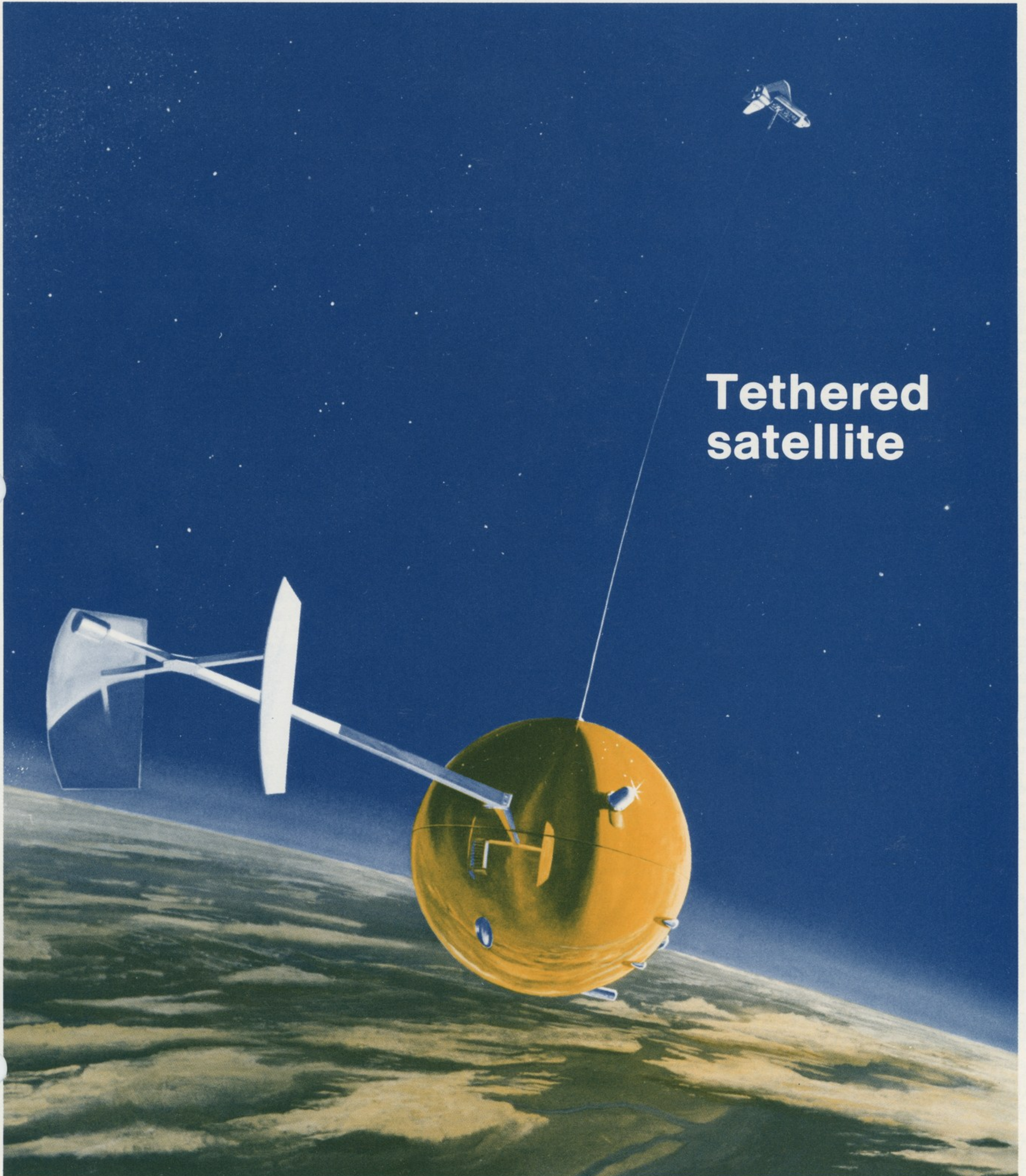


MARTIN MARIETTA

# news

DENVER DIVISION

NUMBER 6/1980



**Tethered  
satellite**

## Division projects to be displayed at AIAA show

Descriptive graphics and working models of the division's more futuristic projects will be featured at the 1980 American Institute of Aeronautics and Astronautics international meeting and technical display to be held in Baltimore May 6-11.

