated at his large metal desk in his office at the firm's modern two-story brick plant in Jacksonville, Lee Sullivan Jr., the third generation of his family to head the company, told an interviewer:

"Just about every wheel this company has made, since 1900, is still in operation." The first wheel, in fact, is on permanent display in front of the plant. It was built in 1900, had four owners through the years, and has been reacquired by the company.

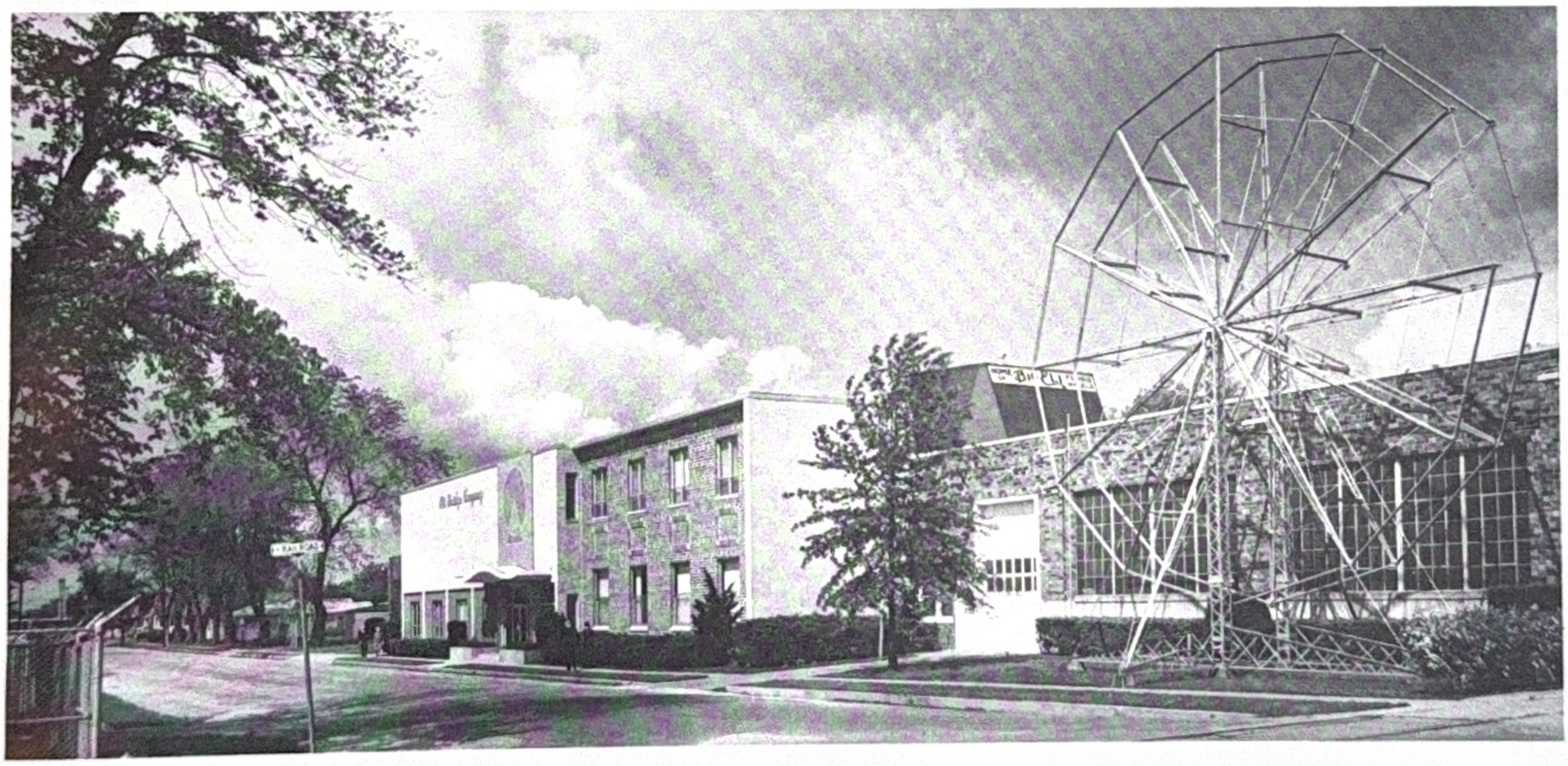
The Eli Bridge people are proud of their product—proud of its value to the happiness of children the world over, proud of its safe operation and durability.

The Russians don't really claim to have invented the Ferris wheel, but it is a matter of historical record that the first crude devices of this type were used at trade fairs in Russia between 1450 and 1500. These ride-wheels, only about 15 feet high, had but four seats and were powered by hand.

Little was done to improve these ride-wheels or "Katchelis," as the



Eli Bridge production manager Donald Littler looks over a stockpile of Allis-Chalmers engines—soon to be powering Ferris wheels. Below, the exterior of the Eli Bridge Co.



Hundreds of intricate steps are necessary in the construction of each Ferris wheel. At left, Gerald Brockhaus wires for bulb and neon electric lighting; at right, Fred Stewart finishes decoration of a seat.

The Gay Nineties and mustaches seemed to go hand in hand—at least for G. W. G. Ferris (above) and William Sullivan.

Russians called them, for several centuries.

Planners of the 1893 World's Columbian Exposition in Chicago felt their extravaganza needed an attraction similar to the Eiffel Tower, which had highlighted the Paris Exposition four years earlier. Eventually, an engineer with an impressive name, George Washington Gale Ferris, submitted a seemingly incredible plan for a gigantic wheel, one that would stand hundreds of feet high and carry thousands of people.

"Such a structure is an impossibility," the planners protested. "What do you want to do, commit mass murder? A wheel like that, with all those people? It would collapse and you'd have a catastrophe."

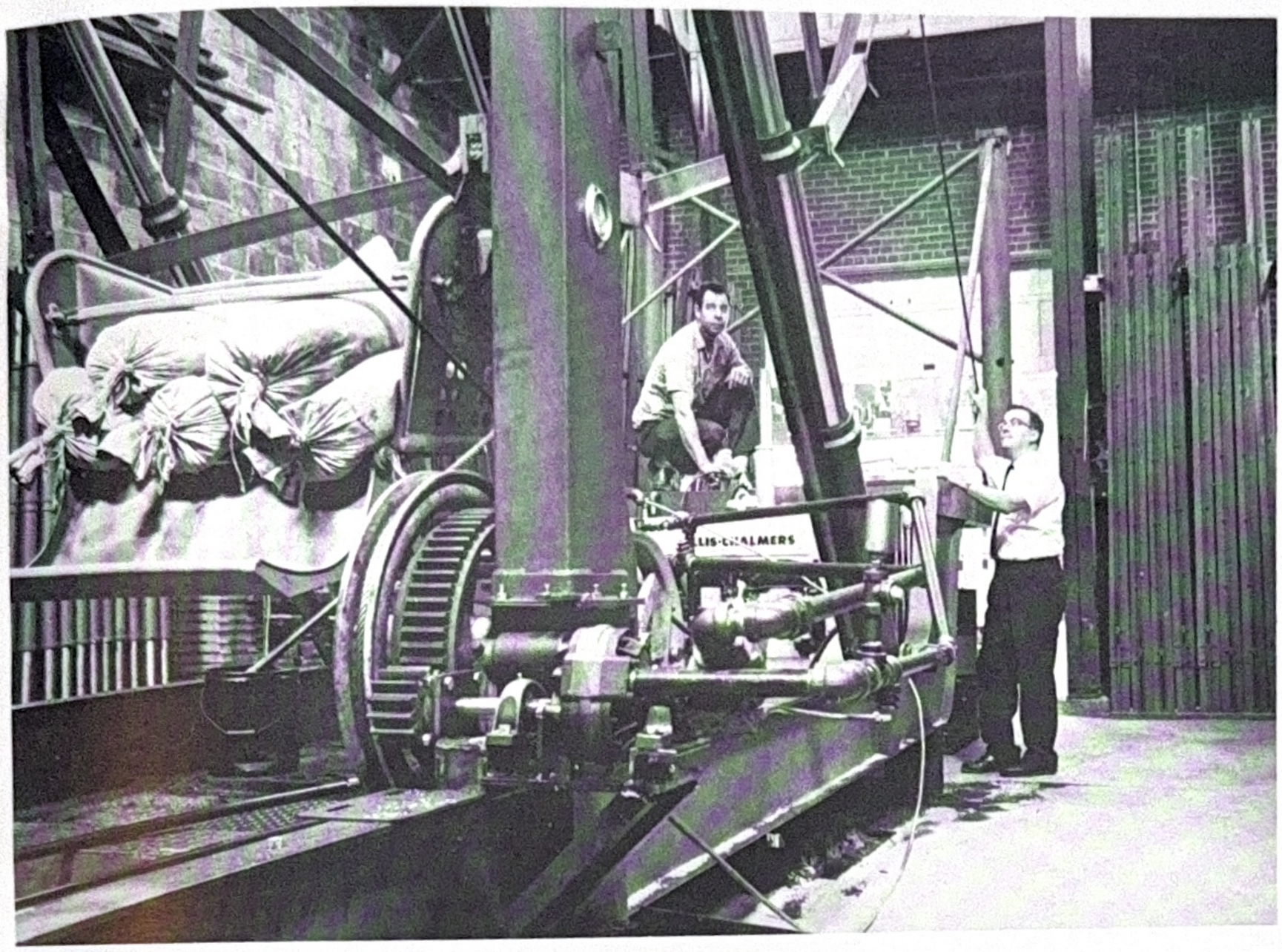
But Ferris and his idea prevailed, and the monstrous wheel became a reality. It was 264 feet high, weighed 4,200 tons, carried 36 passenger units, each as big as a railroad car, and thrilled a maximum of 2,160 riders on each ride.

