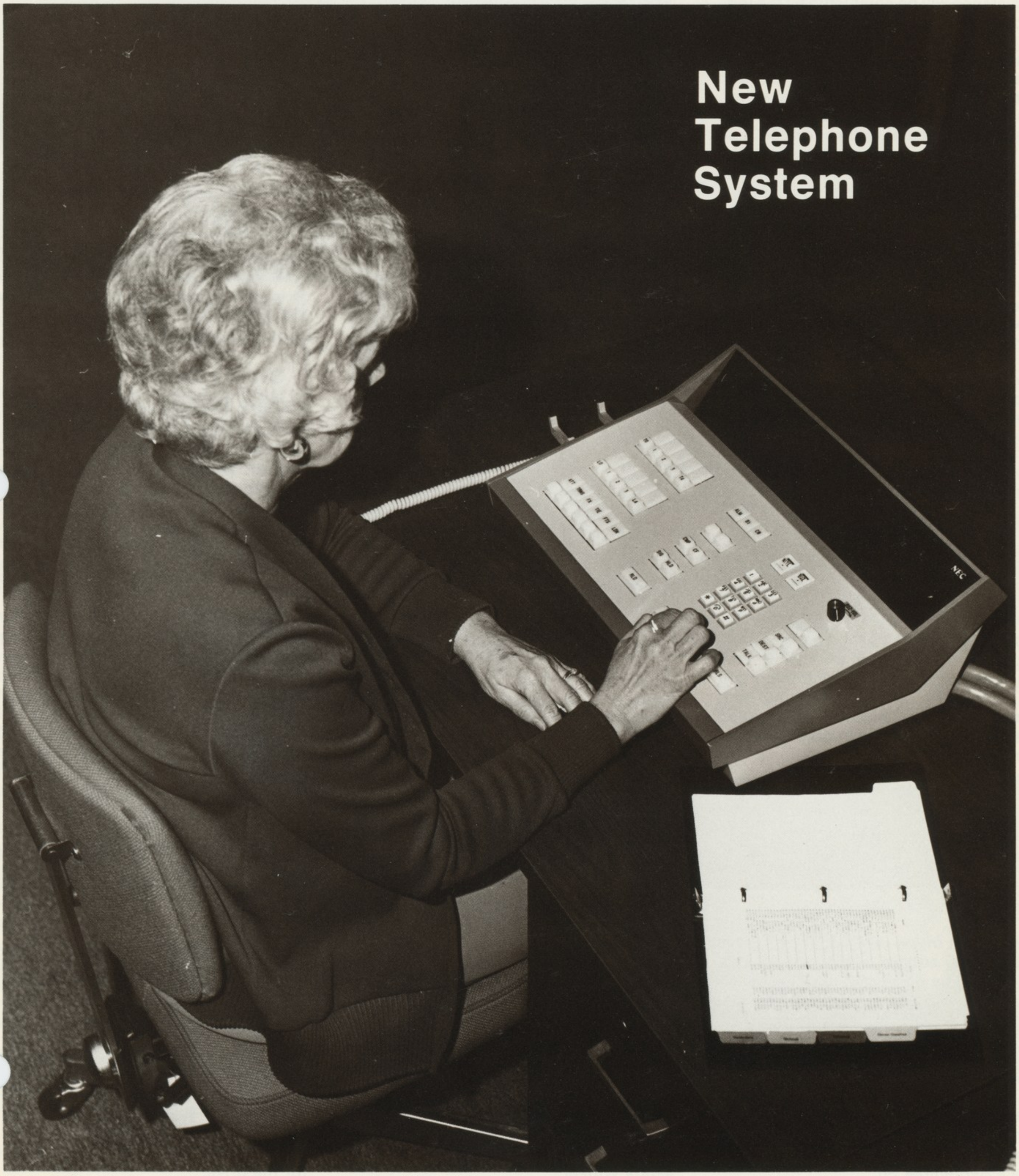
MARTIN MARIETTA
news
DENVER DIVISION

NUMBER 14/1977

New Telephone System



New telephone system in operation October 17

A Centrex telephone system, the latest in telephone communication providing a variety of time-saving features, will be put into operation at the division October 17.

Most calls formerly requiring operator assistance will be completed by the individual caller with this new system.