Called Global Technology 2000, the meeting is divided into four major advanced technology areas: transportation (air and space); space science and applications; energy; and defense.

L. J. Adams, president of Martin Marietta Aerospace, is general chairman of the meeting.

Division projects to be displayed include the reusable (tethered) satellite that will permit scientific studies at altitudes previously inaccessible to certain types of satellites; the manned maneuvering unit for Space Shuttle astronauts; large space systems that can be constructed in space, such as antennas 300 meters in diameter; and the space sextant, which can provide position information to within 800 feet independent of data transmission from Earth.

Also to be shown are the Venus orbiting imaging radar, a spacecraft that will explore and map the surface of Venus for the first time; the nephelometer that will study Jupiter's clouds as a part of the Galileo Jupiter probe; the faint object spectrograph that will be able to observe objects 100 times more faint than can be seen by the most powerful Earth-based telescope; and a solar energy display featuring both photovoltaic and solar thermal central receiver power systems.

A technical paper, "Solar Central Receiver Hybrid - A Cost Effective Future Power Alternative," will be presented by David G. Beshore. Co-authors are C. N. Bolton and J. E. Montague.

## Open house to be July 26

The Denver division will hold an open house for employees and their families Saturday, July 26.

Committees are making plans for the events, with details to be announced later.

Mark the date on your calendar and plan to attend.

## On the cover

**Satellites tethered to the Space Shuttle orbiter will permit a wide variety of science and applications missions to be performed at the same time as the prime orbiter missions. Tethered satellites can be placed in new orbits, retrieved, refurbished, and reconfigured for new missions. The division tethered satellite concept will be displayed at the AIAA international meeting and technical display to be held in Baltimore May 6-11.**

## 12 receive awards for inventions

Twelve employees will receive cash awards for their inventions following action by the Denver product development review board. The inventors, their departments, and inventions:

**James B. Beal, Vincent J. Clisham, William R. Garner Jr., and Robert W. Polen**, Michoud operations, "Ultrasonic weld inspection microcomputer system."

**Frederick A. Jaeger**, engineering mechanics, "Ammonia absorption air conditioner/refrigerator."

**Satish K. Anand**, ground electronics production systems, "Microprogram implemented minicomputer emulator."

**Thomas A. Milligan**, electronics, "Dual frequency waveguide cavity cross slot conformal antenna" and "4 frequency flush mounted circumferential slot antenna for missile skin."

**Frank R. Bilek**, electronics, "Reflection phase matching of microwave cables."

**Wayne E. Simon**, engineering mechanics, "Lateral support system for canister-launched missile."

**Frederick W. Dawson**, engineering mechanics, "Multiple axes gimbal system with no single point mechanical failure."

**William H. Tobey**, systems engineering, "Deployable tensioned membrane antenna using box truss hoop."

**Philip R. Horkin**, electronics, "Improved pin diode attenuator."

## Energy conservation program continues with high priority

Controlling energy use continues to be a top priority in the division with energy-saving measures being designed into new facilities and new control equipment being installed in older buildings.

In new buildings under construction and planned, insulation levels will be higher; minimal amounts of outside glass will be used; heating, air conditioning, and ventilation controls will be more effective; and light controls will be more selective.