Total cost of Ferris' wheel was $400,000. During its three-month run at the exposition, it grossed nearly double that, at 50 cents a ride. In 1893 that sum meant considerably more than it does today, about a half-day's pay for most men.

Neither the wheel nor Ferris, however, was destined to enjoy fame for long. Ferris was 37 when he died of typhoid fever in 1896. After the exposition ended, the big wheel could no longer be run profitably. Its owners broke it up in 1904 and sold its steel framework in small parcels.

During its short life, however, the gigantic wheel excited and inspired many men. One was William E. Sullivan, a bridge builder from Roodhouse, Illinois, a small town 65 miles north of St. Louis, Missouri. When Sullivan saw the popularity of the Ferris wheel, how it offered a wonderful landmark for the exposition and how its appeal encompassed all ages, he concluded that building smaller, portable wheels would turn a neat profit at fairs and carnivals all over the country.

Sullivan spent several years at his drawing boards, planning and replanning his wheel and trying to obtain financing for his project. The men he eventually persuaded to back him felt the Ferris wheel was an



Company engineer Bill Deem (right) and welding foreman Jackson Spradlin put a newly erected wheel through tests using sand bags for weights.

uncertain venture. They knew Sullivan was a capable builder of bridges, and reasoned that if his efforts with his riding wheel didn't pay off he could always return to that line. They insisted on the word "Bridge" in the name of the new company, instead of "Ferris Wheel." But why "Eli Bridge?" The phrase, "Get there, Eli," was a popular expression at the time, like "Oh, you kid," or "Twenty-three skiddoo." Some enterprising soul felt the words "Eli" and "Bridge" should be combined. Others agreed, and it became the name of the new firm.

In 1900, the Eli Bridge Company built and sold its first Ferris wheel. The company moved its plant from Roodhouse to Jacksonville, 24 miles north, in 1919.

Since that first model 67 years ago, Eli Bridge has built more than 1,200 Ferris wheels for customers throughout the world.

The company, which has 50 employes, builds and stocks three models ranging in price from $12,000 to $19,000. It does not build to specification, as do other Ferris wheel manufacturers.

In May, 1953, the firm began equipping its wheels with Allis-Chalmers B-125, 25.5-horsepower engines.

"I was at a fair over in Iowa during the summer the year before," explained Lee A. Sullivan Sr., 77, son of the founder and now chairman of the board. "I saw an Allis-Chalmers engine on display. I thought maybe I'd give them a try, because we weren't too happy with the model we had been using. Besides, I'd heard a lot about Allis-Chalmers and their farm machinery from neighbors of mine in Jacksonville."

Since Eli Bridge started buying Allis-Chalmers engines, it has switched from the B-125 to the more powerful G-138 model—a 38.8-horsepower, gasoline-fueled unit—built in the West Allis Plant. (Besides powering Ferris wheels, the engine is used in the construction industry to drive conveyors and pumps, in the oil industry to drive pipe line pumps and in agriculture to drive sugar cane harvesters.)

Sullivan Sr., who recently retired as president of the company (in favor of his son, Lee Jr.), wanted to retire completely but couldn't tear himself away.

"Yes, I'm here every day. Don't do much, though," he said with a chuckle. "Used to have to make all the decisions. Now, when somebody comes up with some question or other, I tell them, 'Ask Junior. It's his headache now.' He gives them the answers, just like I used to."

Back in 1907 Lee Sr. had aspirations of obtaining an engineering degree from the University of Illinois.

"I told this professor who was interviewing me for entrance into the school what type of work my father did, and about the business. He told me to forget about college and to go back and learn everything I could about the Eli Bridge Company. Told me, 'Who could ever take over a unique business like that if your dad ever got sick or died?' "

Eli Bridge believes in "giving our customers a quality product—safe, dependable and efficient," said Lee Jr. "Allis-Chalmers engines have continued, actually added to, this reputation we've striven so hard to maintain. Our customers have liked the Allis-Chalmers engines very much. They like the idea that if any-

thing does go wrong or if a replacement part is needed any place in the country, an Allis-Chalmers dealer is almost always nearby."

Lee Sr. and Jr. are tall, strong, good-looking men whom you might imagine on the set of a TV western. "And that's exactly where the other son is," Lee Sr. said. "My son William always had acting in his blood. Ever watch 'The Monroes?' He has the part of Major Mapoy. He dropped the first three letters of his name. Goes as Liam Sullivan."

Lee Jr. continued his career with the Eli Bridge Co. after college. While at the University of Illinois School of Engineering, he and another student, Bill Deem, became close friends. When Lee Jr. graduated, he offered Bill a job with his company.

"Who ever heard of an engineer going to work building Ferris wheels?" Deem said. "But I took him up on it, and now I can't think of any other type job that would be as rewarding for me." Deem has become the company's historian, in a sense, making the study and collection of Ferris wheel information an intense hobby.

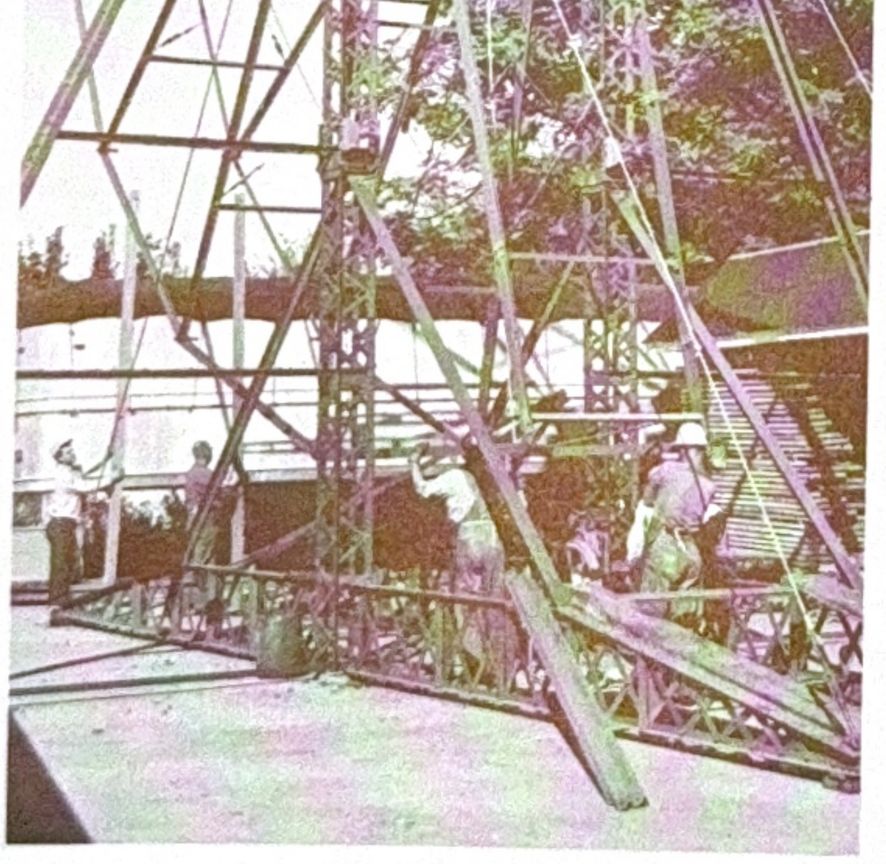
"For instance," he said, "the largest Ferris wheel in the world today is the Riesenrad in Vienna, Austria. It's 226 feet high. It was built in 1897, and has been in continuous operation since. Remember the movie, 'The Third Man?' A lot of the footage took place on the Riesenrad."

The company's Ferris wheels each have about 3,500 parts. Deem explained: "These are stockpiled until an order comes in. Then we assemble the entire unit, test it out under observation of a registered engineer—that's me—and make sure everything is perfect before we ship it. We're extremely safety conscious here. We've never had a wheel collapse on any of our customers yet, and don't ever intend to.

"Although Ferris wheels haven't changed much in more than half a century, we're working on improvements. Right now we've just about perfected a trailer-mounted unit, one that can be erected hydraulically, like a dump truck. It will make it a lot easier for operators to get the wheels up and take them down, in a shorter period of time."

Said Lee Sr.:

"I've been 60 years at this business. I love it. We may not be making tractors to harvest crops with, or rocketships that will go to the moon, but our products sure bring a lot of enjoyment and happiness to a lot of people. Especially the little people. And that's very important, too, don't you think?" ∎



Employes set up a Ferris wheel
in the plant's yard for further safety tests.

Lee Sullivan Senior and Junior with
a piece of framework from the original 1893 Ferris wheel.

The Ansley golf course site near Atlanta, Ga., looked like this in early 1966, with Allis-Chalmers equipment busily moving tons of earth from one point to another.

Considering the amount of construction and farm equipment Allis-Chalmers manufactures, changing the face of nature seems almost a by-product. But seldom is the magnitude of the change as apparent as at the Ansley Country Club near Atlanta, Georgia, where Allis-Chalmers earthmoving equipment transformed a rocky, hilly woodland into one of the most beautiful golf courses in the south.

Using such machinery to form fairways may seem like an off-beat use for the equipment, but not really. The number of new courses being built throughout the country today is almost startling.

In the boom years following the Korean War, the grand old game of golf not only boomed, it virtually exploded in popularity. In 1957 there were just three and a half million golfers in the United States who

Changing The Face of Nature

The transformation is complete. By January, 1967, the first of thousands of golfers were enjoying one of the finest courses in the south. This is the challenging 525-yard second hole.

"Building a golf course is no picnic," explained contractor Lam Dalon. "Having good equipment makes it a lot easier and it's more profitable, too."

played 15 or more rounds annually; this year there will be close to nine million. In 1957 there were but 5,358 golf courses in the country, today there are 8,672, with more being started virtually every day. According to Harry Eckhoff, executive director of the National Golf Foundation, forecasts indicate between three and four hundred courses will be opened each year during the next decade. "And with more and more people taking up the game, with more leisure time and higher incomes, that still won't be enough," Eckhoff said.