The prefix on the division's telephone system will change from 979 to 973, with the main number 973-3000. However, each telephone will have its own number. Instead of calling 973-3000 and asking for a number, an outside caller can dial each telephone direct. In effect, Centrex makes each division telephone a private line.

"Because of this direct inward dialing, it is important that your regular callers have your new number. Mailing cards are available," Martin Bowland, who has been handling the change for the division, said.

Long distance calls will continue to be placed through attendants via Marcomnet system to maintain effective cost controls on these calls.

New telephone directories will be distributed October 13 and 14.

"We urge employees to check every number called because we have changed about 70 percent of the division numbers," Bowland said.

"We also urge everyone to read the new instructions carefully. We have had training programs on use of the new system, but the instructions are also important as reminders of what was learned. Employees who did not attend a session are asked to call telecommunications to arrange for a briefing."

Mountain Bell and division personnel will begin the switch to the new system at 6 pm Friday, October 14. Only emergency calls will be processed during the switchover so that the system may be tested thoroughly before it goes into full operation at 7 am Monday, October 17.

Installation of the new system will save about 1200 square feet of space. This space will be converted to office use.

Marie Carothers, chief operator, and her assistant Mary Horning are shown in the new switchboard room with the smaller, better performing equipment that is part of the new Centrex system.

Employees honored for performance

Seventy-one employees were honored recently for "sustained outstanding performance in the conduct of their jobs" at the Denver division.

Each honored employee was presented a plaque at special recognition dinners held in the executive dining room.

Recognized were:

T. J. Allan. T. L. Andrews, E. F. Barnes, R. A. Barnhart, J. D. Bauer, J. A. Beacon, F. B. Bellusci, H. C. Burgan, R. E. Ciepiela, E. H. Cook, D. J. Cornell, K. B. Davis, P. A. DeMartine, G. B. Dion, C. W. Duclon,

R. M. Edwards, H. M. Elliott, W. E. Fields, G. R. Floyd, W. T. Gansert, H. L. Gariety, R. A. Glover, I. J. Guire, V. E. Hall, A. L. Harberg, J. P. Hardy, F. J. Hart, L. C. Hilton, B. M. Imber, V. D. Jaramillo, T. W. Johancen, D. S. Jones, P. J. Jones, R. G. Jones, D. L. Jussel,

E. M. Lapaz, H. F. Lovisone, C. J. Kukura, G. B. Macaulay, L. G. Major, C. D. Mark, B. L. Marlow, W. L. Martinez, J. W. McAnally, R. L. McCord, B. H. Mineman, H. C. Miller, W. O. Oliver, R. C. Parker, D. H. Parsons, Zerl Perdue, T. J. Perry, D. J. Petersen, J. H. Pond,

D. G. Robertson, J. B. Sanderson, S. V. Sawicki, J. D. Seal, F. G. Sholes , P. C. Shuey, W. L. Simonini, R. L. Stewart, J. A. Stone, J. D. Taliaferro, T. L. Tedrow, Merriam Trube, W. F. VanDyke, V. V. Vlcek, R. D. Westervelt, H. D. Wilkening, and Janna Winkel.

Dividend paid

Martin Marietta Corporation paid a quarterly cash dividend of 37½ cents per share on the Corporation's common stock September 30.

On the cover

Mary Horning, assistant chief operator, tests the division's new switchboard equipment that is part of the Centrex system. Only slightly larger than equipment on some secretaries' desks, the new console replaces the much larger and more complex switchboard — and performs more functions.

United Way drive begins in division

The division's participation in the Mile High United Way campaign will continue through Friday, October 14. Goal of the campaign is 100 percent employee enrollment in the payroll deduction plan.

As this year's campaign began September 26, 91 percent of the division's employees were contributing to the United Way.

A second, and perhaps more difficult goal, according to R. E. Weber, director of professional and industrial relations, will be to increase per capita contributions by 10 percent, to $43 per employee.

"Achieving these dual goals will greatly assist the United Way and its 69 agencies in providing the much needed help in the community," Weber said.

Robert Garcia is the division coordinator for the drive.

Know your Congress

This is the first in a series of articles to acquaint employees with members of Congress who represent them and to let the legislators express their views on key issues. From time to time, we also will talk about legislative issues that affect Martin Marietta. Employees are urged to write their legislators and to express agreement or disagreement with the stands the lawmakers are taking.