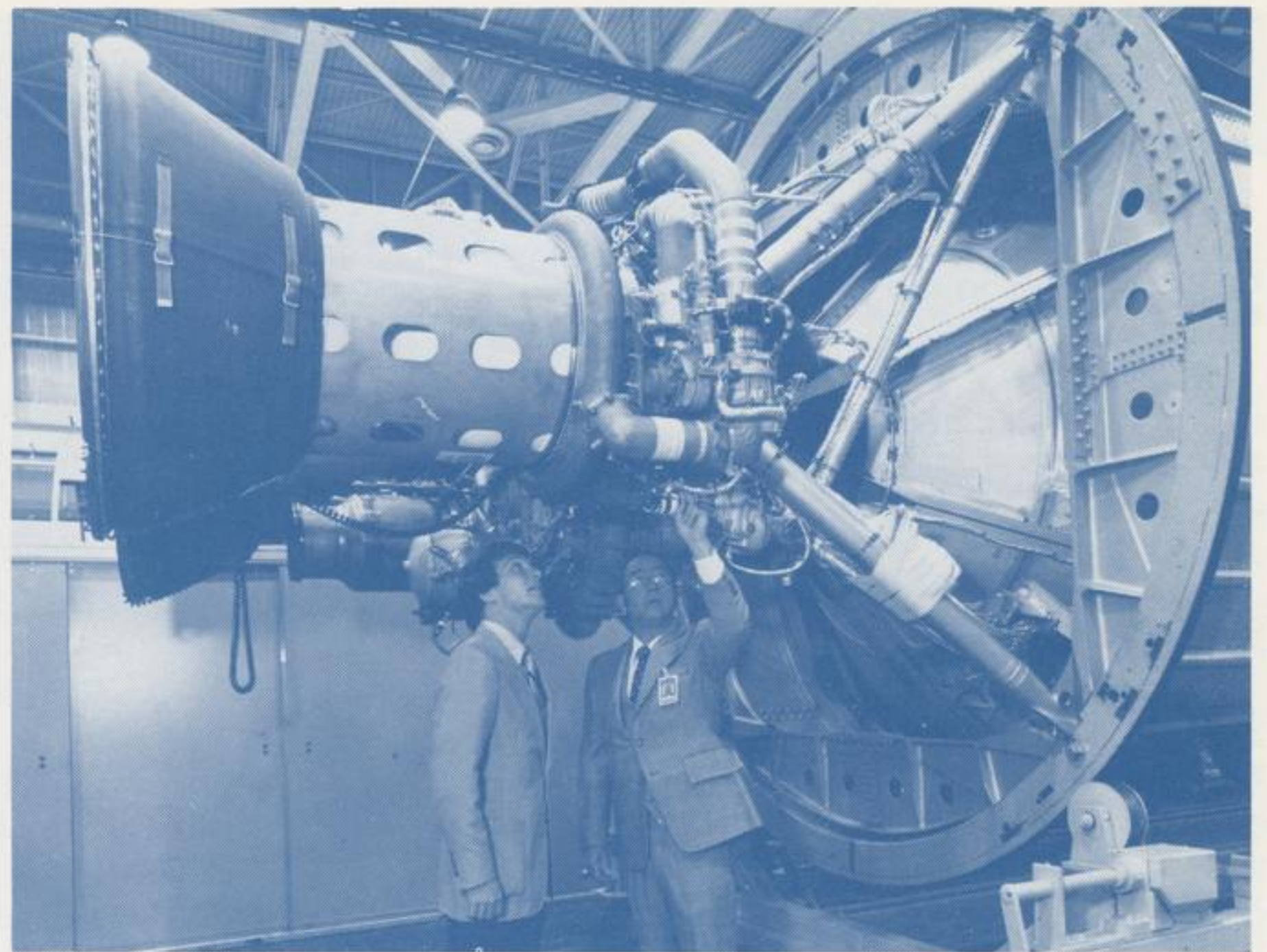
At the division's main facility, new automatic building control equipment is being installed not only for more efficient light, heating, and air conditioning, but also for improved building security and fire protection.

Larry A. Dolan, who became energy coordinator earlier this year, said a revised energy audit schedule has been set so that each building can be evaluated and, if necessary, changes made to make them more energy efficient.