It was the space-people ratio, with the former constant and the latter ever increasing, which led the directors of the Ansley Golf Course to expand. Ansley had been a nine-hole layout since its inception in 1912. Its golf membership had grown to 450 in 1965.

The old Ansley club had become one of the more popular in the Atlanta area. Situated in the heart of a beautiful residential area and only ten minutes from downtown, the little layout featured two and three tees on each hole, two flags on each green and even two greens on one hole in an endeavor to offer the variety of an 18-hole course.

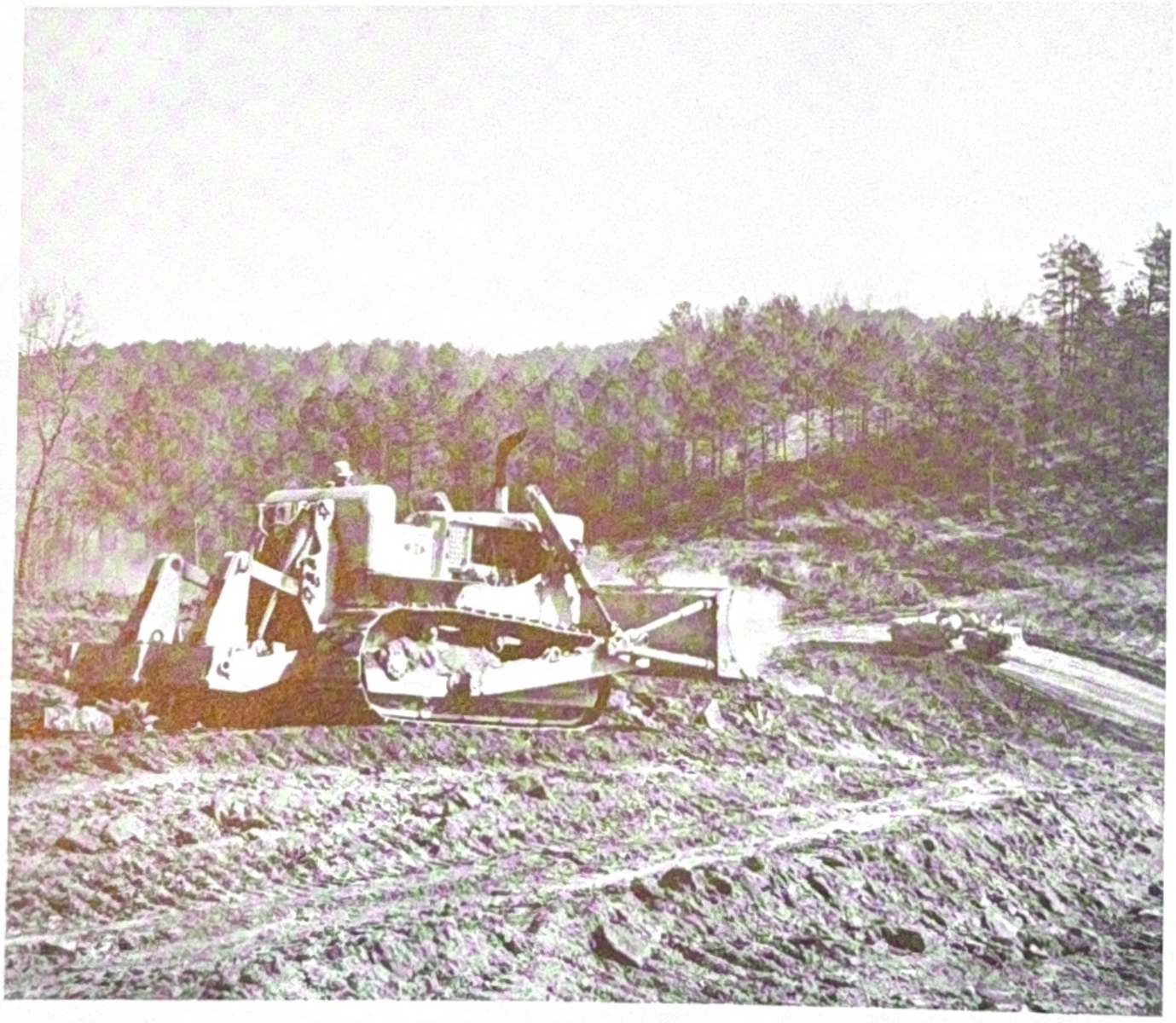
This was all well and good, but there were still too many golfers for the course, despite its innovations. Besides, the directors were faced with a long waiting list for membership, and wanted to expand.

Early in 1965 the directors approved the purchase of a 200-acre heavily wooded and hilly tract about 17 miles north of the city.

The low bid on the immense job of forming the new course was turned in by Lam Dalon, president of the Dalon Contracting Co. of Atlanta. All of Dalon's earthmoving equipment was from Allis-Chalmers.

This included six Model 260 tractor scrapers, two HD-16 crawler dozers, an HD-21 crawler with pushblock, an HD-21 crawler dozer with a 21R ripper, a 7G tractor shovel and an HD-11 dozer with a rake for clearing land, an HD-16 crawler towing a pull scraper to strip topsoil, and an HD-6B dozer.

Total value of Dalon's Allis-Chalmers machinery—$813,000. He was well equipped for the job, which entailed clearing 120 of the 200



Fourteen pieces of heavy Allis-Chalmers earthmoving equipment were used on the job. Here an HD-21 crawler dozer with a 21R ripper cuts shale.

Club pro David Cupit of the golfing Cupits gives a long time member some instruction.

acres, moving 550,000 cubic yards of dirt, removing several thousand trees, digging drainage ditches, preparing the sprinkler system, and contouring the greens.

Dalon began work on the site in January, 1966, about the same time record rains hit northern Georgia. The countryside was turned into a water and mud quagmire, which stopped nearly every other contractor in the area. Not Dalon. "With our Allis-Chalmers equipment operating efficiently, our operations continued, and we finished in mid-April, two weeks ahead of schedule," Dalon said.

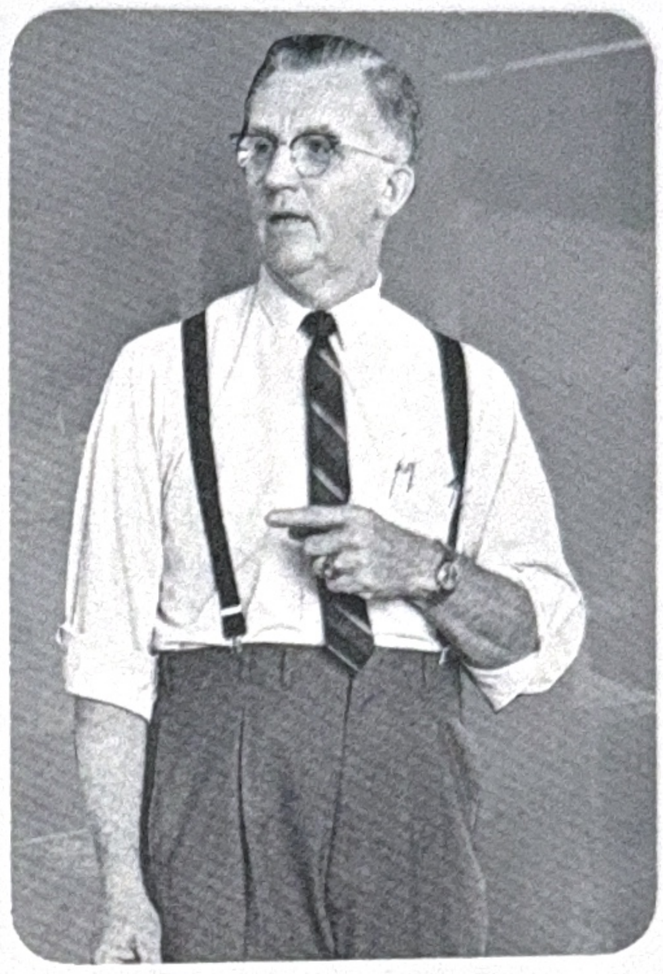
All of Dalon's equipment came from the Allis-Chalmers construction machinery dealer in nearby Doraville —Road Machinery, Inc. The dealership, formed only four years ago, is headed by Kurt New, who for many years was the Allis-Chalmers Construction Machinery Division regional manager for the area.

New's progress with his new dealership has been one of the leading Allis-Chalmers success stories. Road Machinery has ranked among the Company's top ten CMD dealerships in each of the past four years. New's background with Allis-Chalmers (1941–'63) has undoubtedly been a large factor. One of his positions at Allis-Chalmers was manager of dealer development for CMD.

At its busiest, the old nine-hole Ansley course crowded in between 3,500 and 5,000 rounds per year.

With the addition of the new eighteen-hole layout, the smaller course should total only about 1,700 rounds this year—a much more manageable figure. Meanwhile, the eighteen-hole course had 2,500 rounds during the first four months of 1967, and should total about 8,000 for the year. Membership at Ansley has gone up by several hundred, and the waiting list has disappeared.

Dalon, who is an avid golfer himself, naturally loves the layout. "This is one of the better courses in all Georgia," he said. "And we have some pretty good ones. They play the Masters right over in Augusta. But this new Ansley course is just great. Hard to believe it was just all woods last year. Now, if I could only get my game back down in the low 80's again, everything would be just swell." ■



"Allis-Chalmers equipment proved itself in those trying conditions at Ansley," said dealer Kurt New. "A lot of people heard about it, too."

An important function of earthmoving equipment was hollowing out areas for lakes, such as this one.

Once just a thick, uninhabited woodland, the new Ansley Country Club location is one of the most beautiful in Georgia.