Senator Floyd Haskell

Floyd K. Haskell was elected a U.S. Senator in 1972, the first Democrat elected to the U.S. Senate from Colorado since 1956. He had served in the Colorado state legislature as a republican, but changed parties in 1970 as a protest to war and economic policies.

Senator Haskell serves on the Senate finance committee, where he chairs the subcommittee on administration of the internal revenue code. He also is a member of the energy and natural resources committee, serving as chairman of the subcommittee on energy production and supply.

The Senator was born in Morristown, N.J. He graduated from Harvard College in 1937 and earned his law degree in 1941 from the same school. He practiced law in New York before enlisting in the U.S. Army. He became an intelligence officer with the rank of major. He served in the Pacific theater of operations and was among the first Americans to enter Nagasaki after the atomic bomb was dropped there.

After World War II, Senator Haskell moved to Denver and entered private legal practice.

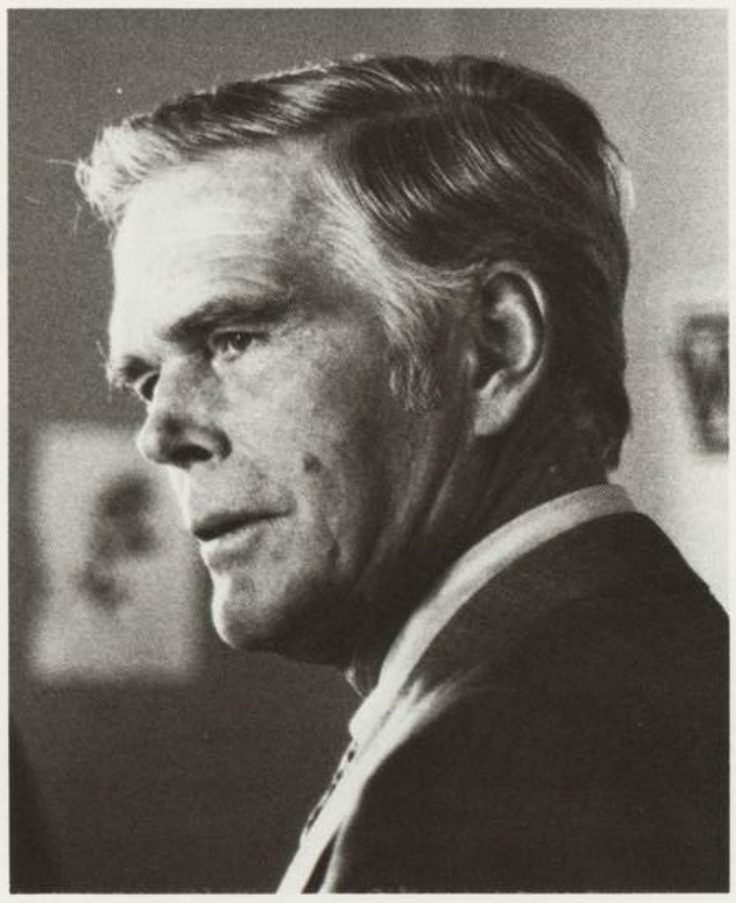
Here is a statement he furnished *Martin Marietta News:*

'Why can't we _____?'
by Floyd Haskell
United States Senator

"If we can put a man on the moon, why can't we_____ ?" Americans have been filling in that blank in a thousand different ways since the nation's stunning successes in space.

For many, the cliche/question serves mainly as a criticism of the cost of the U.S. space program — and the corresponding belief that it has produced little of significance to their daily lives. For others, though, it expresses genuine wonder that any problems could escape solution in a country with that kind of technology at its disposal.

The latest reincarnation of the question wonders how we can put a man on the moon yet fail to solve our energy problems. Looking at the role NASA and the aerospace industry are playing in energy research and development, I'm convinced that if we solve our energy problems, it may be largely *because* of the technological ability which put a man on the moon.



NASA's Office of Energy Programs, which began operations in 1974 with a $4 million budget is now at work on $100 million worth of energy research projects, mostly for the Energy Research and Development Administration and the Interior Department. NASA has picked out 14 areas in which aeronautics and space technology and management ability have the most to contribute. These range all the way from advanced coal energy extraction to energy storage systems.

In my view, the two most exciting and immediately promising are solar heating and cooling and wind power generation.

