

MARTIN MARIETTA

# news

DENVER DIVISION

NUMBER 1/1979



# All TRS employees placed following contract termination

The announcement before Christmas that NASA was halting work on the division's contract to develop and build the teleoperator retrieval system for space shuttle launched a concentrated effort to reassign employees working on the program.

C.B. Hurtt, vice president and general manager of the division, assured TRS employees that every effort would be made to reassign those affected by the termination.

By the Thursday before Christmas—four days after NASA's termination—most employees had been reassigned or offered new assignments. (Division management had set Friday before the holidays as the deadline to reassign the TRS employees.)

Of the approximately 400 employees working on TRS, 290 were assigned directly to the program. The remainder were "equivalent man-hours" were employees from other departments were spending some time supporting TRS but were not necessarily working full time on the program.

Twenty-one of the 290 have been retained to continue work on elements of TRS. (See related story this page.) Work to terminate and close the contract will require approximately 30 employees.

Open requirements in other division departments in Denver have been filled by 186 former TRS employees.

Another forty employees have either accepted or have been offered assignments outside Denver, including Vandenberg, Michoud, and Baltimore. Several employees have been offered positions in Seattle to support Martin Marietta work with Boeing on the design of new commercial airplanes.

Employees and their wives have traveled to offsite locations to discuss assignments and explore communities.

The ability of division management to quickly find what Hurtt has called "meaningful challenges" for the former TRS employees is evidence of the division's broadened business base. As reported in the year-end edition of the *Martin Marietta News* (Number 17/1978), the division has 370 active contracts with some 27 customers.

Hurtt said the most significant 1978 accomplishment was "the development of a broad business base producing long-term, solid growth for the division."

The division has been striving to improve the business balance and avoid the negative impact the cancellation or loss of a major program would have on employees.

The loss of TRS was a test of that effort; a test the division passed.

## Division to continue some TRS work

Despite the termination of NASA efforts to save the orbiting Skylab space station, the Denver Division will continue, albeit at a reduced level, to work on important elements of the teleoperator retrieval system spacecraft.

The primary work will focus on refining the mission applications of the tiny space tug, and optimizing the design of selected systems.

Both NASA and the Department of Defense have expressed a continuing interest in a future TRS-type space tug for a mission beginning in the early 1980s.

The agencies believe the versatile space tug should be added to the space shuttle system to enhance the usefulness and capability of the shuttle.

Robert J. Molloy, program director, will continue to manage the effort.

## Titan III puts two defense satellites in Earth orbit

A Titan III launched two defense satellites from Cape Canaveral in mid-December to complete the military's world-wide communication network.

The 1296-pound satellites were placed in Earth orbit 19,500 nautical miles above the equator. They join three other Defense Satellite Communication System phase II (DSCS II) satellites placed in orbit by earlier Titan III missions.

Two satellites, launched in 1977, are on station over the Atlantic and Pacific Oceans. The one launched in 1973 is operating over the Indian Ocean.

The satellites will provide primary space communication links for the Defense Department and other federal agencies. Using a X-band frequency, the system securely transmits voice, digital data, and television between military complexes, including mobile tactical sites.