THE USNS KANE GOES ON TRIAL

The throb of engines and the hum of generators pulsed through the vessel docked at the foot of old Winnisimmet Street in the Boston suburb of Chelsea, Mass.

Her exterior painted an almost antiseptic white, the ship seemed to loom larger than her actual size against the gray, low-overcast sky on that cold, rainy morning last April 18. It was 7:12 a.m. when the order boomed from the pilot house: "Cast off mooring lines!"

The United States Naval Ship Kane was under way, destined eventually to aid man in fathoming secrets of the sea.

With her, following specifications set by the Navy and its Oceanographic Office, sailed the ingenuity and workmanship of private industry. The Christy Corp. of Sturgeon Bay, Wis., built the Kane. The main propulsion unit built by Allis-Chalmers breathed life into her. Other firms supplied myriad items.

Officially, the voyage was logged as "preliminary acceptance trials." This meant that the Kane—285 feet long with a 48-foot beam—was to be put through her paces under the scrutiny of Navy inspectors during a 90-mile cruise through Boston harbor to the open sea and back.

The significance of the Kane is not easily understated. As the Navy's newest scientific and research vessel, she will be joining the nation's burgeoning program of oceanography. Oceanography? It encompasses all the sciences from acoustics to zoology as they apply to study of salt water bodies. In 1961 President Kennedy told Congress: "Knowledge of the oceans is more than a matter of curiosity. Our very survival may hinge upon it."

The oceanographer of the Navy, Rear Admiral Odale D. Waters, has pinpointed the situation this way: "We still know scarcely more about the seas that cover three-

The sea foams over the fantail of the USNS Kane during a full-speed run astern. At the left is an A-frame, at the right a crane — both of them used in lowering and raising scientific gear.

fourths of our own planet than we do about the Moon or Mars. This knowledge vacuum will continue until we bring more skill and imagination to the development of instruments to gather more information, more accurately and with more speed."

To help attain this aim, a new breed of ships—of which the Kane is one—had to be developed as stable laboratory platforms with highly sophisticated scientific gear and good maneuvering abilities.

On the raw, sub-40 degree day last April, the task at hand—in the words of R. C. Christianson, Christy Corp. executive vice president—was to demonstrate that the Kane was "ready for the service for which she was intended." That determination would be up to the officers from the Navy's Board of Inspection and Survey (INSURV). Besides them, the 80 persons aboard included:

A civilian crew selected by Christianson to run the ship; personnel from Christy, Allis-Chalmers and other companies which supplied equipment; representatives of other naval agencies; prospective crew members, data takers and a galley crew provided by a catering service.

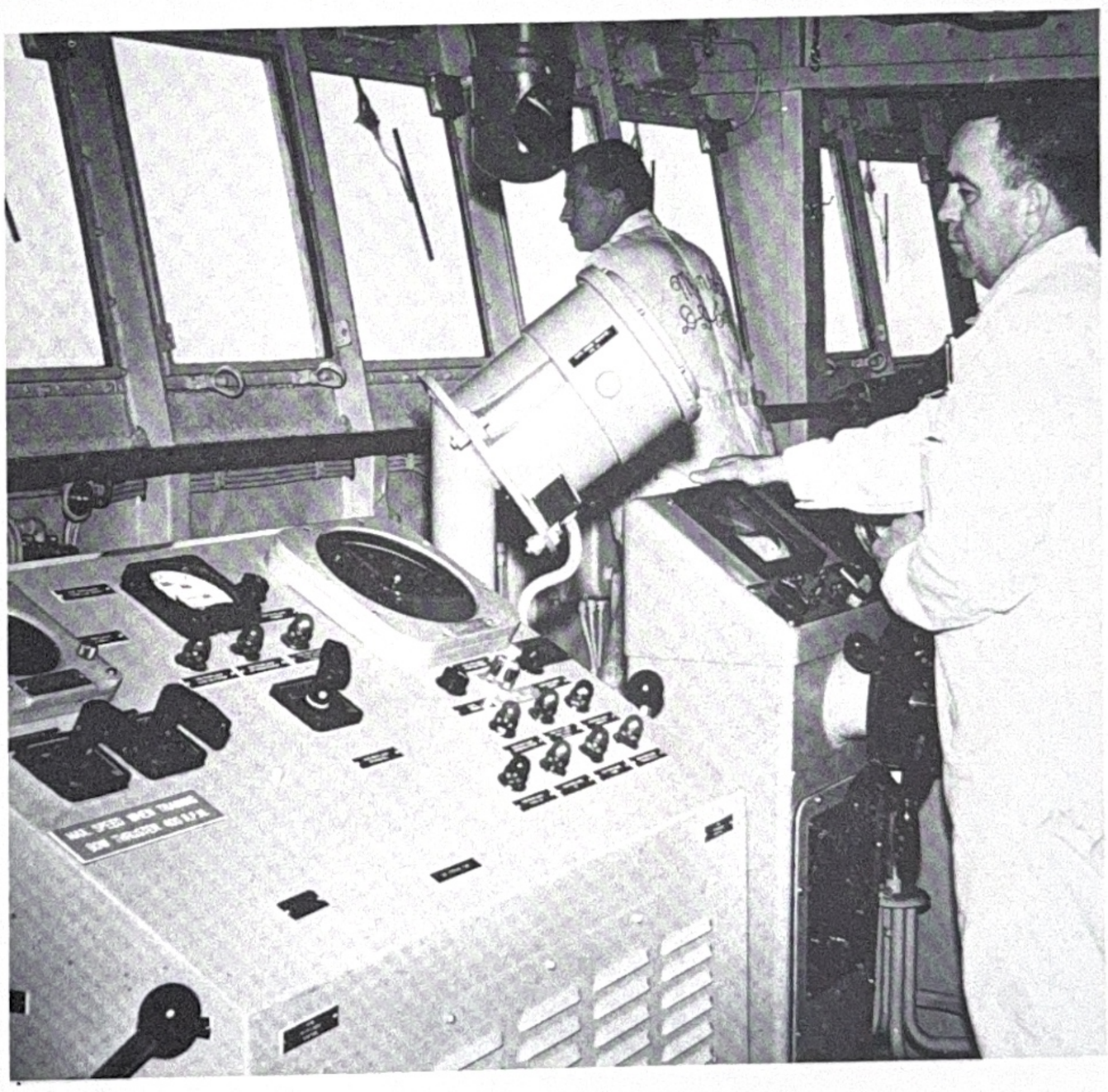
The order, "Commence full-power run," energized one of the day's most important tests. It was 9:15 a.m., and the ship was passing the red Boston Lightship 17 miles out from Chelsea. For the Kane, full-power yields 16 knots. She responded to the order like a frisky colt.

Tuned to a commercial station, the radio in the officers' wardroom appropriately blared rock 'n' roll music as the Kane charged up-down, up-down through waves churned by a 30-mile northeasterly wind. The all-out run, spiced by steering tests ("Hard over left," "Hard over right"), continued for two hours.

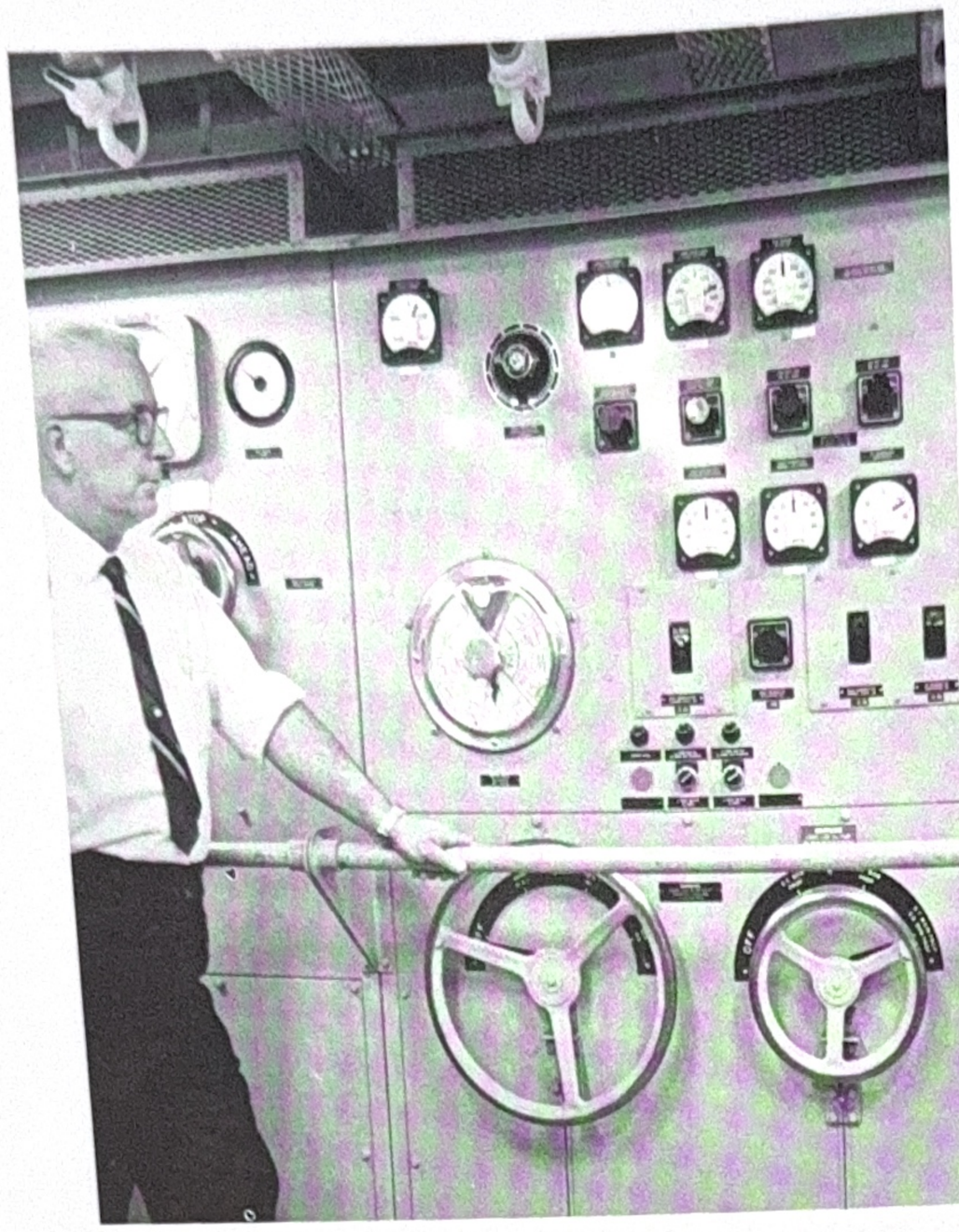
That exercise left some of those aboard with little appetite for the noon chicken dinner—but the Kane's taste for work was not dulled. Among her subsequent tests was proceeding full-speed astern, the salt spray sloshing over her low fantail.