For example, NASA has gone to the aerospace industry for a contractor to build the largest windmill ever built. It will use blades 300 feet long to drive an electrical generating system with a capacity of 2500 kilowatts. The wind turbine will be designed for operation in areas with a mean wind speed of around 14 miles per hour — fairly common in this country. The site for the demonstration hasn't been chosen, but it will be near a conventional utility plant so the electricity generated can be plugged into the power system.

ERDA is also working on smaller wind turbines adequate for individual rural homes or farms.

NASA, through its Marshall Space Flight Center in Huntsville, Alabama, is also at work on projects to develop a wide range of solar heating and cooling units. By the end of the next fiscal year there will be 67 test sites at which the hardware developed by 36 contractors will be evaluated. To analyze and compare the various designs, NASA has designed a computerized instrumentation system for ERDA. The system will collect data at each site, then transmit it by telephone to a data center in Huntsville.

This kind of research will be particularly critical during the next few years. The Senate Energy Committee has accepted my proposal to give homeowners low-interest, long-term federal loans for solar heating and cooling equipment. Loans would be available for the full cost of solar systems, up to $8000 per unit. Such a program could provide the demand for solar units which is now lacking.

Even though the solar industry is in its infancy, good, efficient solar systems are available now. Research and development of the kind NASA is doing — as well as the work which will go on at the Solar Energy Research Institute at Golden — promise vastly improved systems before long.

It's obvious by now that our energy future lies in development of renewable energy sources — wind and solar among them. Reviewing the work NASA is doing for ERDA in this area has convinced me space technology has much to contribute to that future. These so-called spinoffs from our space program are paying dividends and will continue to do so.

The U.S. space program is not simply an esoteric toy; NASA's use of space technology in the energy field is proof of that.

Division president named for Cement

Martin Marietta Cement has announced the appointment of John O. Hobbs as president of its Eastern division with headquarters in Baltimore. He succeeds Kenneth D. Simmons who resigned.

MARTIN MARIETTA NEWS
Published by Public Relations
MARTIN MARIETTA AEROSPACE
Call Ext. 5364 with suggestions or information for articles.
Denver Division
P.O. Box 179
Denver, Colorado 80201
October 1977

Al Acosta adjusts the intercom on a SCAPE suit. He has been with Martin Marietta since 1960 and worked on the first SCAPE suit used at Vandenberg. The suit is worn by employees during propellant handling operations.

Ed Noragong, an electronic technician, goes through one step in refurbishing an umbilical. He has been with Martin Marietta since 1962 and is president of UAW 617, the bargaining unit representing 96 flight operations employees.

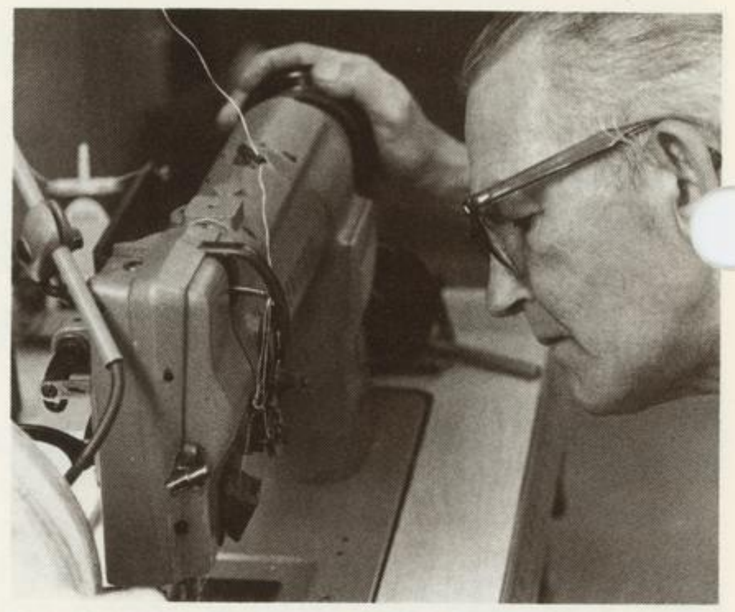
At Vandenberg

CMA important to Vandenberg test operations

The contractor maintenance area (CMA), a large repair and test facility, is an important part of the division's Vandenberg flight operations at Vandenberg AFB in California.