"Employees assigned to new buildings will be better able to assist in energy conservation, especially lighting, than can those in the older buildings," he said. "However, during our audits we are looking at the feasibility of modifying light controls in older buildings as well as updating heating and air conditioning controls."



Larry A. Dolan



Philip O. J. Rogers, left, seated, in photo at left, is shown with part of his crew in Baltimore. In photo at right, Philip L. Rogers, right, and his son Jeffrey, check Titan launch vehicle in Denver manufacturing area.

## Martin Marietta, Rogers family continue together

A letter written 40 years ago by Martin Marietta's predecessor company—the Glen L. Martin Company—offering a job to one man began an association between the company and the Rogers family that has seen seven members of the family become employees.

Recipient of that first job offer was Philip O. J. Rogers who decided he would take the job—at least on a temporary basis. He completed his temporary stay with the company 28 years later.

During those 28 years, two sons, a daughter, and two daughters-in-law also joined the company.

The two sons are still with the company and a grandson became an employee in January 1979.

One son, Philip L. Rogers, and the grandson, Jeffrey S. Rogers, work at the Denver division; the other son, Harry C. Rogers, is assigned to the Orlando division's Pershing program in Germany.

Denver's Philip Rogers began his association with the company not as an employee but as a member of the company boxing team in Baltimore.

"My father began as a second class tool design/tool manufacturing man," said Rogers, "and I began as a second class boxer. Within six months Dad was a foreman and I ended up as captain of the boxing team."

Rogers was offered a job as a draftsman in 1946, but elected to stay in the Marine Corps following World War II. He was discharged after the Korean conflict and in 1953 was hired by the company as an accountant clerk. He

held various finance positions in Baltimore and Orlando before coming to Denver in 1973 to work on the MX proposal. He is now program manager for finance and planning for space launch systems.

Jeffrey Rogers is a software estimator in finance. He will add another Rogers name to the Martin Marietta payroll in June when he and Leslie Allen are married. She is a test conductor on the manned maneuvering unit program.

## Savings bond drive to begin May 27

The division's annual U.S. savings bond campaign will be held May 27 through June 12. Department coordinators will meet at 9:30 am May 22 in the engineering presentations room to prepare for the campaign.

Each employee will be given a new payroll deduction authorization card because of the introduction of the new Series EE Energy Savings Bonds by the U.S. Treasury department. Series E savings bonds will no longer be issued.

The Series EE bonds will be issued in \$50, \$75, \$100, \$200, \$500, \$1000, \$5000, and \$10,000 denominations. The \$25 denomination has been eliminated. The new bond purchase price is one-half the face value—\$25 for a \$50 bond, for example—instead of the three-quarters purchase price for the Series E bonds.

"Employees may wish to adjust their allotment for bond purchases at this time," said Leroy Hollins, campaign coordinator. "If a new authorization card is not returned, the employees' current allotment will be converted to the most appropriate denomination of the new bonds."

Old savings bond deduction authorization cards should not be used.

The Series EE bonds will earn a guar-

anteed 6.5 percent interest when held at least five years. Interest accrues monthly for the first two and one-half years and is compounded semiannually thereafter. They reach maturity in 11 years. The new bonds may be redeemed anytime after six months from date of issue.

Martin Marietta President Thomas E. Pownall describes the sale of U.S. savings bonds as one of the least inflationary sources of borrowing available to the U.S. Treasury. "It is impossible to overemphasize their importance to our nation or to you," he said.

## Awards night is set for May 17

The Denver Division Awards Night will be held Saturday, May 17 in the Imperial ballroom of the Fairmont Hotel.

Employees, who attend by invitation, will be honored for technical, management, and writing achievements during 1979. Some cited by the division will be nominated for further recognition at the Martin Marietta Corporation Honors Night.

# First quarter earnings a record

The Martin Marietta Corporation has reported its first quarter earnings were a record \$34,549,000, or \$1.39 a share. Earnings were \$32,760,000, or \$1.29 a share, in the comparable period a year ago.