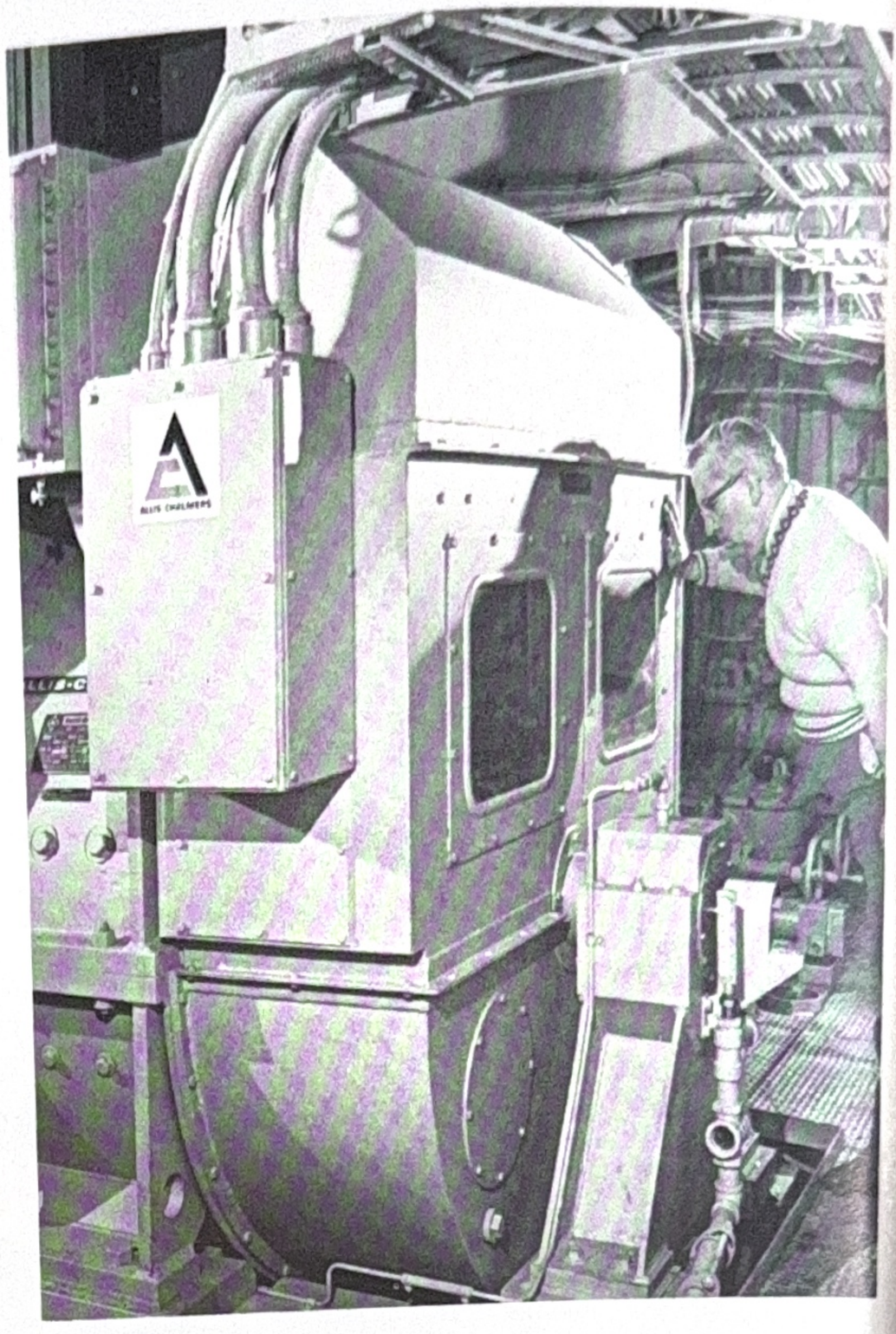
On the move with the Kane were Allis-Chalmers products. The Company made the 3,000-horsepower main propulsion motor which drove the propeller shaft, itself an Allis-

The stern is the "launching pad" from which instruments will probe the deep.



Helmsman Kenneth Watters watches the ship's course indicator, tilted up toward him. To his left is the pilot house propulsion control stand, built by Allis-Chalmers.





A control board below decks, a vital link in the Allis-Chalmers propulsion equipment, is monitored (above) by Field Superintendent Frank Thompson. At the right, Frank Nolan views one of the main generators.

Chalmers item. That motor ran on electricity from twin generators. Those units and the ship's propulsion control system also were built by Allis-Chalmers.

"The control system is the most modern in the fleet," said a vitally interested passenger, Frank M. Nolan, marine merchandising manager, General Products Division. "No other type of propulsion can equal electric with regard to fine control of propeller RPM and quick response to control changes."

Next in the test limelight was a 450-horsepower bow thruster motor, another Allis-Chalmers product. The thruster has a small propeller which is lowered through a hull opening and can be swiveled in all directions. "It gives the ship an additional propulsion unit and will help maintain a given position at sea when scientific work is under way," shipbuilder Christianson explained.

Throughout the day, while men in the pilot house kept checking navigation, maneuvering and propulsion situations, Navy inspectors were elsewhere viewing different aspects of the vessel. Their assignments ranged from inspecting such items as galley equipment, washing machines and medical supplies to electronic gear and facilities for scientists who eventually will man the floating laboratory.

The itinerary list included a survey center, a drafting room, a "wet" lab for work with water samples and biological specimens, chill and freeze rooms, a photo darkroom and devices for transmitting charts and maps.

Almost everywhere they went, the inspectors could see Allis-Chalmers trade marks. In the array were six smaller generators, 61 auxiliary motors, 21 pumps, 16 transformers and two motor-generator sets. The latter, shock-cord suspended to minimize vibration transmission, are for silent running when a scientific task requires ultra-quiet conditions.

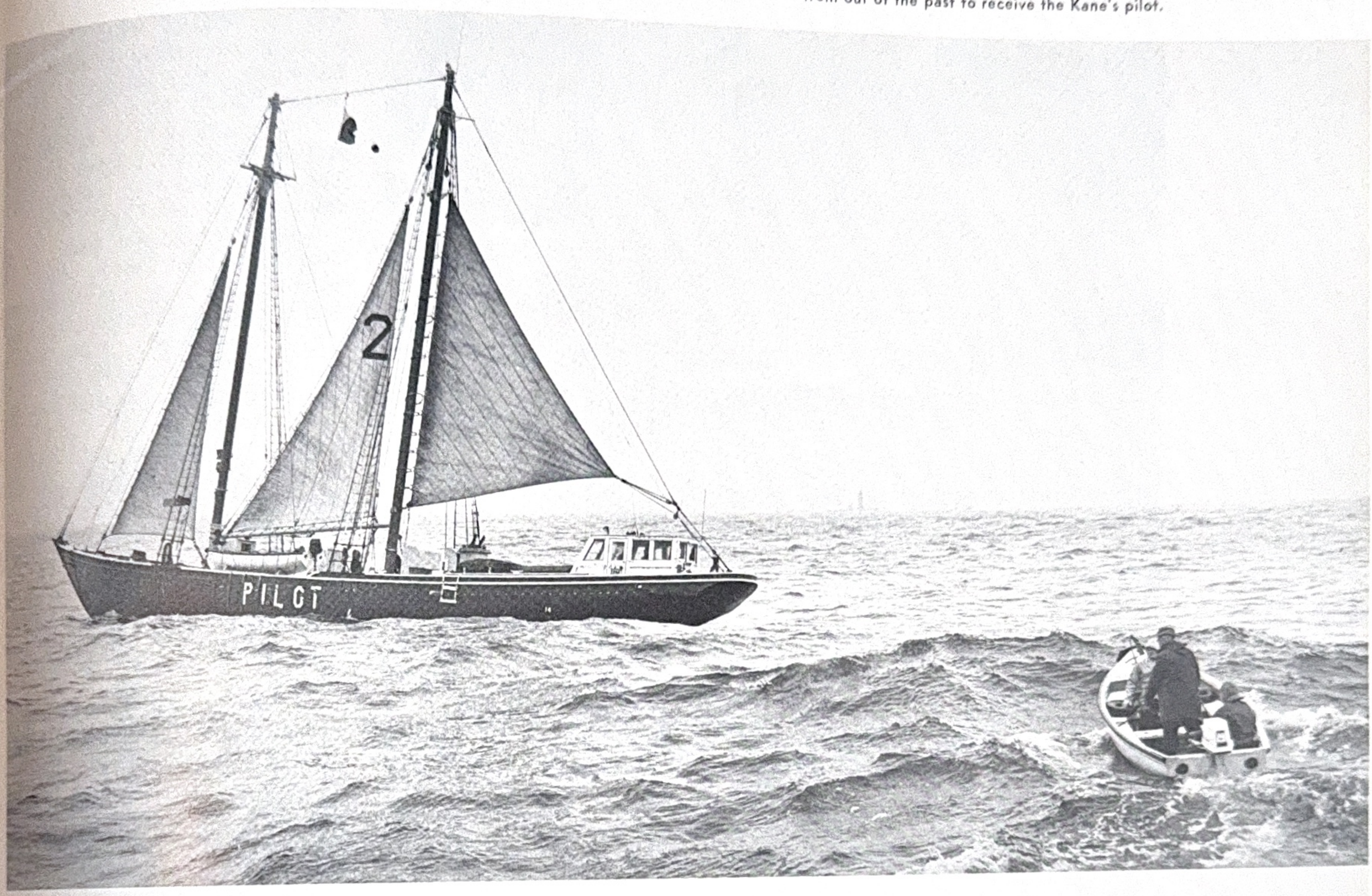
Electrical apparatus supplied by the Company will power instruments used in checking the earth's magnetic field, water temperatures, deep-water currents and sound velocity, besides normal on-board electrical devices. Big coring winches, holding more than 40,000 feet of wire cable used to lower sample-taking and photo equipment into the depths, are run by Allis-Chalmers motors.