As a function of the test operations department, CMA equipment and people perform a variety of tasks, including cable testing; self-contained atmospheric protective ensemble (SCAPE) suit maintenance and repair; calibration, modification, maintenance, and repair of test tools; pressure testing; electrical and electronic equipment checkout and repair; valve repair; mechanical and ordinance checkout and repair.

The photos show four employees in typical work situations at the facility. Howard Ross is chief of the contractor maintenance area. He has been with Martin Marietta 20 years and in his present position since 1961.



Ford Cassel uses a high-speed, factory-type sewing machine to replace worn SCAPE suit zippers as part of the maintenance program for the ensemble. Cassel, a mechanical technician, has been at Vandenberg since 1959.

Loren Kerr is troubleshooting one of the many ordnance test sets maintained by CMA personne Kerr is an electronic technician who joined Mar Marietta in January 1976 after 23 years in rocketry.

Employee earns PhD, research grant

Earning a PhD is tough under any circumstances, but to go from freshman to PhD in three years while working fulltime has to be tougher.

"There were many 16 to 18 hour days and seven-day weeks during those three years," John T. Polhemus, a division senior staff engineer, commented as he discussed his achievement.

Along with the PhD came a grant from the National Geographic Society to conduct a zoogeographical research project in the southern hemisphere. (Zoogeography is the science dealing with the distribution of animals.)

Polhemus, who earned a BS in electrical engineering from Iowa State University in 1956, changed career fields for his PhD. That's why he had to start as a freshman when he began his work at the University of Colorado toward his doctorate in biology.

"Going from a freshman to PhD in three years isn't as sensational as it may sound," he said. "I have done intensive biological research since 1960 and have published 40 papers relating in some way to biology. As a result of their evaluation of this work, my graduate committee in effect awarded me credit for a bachelor's and master's degree as well as some credit toward the doctorate.

"But I still had to pass some very tough exams and complete my dissertation."

The grant for the zoogeographical research is a continuation of the work reported in the dissertation. Polhemus will use vacation time for the December-January trip to South Africa, Australia, Tasmania, Norfolk Island, New Zealand, Tahiti, and Samoa. It's there he will attempt to prove transantarctic relationship of animals of those areas through the study of insects that have been around about 200 million years.

Dr. Polhemus

The insects — shore bugs — of the family Saldidae are believed to have originated on Gondwanaland, the large land mass that split to form the continents in the southern hemisphere.

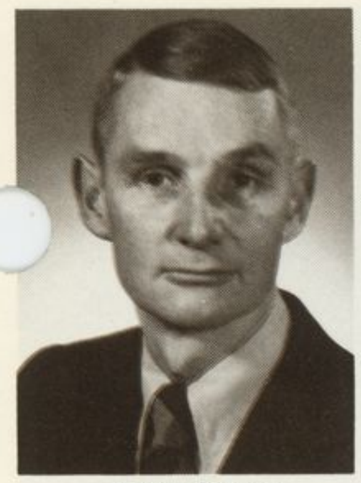
"The Saldidae can provide evidence concerning the relationship of the continents."

The work will also be related to much of the work Polhemus has been doing at the division on remote sensing. It will assist in applying remote sensing to the Earth's biological problems and in using insects as ecological indicators.

Polhemus, who is a staff member at the University of Colorado as an associate in entomology at the university's museum, is working at the division on the development of a wristwatch-like device to give the wearer constant pulse and blood pressure readout. Th work is being funded with NASA technology utilization funds and Martin Marietta Corporation venture funds.

He is also continuing work in remot sensing and is involved in technolog forecasting for advanced planetary probes for the 1985-1990 period.

Polhemus has been with the Denver division since 1960.



Major Churan

Captain Hull

Air Force officers begin EWI program

Maj. Thomas M. Churan and Capt. Dale L. Hull have begun a 10-month assignment at the Denver division in the U.S. Air Force Education with Industry (EWI) program.