Sales increased from \$437,333,000 in the 1979 first quarter to \$567,071,000 in the corresponding three months this year.

J. Donald Rauth, chairman and chief executive officer, said the 1980 results reflect strong performance in Martin Marietta Aerospace, which substantially increased its quarter's earnings over a year ago, and in Martin Marietta Aluminum and Martin Marietta Chemicals, both of which equalled their prior year's record quarterly earnings.

Martin Marietta's other two operating companies, Cement and Aggregates, had lower quarterly earnings — "partly because of seasonal disruptions," Rauth said, "and partly because of a marked slow down in homebuilding and some other important segments of the construction industry they serve."

Rauth said, "In the developing economic recession, our aluminum, chemicals, cement, and aggregates businesses will be affected eventually in varying degrees. Our fifth and largest company, Aerospace, does not react to the same economic forces and cycles, of course, and it is in a strong, continuing growth phase that began several years ago.

"Whatever the economic environment, we expect the Aerospace company will be a major source of improved earning strength in Martin Marietta. In a recessionary economy, its importance as a strong counter-cyclical factor in our earnings would be enhanced.

"Further, we are fortunate to be in a strong financial condition, able to maintain our capital expansion commitments to long-term growth and productivity improvements.

"In the past, all of our companies have demonstrated the ability for superior performance in their industries in either strong or weak economies. We expect Martin Marietta again this year to demonstrate its basic quality and strength — the capacity for excellent and competitive performance."



*The 5th Dimension, one of the most popular singing groups in the world, will appear in a Denver Symphony Pops Concert exclusively for Martin Marietta employees at Red Rocks the evening of Sunday, September 7. Applications for tickets to the twilight concert will be available in July. Because of limited seating, employees will be allowed two tickets.*

## Employees honored for long service to Martin Marietta

Fourteen employees were honored recently for long service to Martin Marietta — one for 45 years and 13 for 40 years.

Honored for 45 years of company service at the dinner was H. W. Guderjohn of technical operations.

Those who received 40-year service awards were:

**Technical operations:** W. E. Altstetter, J. E. Burghardt, P. H. Treide, F. W. Amorose, Charles Jackson, and F. J. Hefestay.

**Business operations:** J. D. Kellog, J. N. Fasciani, R. S. Clark, and S. P. Kassy.

**Command and information systems:** J. E. Brandenburg and J. F. Wisneski.

**Professional and industrial relations:** Walter Martynech Jr.

## Employee elected to town council

J. Carroll Curlander, MX program chief engineer, has been elected a trustee for the town of Columbine Valley. He also serves as building commissioner for the community and serves on the planning and zoning board.

# SRB parachute work continues at KSC

As prime contractor for the Space Shuttle solid rocket booster decelerator system, the Denver division is responsible for overall systems integration of the parachutes at Kennedy Space Center. Employees are continuing work on the project.

Each decelerator subsystem consists of a pilot, a drogue, and three main parachutes. At 1708 pounds, the 115-foot diameter main parachutes are the heaviest ever produced. The pilot and drogue parachutes are packed in deployment bags. The main parachutes are packed in separate bags and attached to an aluminum support structure. The work is being done at the parachute refurbishment facility.

At the vehicle assembly building, the main parachute support structure is installed in the top of the SRB. The drogue parachute bag is strapped on top of this assembly. The pilot parachute bag is installed on top of the drogue bag and is attached to the booster's nose cap.

The division also will be responsible for inspecting, repairing, and repacking the parachute upon return.

Pioneer Parachute Co., under contract to the division, manufactures the hub parachute at its plant in Manchester, CT. The main parachute support structure is manufactured in Denver.

## Recreation

**Golf Leagues:** All golf leagues are requested to register with the recreation office no later than May 5, giving chairman's name, extension, and mail number. Leagues not registered will not be sanctioned by recreation.