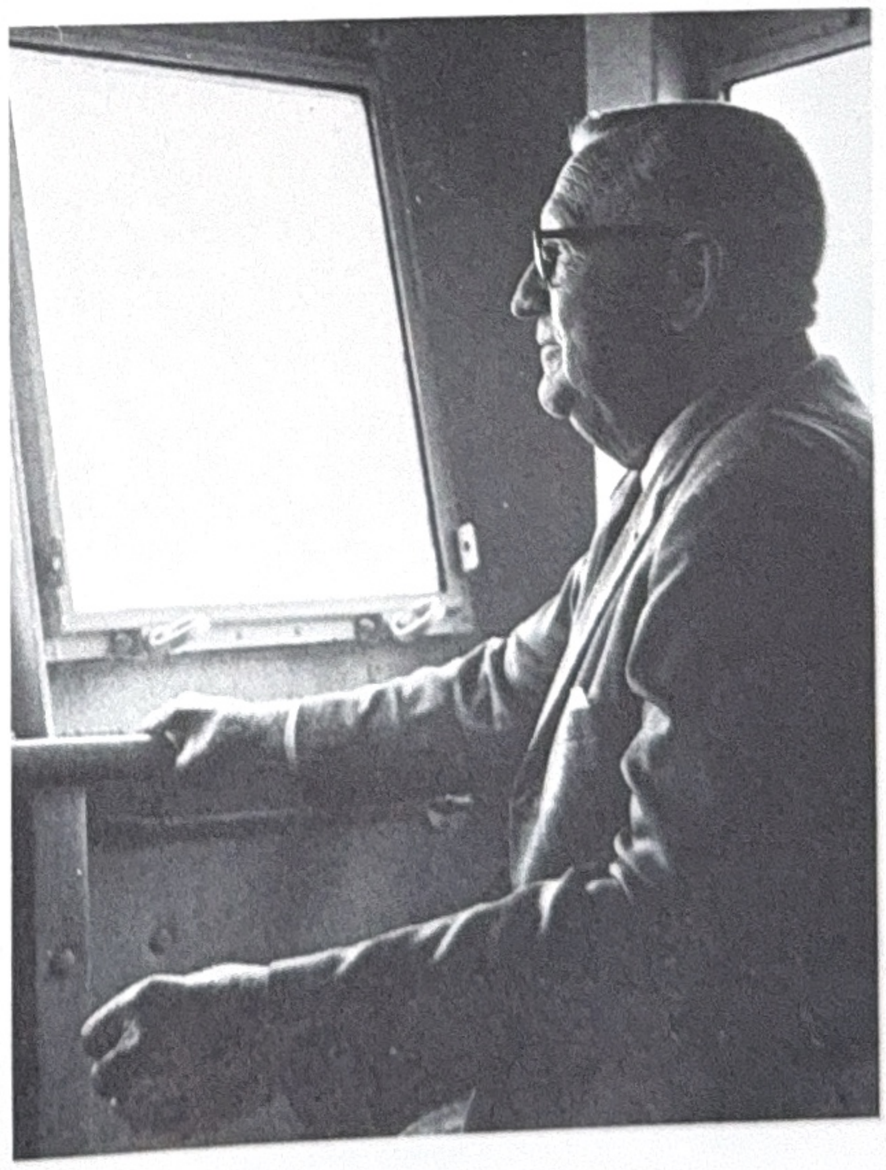
By late afternoon, with the inspectors' work just about done, the Kane was heading back to Chelsea and her berth at James S. Munro Drydock, Inc.

In the pilot house various principals had moments to chat. The ship's master for the day, 77-year-old Capt. William H. Knight of Wakefield, R. I., reflected on his 60-year sailing career and termed the trip "a very satisfactory cruise." The mate, former Navy Quartermaster Thomas A. Pardy of Quincy, Mass., described the Kane's performance as "outstanding from a navigation standpoint." Helmsman Kenneth Watters, Sturgeon Bay, said, "She's a beautiful ship to handle."

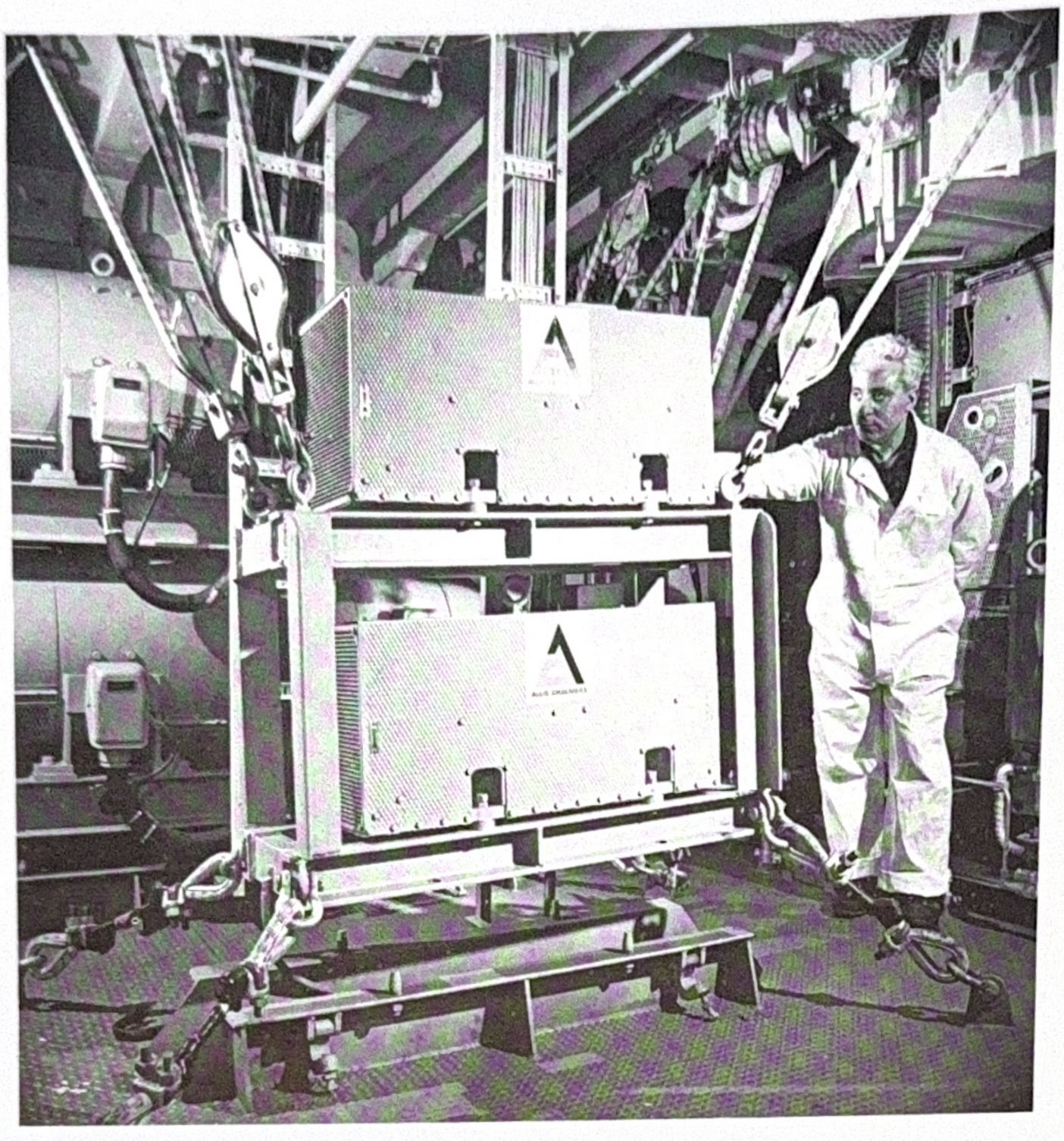
What really counted, of course,

Converted from a schooner-rigged fishing boat, a vintage 1926 vessel sails from out of the past to receive the Kane's pilot.





Mate Thomas Pardy (above) checks a navigation chart. Silhouetted in the light from pilot house windows is Capt. William Knight.



An Allis-Chalmers motor-generator set for silent running of the Kane interested Vincent Mazziotti of the trial crew.

Journey's end produced this chat. From the left are Rear Admiral H. L. Reiter Jr.; two Allis-Chalmers representatives, Frank Nolan and Manager of Sales Financing David Burr, and R. C. Christianson of the Christy Corp.

was the INSURV board's view. Its senior member, Rear Admiral H. L. Reiter Jr. of Washington, D. C., noted: "Mainly, we are to determine the ship's ability to do her mission and to detect any possible hazards. The critique tomorrow will highlight results of the inspection."