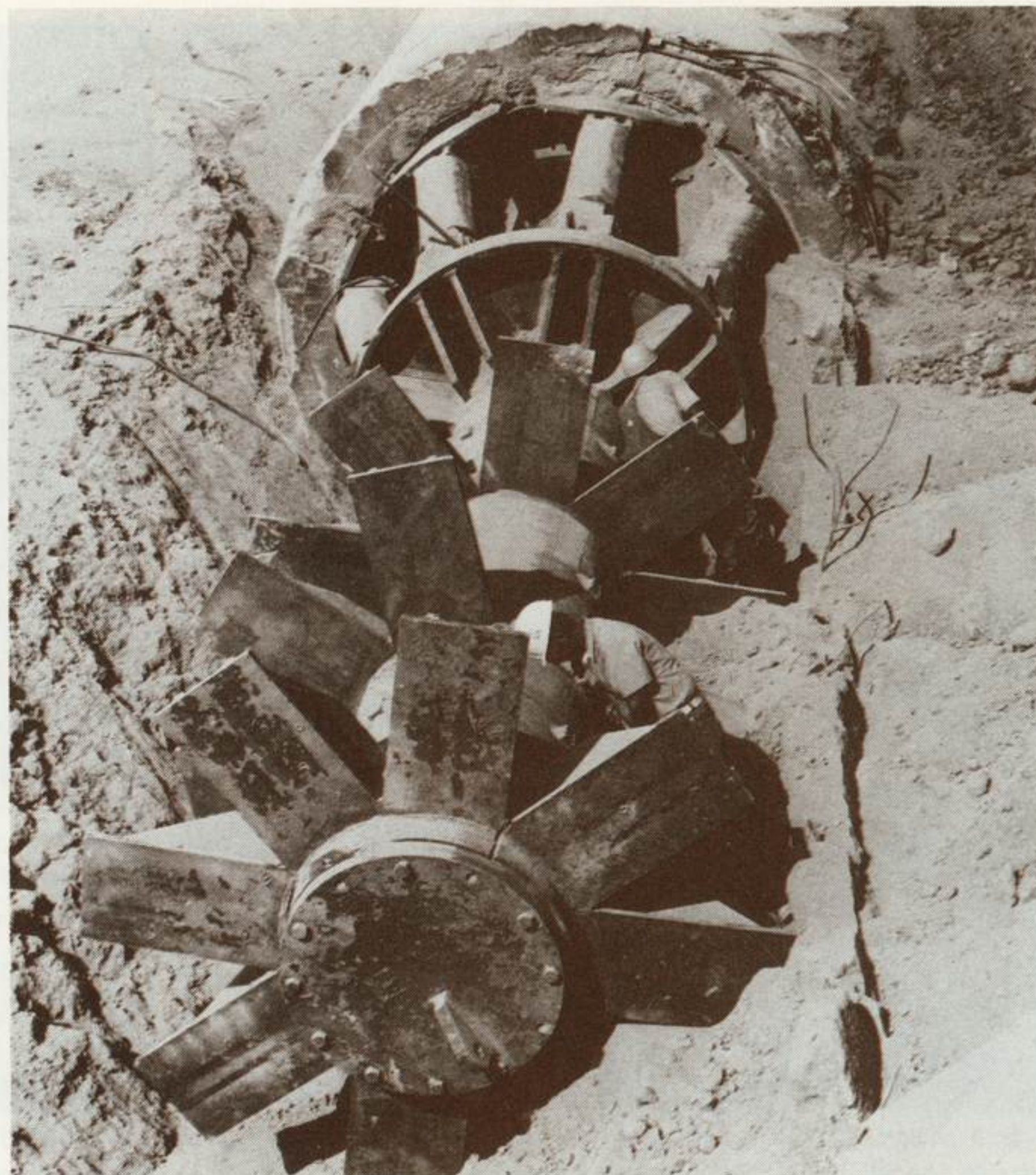
The mid-December launch was the 29th of the Titan IIIC from Cape Canaveral.



TRS program documents are being prepared for storage in the division's record retention area. James L. Oberg, Donald W. Baisch, and John P. Mari are shown packing storage boxes.



Some 13,600 pounds of high explosives are detonated at left to test the design of an underground blast protective device for the proposed Missile X system. The device, called a blast plug, is shown at right after the test. In the Arizona desert near Yuma, the Air Force conducted the test on the blast plug developed by the Denver Division. The test simulated the effects of a nuclear blast on the 64-foot long, 296,000-pound steel plug placed in an underground reinforced concrete tunnel. The tunnel is one of several multiple aiming point basing concepts being studied for the proposed Missile X intercontinental ballistic missile.