**Pool Tournament:** First place trophies in both straight pool and eight ball divisions of the annual pool tournament were won by Jarrett C. Peter. He defeated Robert J. Ancell for the straight pool title and K. Z. Bradford for the eight ball victory. Bradford was third in the straight pool division and Wendell H. Chun was third in eight ball. Interest in the tourney was great enough that another will be held this fall.

**Fashion Show:** A few tickets remain for the fashion show to be exclusively for Martin Marietta's female employees Thursday, May 8 at the Heather Ridge Country Club.

### 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 CO 80201  
May 1980

## Top safety awards are earned at KSC

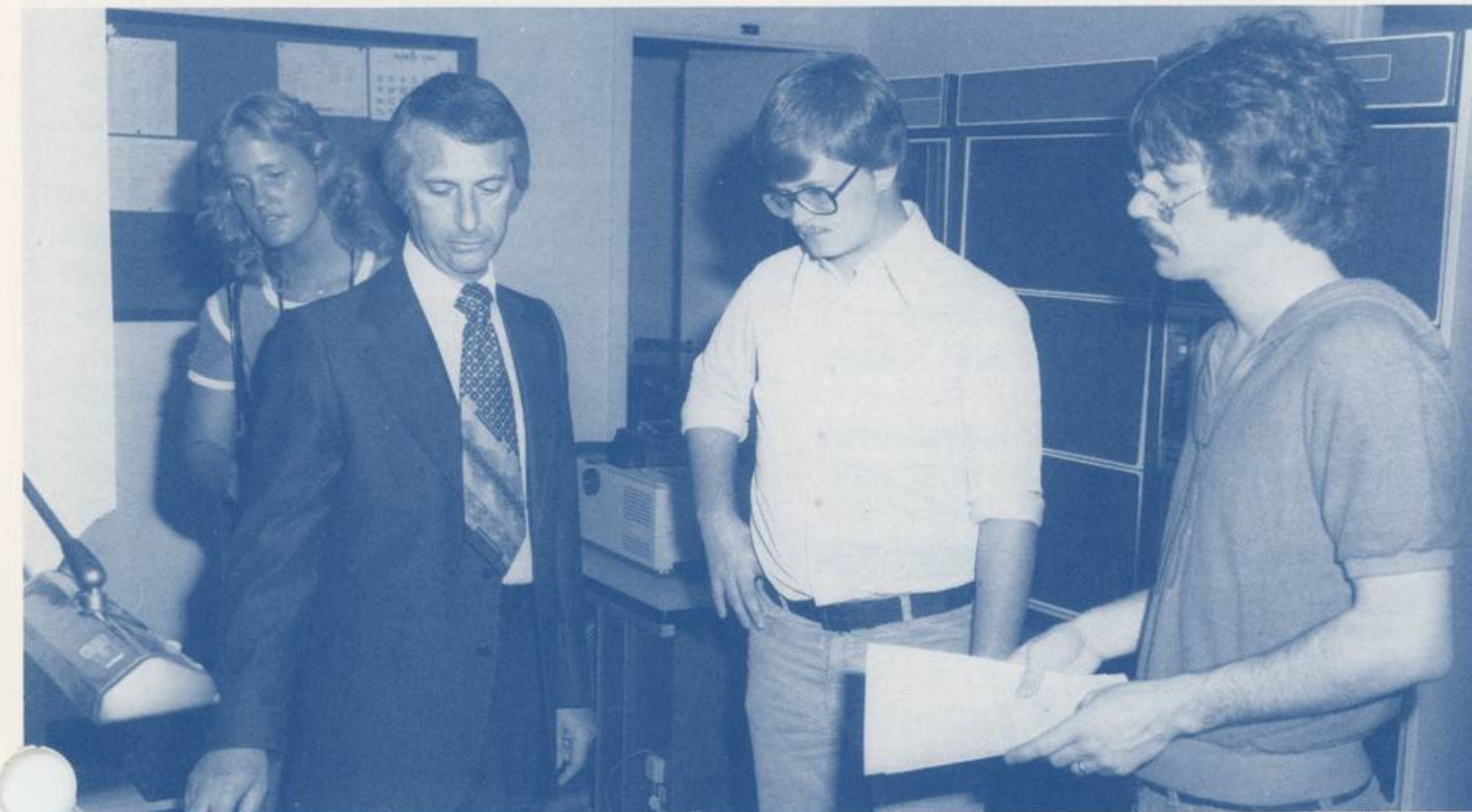
External tank operations and the check out, control, and monitor subsystem (CCMS) project at Kennedy Space Center each have received the center director's safety award — the highest obtainable by a contractor. The award was presented for outstanding accident prevention for 1979. It is the second consecutive award for external tank operations. Only three of the awards were given in 1979.