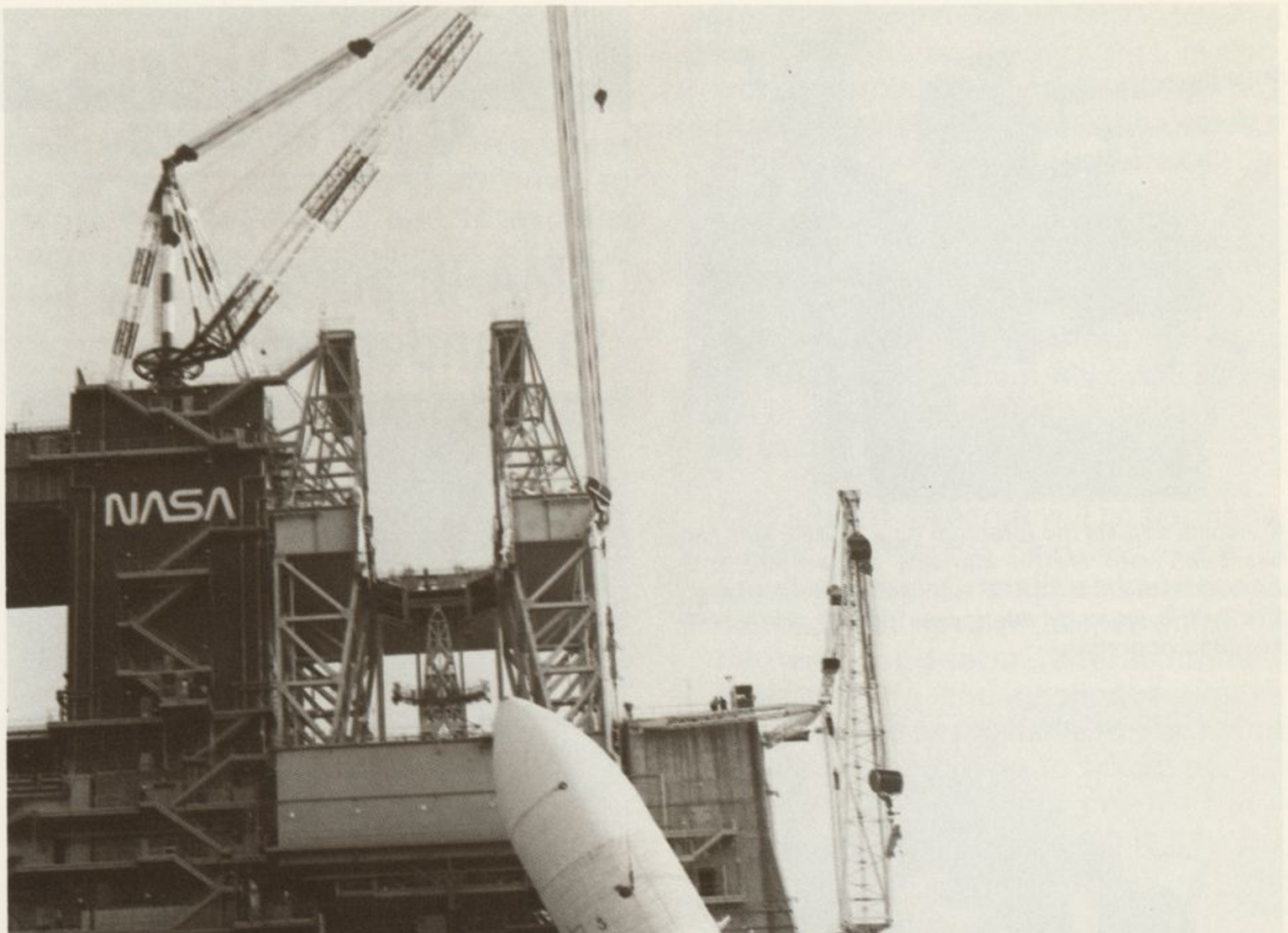
This is the fourteenth consecutive year the division has participated with the Air Force in the graduate-level program for career officers administered by the U. S. Air Force Institute of Technology (Air University) at Wright-Patterson Air Force Base.

The management internship program emphasizes on-site industrial educational experience, providing the student officer a greater understanding of production, procurement, and management problems shared by industry and its customers.

After completing the program at the division, officers are assigned to Air Force procurement functions.

Major Churan was a staff development engineer in the directorate of test at the headquarters of the Air Force systems command at Andrews AFB, Maryland before being assigned to the EWI program. He has been in the Air Force 14 years. He has had assignments as an aeronautical engineer with the service engineering division of the directorate of materiel management at the Sacramento air logistics center at McClellan AFB and as a test project officer at the air proving ground center at Eglin AFB. He has a BS in engineering science from Johns Hopkins University and an MS in mechanical engineering from Arizona State University.