Meanwhile, harbor pilot J. B. Chambers Jr. of Boston called out orders as the Kane approached the dock: "Midships . . . steady . . . right easy . . . slow ahead . . . steady as you go . . . (to a tug alongside) shove up aft . . . all stop . . ." At 6:40 p.m. the Kane was moored.

The next morning, the INSURV critique in the red-curtained, paneled wardroom turned up a few "bugs" found by inspectors—"deficiencies," in Navy parlance. But there was praise, too. For instance, in describing the main propulsion plant, Navy Capt. T. J. Sullivan said: "It's fantastic, superb, has extremely great flexibility."

A capsule summation was given by Admiral Reiter: "In view of the rocking and rolling yesterday, the ship is well and strongly constructed. Most of the deficiencies are odds and ends. I think the ship will be a fine and comfortable one."

In May, the Navy accepted delivery of the Kane. Civil service employes of the Navy's Military Sea Transportation Service will comprise the ship's operating crew of 12 officers and 32 men. And there are accommodations for up to 34 scientists, to be provided by the Navy.

On the Kane's immediate horizon is a visit July 30–Aug. 6 at Expo 67 in Montreal where she will literally be on display before the world. Ultimately, another world—the one beneath the seas—will be on display for the Kane. ■

'AH' Man at the Big Board

William J. Stoutenburgh Jr. points to the last-price indicator for Allis-Chalmers common stock at his post in the New York Stock Exchange.

"HOW'S Allis-Chalmers?" On the crowded floor of the New York Stock Exchange, William J. Stoutenburgh Jr. of Brinton & Company answers that question many times each day. It is not an inquiry about the economic health of Allis-Chalmers, but simply a request for price information about its stock, which is identified by the ticker symbol "AH."

Stoutenburgh is one of some 350 members of the New York Stock Exchange, associated in about 90 separate units, who are known as specialists. Since these men normally do not deal with the public, their role in the market attracts scant attention from the bulk of America's investors. Yet their job is probably the most exacting and significant on the floor of the exchange, which was founded on May 17, 1792.

With the exchange observing its 175th anniversary, it is worth noting that Allis-Chalmers has been listed on the Big Board since Nov. 13, 1913 —and that the Brinton firm has been specializing in the stock since that date.

Stoutenburgh, a University of Notre Dame graduate and a former navigator-bombardier on an Air Force B-47, has been a specialist for four years and an exchange member for eight years. His floor partners in the firm are Theodore C. Romaine, Melvin M. Cunniff and Harold J. Lamm.

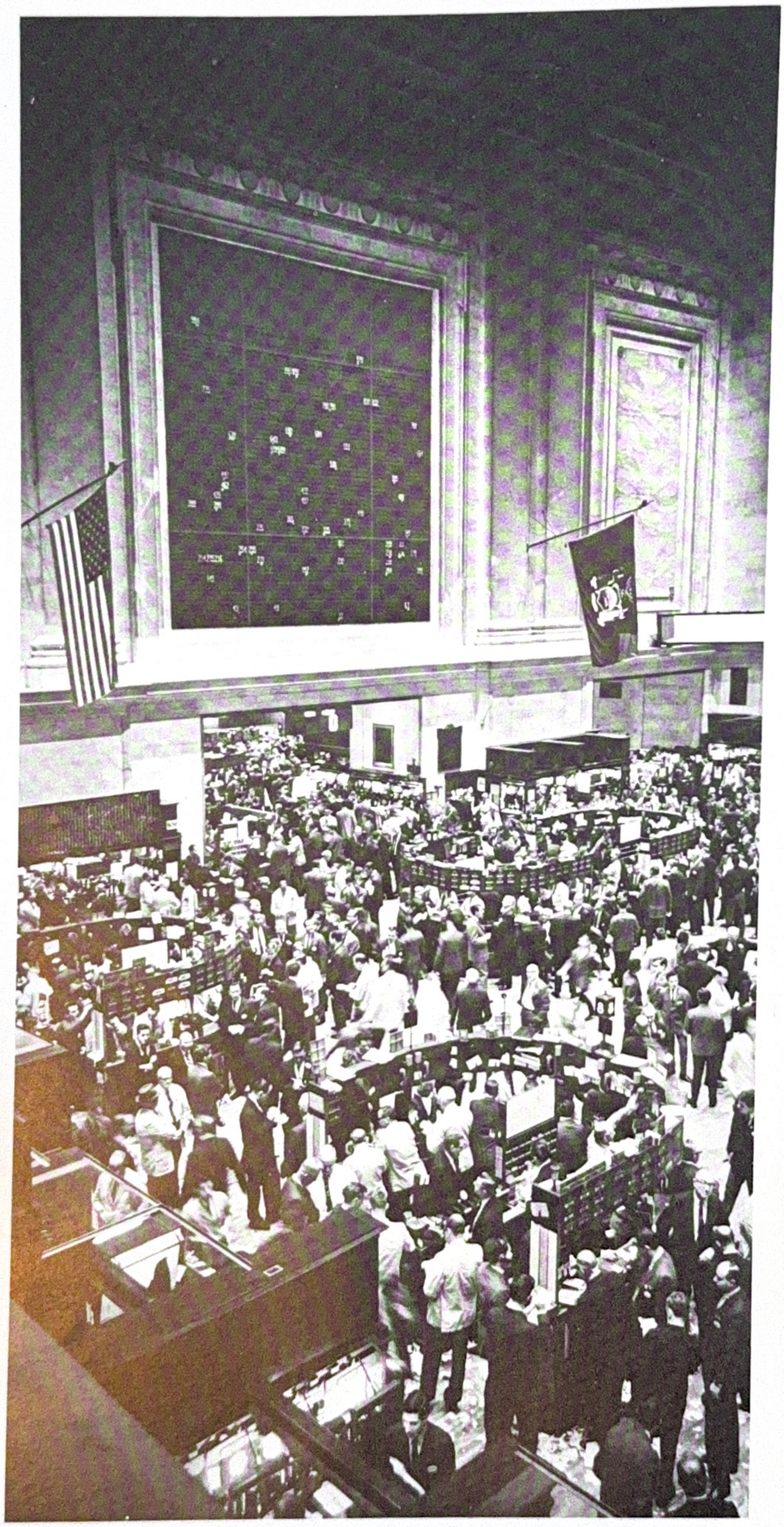
Unlike other brokers on the floor,

who move from phones to trading posts to phones, each specialist remains stationed at a particular location. For Stoutenburgh, this is Post 2, one of 18 horseshoe-shaped trading posts on the half-acre floor. Post 2 is the only place on the floor where Allis-Chalmers stock may be bought and sold.

Before becoming a specialist, a member must pass a formal test and serve for a designated period as an associate specialist with an established specialist group. In addition to meeting capital requirements, he must agree to conform to exchange rules and observe high standards of business ethics.

"I'm both a broker and a dealer," Stoutenburgh explained. "My responsibilities are to execute orders entrusted to me by brokers and to maintain, at least insofar as reasonably practicable, fair and orderly markets in the stocks assigned to me."

As a broker, he takes other mem-



The floor of the New York Stock Exchange bustles with activity as the central marketplace for the securities of some 1,290 companies.

bers' orders to buy or sell when the current market price is away from the price specified in the order. These orders are entered in his "book," a vertical loose-leaf ledger which is the specialist's most familiar tool.

For example, a broker receiving an order to buy Allis-Chalmers at $25 when the stock is selling at $26 probably does not have time to wait at Post 2 until the price declines a point. There may be no indication that the price will go down within minutes, hours or even days. So he leaves the order with Stoutenburgh, who enters it in the "AH" book to be executed when and if the price reaches 25.

The specialist is compensated for this service by part of the commission which the original broker receives from the customer. The investor pays nothing extra for having the stock exchange specialist execute his order.

The recurrent question "How's Allis-Chalmers?" simply means: At the moment what is the highest price anyone is willing to pay for this stock, and what is the lowest price at which anyone is willing to sell it?

Occasionally, however, there may be no public offers outstanding, or the book may show a wide spread between the highest bid and the lowest offer. Trading would then be severely handicapped were it not for the specialist and his second assigned function as a dealer. He minimizes the temporary gap between supply and demand by either buying stock for his own account at prices higher than anyone else is willing to pay at the time or selling stock at prices lower than anyone is willing to accept. In doing this he keeps price continuity more orderly and contributes to the liquidity of the market.

"Of course," Stoutenburgh said, "a specialist cannot stop a decline in a stock when there is selling pressure from the public, nor can he stop an advance in the face of public demand. Our mission is simply to keep the movement as fair and orderly as possible."

By no means does Brinton & Company participate in every transaction involving Allis-Chalmers and the other stocks in which the firm is registered. A broker with "AH" to sell may reach agreement at the trading post with another broker seeking to buy. In practice, specialists participate in about 16% of the total purchases and sales on the exchange.

The dealership function requires considerable capital and involves risk as a matter of routine. The minimum NYSE capital requirement for specialists is the equivalent of 2,000 shares in each stock in which the firm specializes.