External tank operations, CCMS, and the solid rocket booster deceleration subsystem parachute project each received accident prevention certificates, a lesser award, for accident-free records for the year.

External tank personnel have completed four calendar years and more than one million man-hours without a work-related, lost-time injury. CCMS employees worked more than 95,800 man-hours, and parachute system project employees more than 9,000 man-hours without a work-related, lost-time injury.

## Orlando division gets Copperhead contract

A \$62 million contract has been awarded the Orlando division to begin volume production of Copperhead, an anti-armor, laser-guided artillery shell. Development and operational testing was completed in 1979 and initial production begun. Production of the 155 mm cannon-launched projectile is anticipated for several years.



More than 1500 Air Force personnel, contractor employees, and their families toured the Titan ITL during an Air Force 6555th Aerospace Test Group sponsored open house. The tour included the Titan IIIC and Titan 34D vehicles in the vertical integration building, the instrumentation ground station, the launch control room, and complex 40. The film, "Profile of a Titan," was shown continuously. Martin Marietta guests also toured the company's computer, CIC, and engineering facilities. In the photo, Martin Blankfield, second from left, chief of computer services, explains the operation of the Digital Decwriter II programmer's console.



Frank J. Matasci, left, received the 1979 flight success award and Frank M. Taitague, right, was recognized for his contributions toward flight readiness at Vandenberg operations' Gold Medallion awards banquet.

## 28 are honored at Vandenberg

### Employees praised for highway study

Seven employees have been praised for their contributions to an evaluation of the management and efficiency of the Colorado highway department.

Cited by Carlos de Moraes, chairman of the governor's task force, were A. E. Hawkins, R. G. Adamson, Martin Bowland, T. M. Crawford, D. M. Fain, R. J. Masi, and O. Ben Thomas.

The group worked about a year.

Twenty-eight employees were honored at the Vandenberg operations Gold Medallion awards banquet held to recognize individual employee excellence during 1979.

The certificates and medallions were presented by O. L. Jones, Vandenberg operations director, and R. D. Rhodus, ground support system (GSS) project director.

Vandenberg operations employees honored for Titan program administration and performance were E. Dean Morrow, Donald B. Wilson, Roger H. Burris, Monte J. Finley, Hanalore Will, Michael J. Savage, Albert R. Acosta, Takashi Tomooka, Walter J. Smolley, Edward M. Carson, C. Leon Culwell, A. Dean Thompson, George A. Rock, and Andrew J. Hall.

The GSS awards recognized employees for their contributions toward progress made during 1979 in the fields of project planning, administration, and design. Those honored were James A. Griffin, Santo B. Bertuzzi, Judith A. Neilson, Lester M. Strong, Douglas W. Webster, Donald C. Hampton, Millard W. Schaaf, Jack A. Troutman, Donald C. Cook, William Gleason, George H. Wood, and John W. Planinac.

In addition to the certificates and medallions, C. E. Carnahan, space launch systems vice president, honored two employees with special awards. Frank M. Taitague, test operations department, was recognized for his involvement in flight readiness, and Frank J. Matasci, quality department, for his contributions toward flight success.