Captain Hull was a Titan II missile combat commander at Davis-Monthan AFB, Tucson, Arizona prior to his EWI assignments. He also has served as administrative and training officer at the technical training center at Sheppard AFB, Wichita Falls, Texas. He has been in the Air Force six years. He has a BA degree in secondary education from the University of Akron and this year earned an MS in public administration from the University of Northern Colorado.



The MPTA external tank is lifted into the test stand at NSTL where, as part of the Shuttle main propulsion system, it will be tested late this year. The testing will be conducted on a modified stand which was used during the 1960s for firing Apollo/Saturn V booster rockets.

In Michoud

Call Ray Lacombe at 3606 with suggestions or information for articles for Martin Marietta News.

Seven employees assigned to the division's Space Shuttle launch process system checkout, control, and monitor subsystem (LPS/CCMS) project at Kennedy Space Center recently received Spot Awards for outstanding performance. Jack Kimpton, left, field operations manager, congratulates John Gardner, Joe Bayer, Tom Jamieson, Jim Kershaw, Mike Miller, Tom Keys, and Chuck Biby for their outstanding performance during installation of CCMS hardware.

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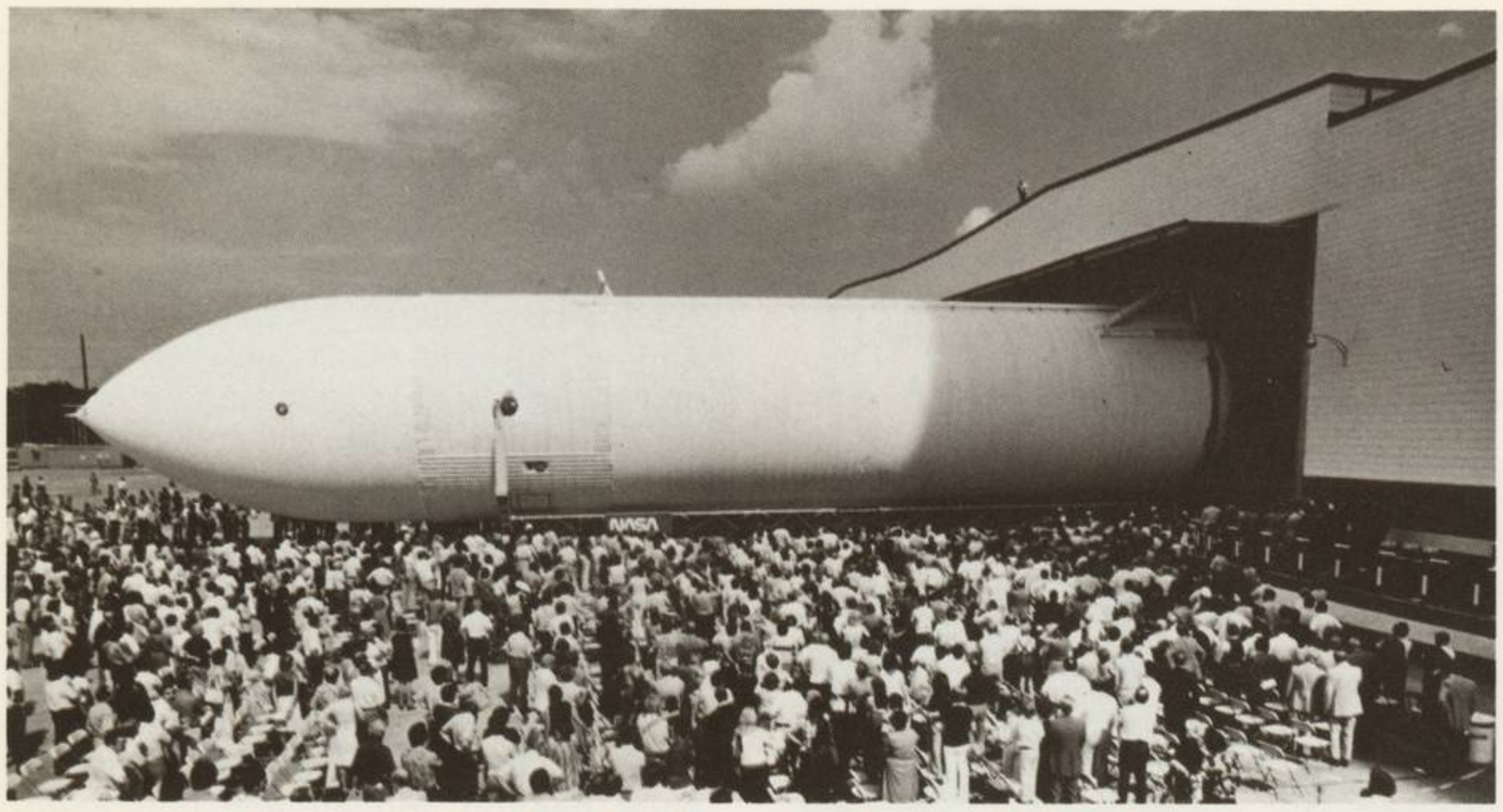
MICHOUD OPERATIONS