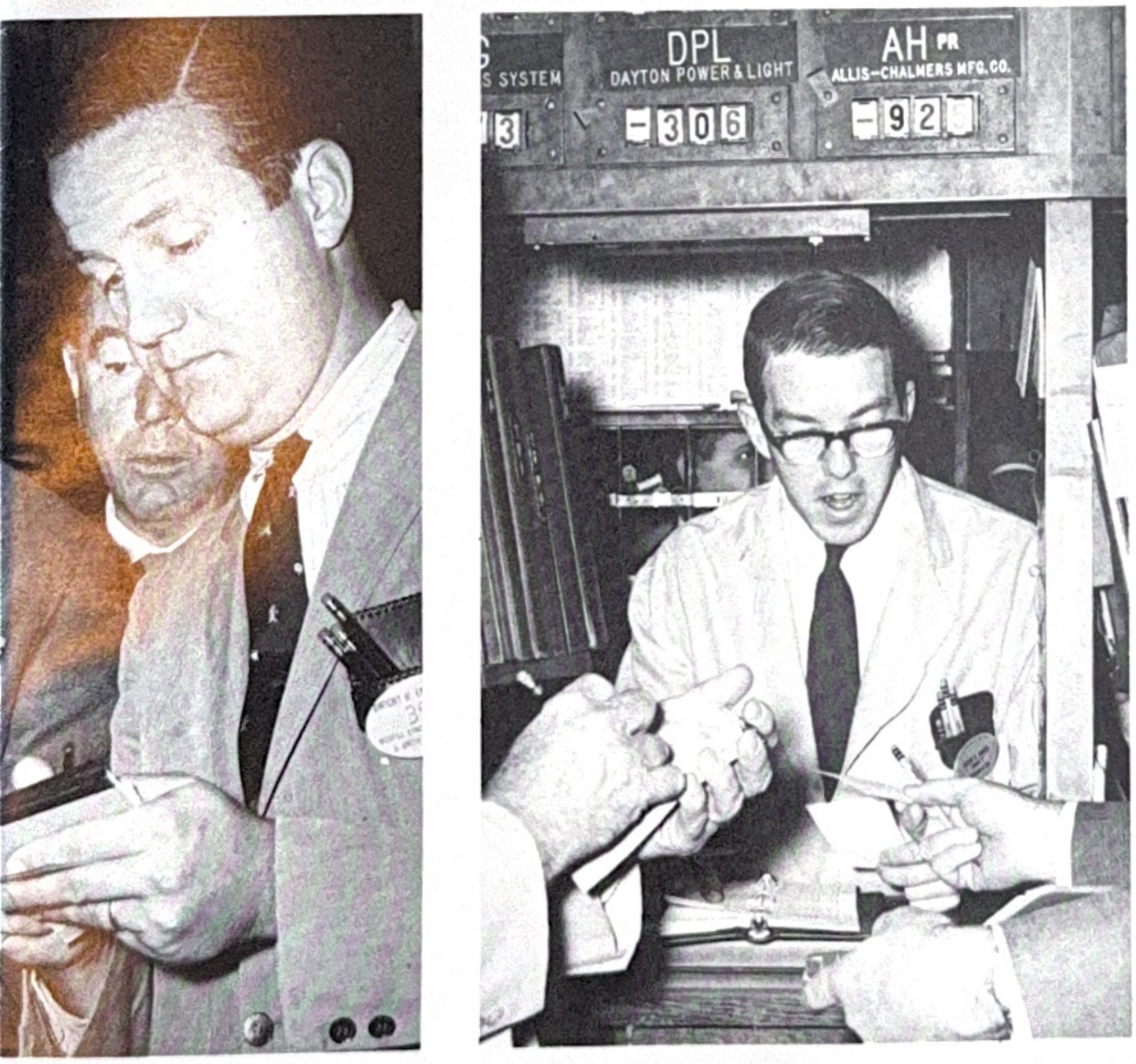
Brinton & Company handles 15 other stocks, including Southern Railway, Sunray DX Oil, Columbia Gas and Dayton Power & Light.

Stoutenburgh, 34, is well trained for his role in the nation's marketplace. He was a finance major at Notre Dame and received a master's degree in investments from the New York University Graduate School. With his wife and two children he resides in Short Hills, N. J.

The specialist system got its start on the floor by accident in 1875 when a broken leg forced broker James Boyd to conduct his business from a chair. Because of his immobility, Boyd limited his dealings to Western Union stock. When Boyd noted an improvement in his business, he continued specializing in Western Union even after his leg healed.

How effective is the NYSE specialist in maintaining a fair and orderly market? In 1966 more than 92% of the transactions made by specialists for their own accounts were considered "stabilizing"—purchases made at declining prices or sales made when prices were rising. As far as price continuity is concerned, a recent exchange study showed that 93.7% of the transactions studied were either unchanged from the previous price or no more than one-quarter of a point away.

For someone who owes his start to an accident, the New York Stock Exchange specialist has contributed a vital share to the Big Board's reputation for efficiency and integrity. ■



After Stoutenburgh (above left) executes an order with floor broker Dwight H. Emanuelson, the specialist's clerk, Peter D. Mauer, receives a report slip (at right).

John McKendry (left) receives his graduation certificate from Senior Vice President J. C. Clamp. At the right is Allen V. Gaulke, who directs and coordinates the General Management Course.

COMPANY'S COURSE FOR MANAGERS MARKS MILESTONE

The Man From Harvey: 'Mister One Thousand'

John R. McKendry is 49 years old. He's married, has five children and lives in Harvey, Ill. He also is a statistic—a very significant statistic in the Allis-Chalmers family.

McKendry, on May 12, became the 1,000th employe graduated from the Company's General Management Course since its inception in its present form four years ago. "Mister One Thousand" was one of 25 men in the 36th group which has completed the course. Since then, still another group has graduated.

McKendry is engine product manager at Harvey. He and his classmates—spanning a wide spectrum of jobs, plants and divisions of the Company—were nominated by their superiors. For them and others who have participated, the campus was a suburban Milwaukee motor inn.

What had the course meant to the

thousandth grad? His diploma still fresh in hand, McKendry stressed two points: "It stimulated my thinking, and it gave me a much better understanding of the Company as a whole and the people in it."

That's saying a lot for a school consisting of only five days, but they were five of the most intensive, thought-provoking days a student could experience—including McKendry's undergraduate education at St. Joseph's College in Philadelphia.

The concentrated setup of the Allis-Chalmers program was explained by Allen V. Gaulke, manager of Manpower Utilization Services in the Employe and Community Relations Division. Gaulke, who is the course director and coordinator, said:

"For each group there are two units of attendance, the first lasting three days and the second two days, scheduled about four weeks apart. The program in general management is concerned with the work of the professional manager and a broadening background in general business principles.

"The method of presentation requires participation by each individual. Since the participants in each group represent a wide variety of responsibilities, they can make valuable contributions toward a rewarding group experience.

"Participants spend from two to three hours daily in small groups discussing and developing conclusions to assigned case studies. These conclusions are presented in general group discussions. There also is a lecture devoted to the management principles involved in each of the case studies, which are actual experiences of various business firms."

Even though the students aren't home, there's homework to be done at night—assigned readings and case study preparation. And no telephone calls from the office are allowed to disturb the daytime sessions. Yet the atmosphere in the classroom—the Desert Room of the Sands Motor Inn—is informal. "We ask the fellows to wear sports shirts and slacks," Gaulke said. "We want them to be comfortable."

The aim of the course, simply put, is to improve the participants' effectiveness as managers. This involves development of themselves as individuals and development of insight into the needs and objectives of the many-individualed entity which is the Company. From these stem the elements of leadership, communicating, planning, organizing, decision-making, motivating and measuring.

A text used in the program notes that the modern-day manager "sharpens his awareness of his own trusteeship for the people serving under his jurisdiction;" he's not a hard-knuckled, dictatorial "boss." Allis-Chalmers, Gaulke said, expects its managers to:

- Keep in close contact with—and make use of—the ideas of employes.
- Obtain sincere, voluntary acceptance of work assignments, responsibility relationships and accountability from individuals.
- Create and maintain a friendly, cooperative, dynamic and productive working climate.
- Encourage individual self-development.

That's just the human relationship aspect of being a manager. Quite obviously, there are many others. As a result of the General Management Course, John McKendry has a much broader outlook on his duties as manager in charge of all engine product sales activities.

"The course made me stop and think about my every day activities," said McKendry, a native of Philadelphia who joined the Company in 1951 as a salesman and subsequently served as engine sales manager for the Toronto, Columbus (Ohio) and Philadelphia districts. "There are many things in our lives and jobs that we do out of habit. The course challenged me to recognize better techniques of managing my work."

Another facet of the program which impressed McKendry was the fact that, although his group was the 36th, "the course structure has maintained vitality and the faculty members have maintained their enthusiasm in providing instruction." (The faculty included Allis-Chalmers personnel and a University of Illinois professor.)

In a way, although they may not realize it, the men taking the course are teachers, too. "Because the class consisted of a deliberate mixture of people from throughout Allis-Chalmers," McKendry explained, "my contacts with them provided me with much beneficial information."

Such cross-fertilization of ideas is evident from the roster of McKendry's classmates. It reflects areas like service, employe and community relations, accounting, regional sales, quality assurance, systems and procedures analysis, engineering, general foreman, marketing services, finance, research, project managing, promotion services, quality control and education services. As a matter of fact, 47 different locations in the United States and Canada, including branch houses and sales offices, have been represented in the course's four-year history.

Next fall, more groups will be enrolled in the General Management Course. Those men, the people whom they supervise and Allis-Chalmers should be the better for it. ■

SCOPE

LINDA KAMES
Milwaukee, Wis.

RAYMOND FORD
Independence, Mo.

WILLIAM FARNETH
Pittsburgh, Pa.

AUGUST VON BEHREN
Springfield, Ill.

LESLIE ANNE ROONEY
Tinley Park, Ill.

ROBERT BARTELT
Greendale, Wis.

GREGORY MERCIER
Prairie View, Ill.

SYLVIA WALBERG
Waukesha, Wis.

MONTE DEL MONTE
Brookfield, Wis.

LINDA LORENZ
Oconomowoc, Wis.

1967 Scholarship Winners

During the past 17 years, nearly 200 deserving sons and daughters of Allis-Chalmers employes have benefitted from the Company's Scholarship Program. The ten young people on this page each received $600 awards as the 1967 winners.