# Safety gets attention at Michoud

Improved physical working conditions and increased employee knowledge and interest have contributed to improved safety on the job at Michoud operations, according to Earl McNail, the operation's safety manager.

Safety of people and property always has been the concern of the safety department. However, a successful safety program requires participation by all departments so emphasis has been on increasing employee safety awareness and interest.

"In 1979," said McNail, "we provided 23 safety-related training courses. More than 600 sessions had a combined attendance of more than 4500. Of course, since we have just over 2100 employees, that means some employees attended more than one session.

"First priority is to stress the importance of safety in day-to-day activities and in achieving mission success. Worker knowledge is better applied to help identify potential hazards that might otherwise go undetected," he said.

We have held the training sessions and special safety briefings, increased the number of safety inspections, instituted a safety violation citation system, and improved the industrial hygiene and medical programs. Team participation has been increased in readiness inspections and reviews before beginning operations involving major tank assemblies."

Emphasis is on prevention rather than correction. Statistics show the effort worthwhile. During the last six months of 1980, 388 injuries were reported — including scratches and paper cuts. In the last half of 1979, 213 injuries were reported — a 45 percent decrease. Both the number of employees and the number of hours worked during the period increased.

More recent statistics show a decline in injury severity rates. Based on 12-month averages ending August 1979, 19 lost days per 200,000 work hours were attributed to on-the-job injuries. Ending February 1980, the most recent month for which statistics are available, ten lost days per 200,000 work hours were attributed to on-the-job injuries. This improvement reflects the fact that all of the more than 2100 Michoud employees worked the past five consecutive months without a lost-time injury.

"We also discovered that a disproportio-

nate number of injuries occurred to new employees," McNail said. "Primarily through training and supervisory assistance, these injuries have been reduced by 84 percent, again despite the increased number of employees and hours worked."

The attention to safety at Michoud has not gone unnoticed. After a recent visit to Michoud, LImar Lulis, Martin Marietta Corporation manager of in-

dustrial hygiene, reported that his "observations indicate that the necessary management and organizational support exists to further reduce the accident experience and health hazard potential at this facility."

The NASA safety, reliability, and quality assurance survey team made a similar report after its visit. "Safety awareness, discipline, and housekeeping throughout the plant showed a definite improvement . . . The overall results of the review indicate the Martin Marietta safety program is excellent."



## Michoud engineer aids blind cyclists

After four years on crutches as a child, Dean Monitor, Michoud operations staff engineer, is conscious of people with handicaps. In appreciation of overcoming his own, Monitor provides an opportunity for the handicapped to take part in activities that might normally exclude them.

Monitor, troubled by bone disease as a child, is now an accomplished bicyclist. He traveled the 500-mile Blue Grass Tour during Bike Centennial 1976. Monitor and his wife rode their tandem bicycle 435 miles on a two-week tour in Hawaii.

One thing of which Monitor may be most proud is that, over the past several years, he has used the tandem bike to introduce blind adults and children to cycling.

As Monitor puts it, "My lifestyle is centered around two things — the bike and the Bible. The 'spoke and word,' you might say," he adds with a smile.

Monitor first encountered blind cyclists as a member of the Baltimore Cycle

Club. A police officer who belonged to the club was blinded in the line of duty. Despite his handicap, the officer refused to give up his hobby, using a tandem bike and a partner to continue his cycling.

It was natural when Monitor got a tandem bike that children from the Maryland School for the Blind would find themselves seated behind Monitor as they pedaled their way around the reservoirs near Baltimore.

He is now a member of the Crescent City Cyclists and rides regularly with one of the club's two blind members. He says 27-year-old Charlene Hymel is growing more confident and assured with each trip.

"At first, she was rigid and tense, now she's beginning to relax," Monitor said. "She's a woman with courage."

Riding with blind partners has been inspiration and education for Monitor.

"They don't miss a thing," he said. "Not even the difference in texture of the road. One thing I've learned from them is how unaware I am of things around me."