First external tank delivered to NASA

"What impresses everyone, including me, who sees this external tank is its sheer massive size," John F. Yardley, associate administrator of NASA's Office of Space Flight, said as he accepted the first external tank in ceremonies at the division's Michoud operations September 9.

"The carefully engineered internal structures . . . are covered up," Yardley said. "What one sees and senses are the tank's huge dimensions — the 154-foot length and 28-foot diameter. I suppose that in time we will become accustomed to these huge objects, since eventually we hope to be producing about 60 a year, but for now I like to think of them as symbolizing the huge significance to our country of the Space Transportation System, of which they are principal components."

The external tank Yardley accepted for NASA was the main propulsion test article. The next day it was moved to NASA's National Space Technology Laboratory in Mississippi where it will be used for propulsion system testing with the Shuttle's main engines.

L. J. Adams, president of Martin Marietta Aerospace, said, "This is an important occasion for both the nation's space program and for the Martin Marietta Corporation. Our delightful association with NASA began more than a decade and a half ago. That was when we started providing major launch systems, equipment, and instruments to assist the advance of the art of space flight, and to explore our solar system.

Larry Webb

First, there was the Titan launch vehicle for the two-man Gemini spacecraft," Adams said. "Later came the equipment and experiment instruments for the Skylab manned space station. Then, just a year ago, our relationship reached a pinnacle when the twin Viking landers settled safely on the Planet Mars and radioed their findings across the millions of miles of space to the eager scientists on Earth.

"And, now, today, we are delivering to NASA a major element of this nation's next important step in space — a step that will inaugurate regular operational manned space flights," he said.

"We are proud to be a key member among our industrial peers in the preparation of more economic space operations and the early return of the United States to manned space flights."

Joining Yardley and Adams in the rollout ceremonies were Dr. William R. Lucas, director of Marshall Space Flight Center, as master of ceremonies. The invocation was by Father Robert J. Ratchford of Loyola University. Making brief remarks were James E. Fitzmorris Jr., lieutenant governor of Louisiana; and members of Congress Mrs. Lindy Boggs, Louisiana's second district, and Larry Winn Jr. from the third district of Kansas.

Mrs. Boggs is a key member of the House Committee on Appropriations and Congressman Winn is the ranking minority member of the subcommittee on Science and Applications of the House Committee on Science and Technology.

Dr. Lucas, in opening the ceremonies, said, "One of the pleasant duties that is mine as director of the Marshall Space Flight Center is that, on occasion, I have the opportunity of saluting employees and associates for excellent workmanship. To that end, we have prepared a certificate for each employee of Martin Marietta Aerospace Michoud operations, testifying to association with this important event and our appreciation for that contribution."

Larry Webb, president of UAW local 1921, the bargaining unit representing Michoud production employees, was chosen by the Manned Flight Awareness committee to represent all employees at the ceremonies and received a certificate from Dr. Lucas, symbolic of the presentation to all employees.

Yardley, in closing the ceremonies, said, "What we do here today is an important step on the way to an historic launch. Will you please roll out the tank."

Executive enrolled in Harvard program

James W. McCown, deputy project director for Michoud operations, has been selected to attend Harvard University's advanced management program. The program is designed to meet the needs of companies in educating outstanding men and women for top management positions.

McCown, who has been at Michoud four years, began his studies in mid-September.

Frank Carey will be acting deputy to George E. Smith, vice president and project director for Michoud operations, while McCown is attending Harvard.

Carey will coordinate and integrate Michoud assembly facility efforts i support of offsite activities at the National Space Technology Laboratories in Bay St. Louis, the Marshall Space Flight Center in Huntsville, and the Kennedy Space Center in Florida.