### on the cover

After 20 years as a photographic specialist with the division, R. C. (Dick) Parker recently received recognition for his work—international recognition. The inset photo shows the cover of the December 18, 1978 issue of *Aviation Week and Space Technology Magazine*. Parker took the photograph and received credit for his work in the magazine. Featured in the photo is the SCATHA satellite, designed and built for the U. S. Air Force by the division. The satellite is scheduled for launch from Cape Canaveral on January 25.

Parker snapped the cover photo late one night in early October 1978. "We wanted to get a shot of SCATHA coming out of the vacuum chamber in SSL," Parker said. "By the time they pulled the satellite out of the chamber it was pretty late but it was worth it to get that shot."

Parker said, "I get to see just about everything that goes on here in the division, either through a camera or in the dark room and I enjoy doing something for a living that most people do for a hobby."

Aviation Week is a major industry publication. During 1978, net paid circulation grew to over 100,000 with readers in 129 countries.

## Division gets Navstar program contract

The Denver Division is one of three firms awarded contracts for the design of a ground control segment for a military satellite navigation system called Navstar. The awards were made by the Air Force Space and Missile Systems Organization.

Fred H. Hudoff is program director for the work here with Dr. C. E. (Tom) Velez leading the technical effort. The 15-month contract is valued at \$2.6 million.

Under the contracts, the division and the other two contractors will independently design, but not build, the ground equipment to support Navstar.

The ground control segment will consist of eight monitor stations located worldwide and a master control center to be built and operated near Fortuna, ND.

Navstar is a global, all-weather, day or night navigation network under development by the Defense Department. The system is designed to allow a variety of military users to know their position within 30 feet, their speed within a fraction of a mile per hour, and time within a millionth of a second.

SAMSO is currently operating four Navstar prototype satellites orbiting 11,000 miles above Earth. The fully operational system will consist of 24 satellites.

Air Force program officials indicate the ground control segment must precisely determine satellite orbits and transmit

that information to the satellites for subsequent retransmission to Navstar users. In addition, the ground control segment will provide on-orbit stationkeeping to the satellites as well as monitoring of system performance and making corrections as necessary.

When designs are completed, SAMSO will evaluate each company's concept. At that time, say Navstar officials, one firm will be awarded the production contract expected to be in excess of \$50 million.

## Morgenthaler elected to Aluminum executive post

Dr. George W. Morgenthaler, formerly of the Denver Division, has been elected vice president, operations—primary products for Martin Marietta Aluminum.

In his new position, Dr. Morgenthaler has operating responsibility for alumina refining, carbon production, and reduction facilities.

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# Invention, technology awards made



Thiemet, Lager, Thomas

Twenty-two employees have been selected to receive cash awards for their inventions or new technology disclosures.

Selected for invention awards by the product development review board were:

**Donna P. Gober** and **Willard R. Haas**, propulsion lab, engineering mechanics: Chloramine gas generating system.

**David N. Grover**, software: Graphic visual displays.

**Lester A. Allen Jr.**, Vandenberg: Solar desalination system.

**Gordon K. White**, guidance and control, electronics: Bio-optic correlation control scheme.

**Leonard Silbert** and **Alvin T. Sheppard**, Michoud: Electromagnetic bonding—plastics to aluminum.

**Wayne E. Simon**, thermophysics, engineering mechanics: Sorting potential from minimum differences.

**Murlin T. Howerton**, thermophysics, engineering mechanics: Liquid-phase heat and mass transfer exchanger for reversible chemical reactors.

**John R. Lager** and **Donald A. Thomas**, materials engineering, engineering mechanics: Clamshell graphite/epoxy truss joints.

**Walter F. Thiemet** and **Donald A. Thomas**, materials engineering, engineering mechanics: Collapsible graphite/epoxy boom fabrication.

**David N. Gorman**, thermophysics, engineering mechanics: Multiple cavity central solar power receiver.

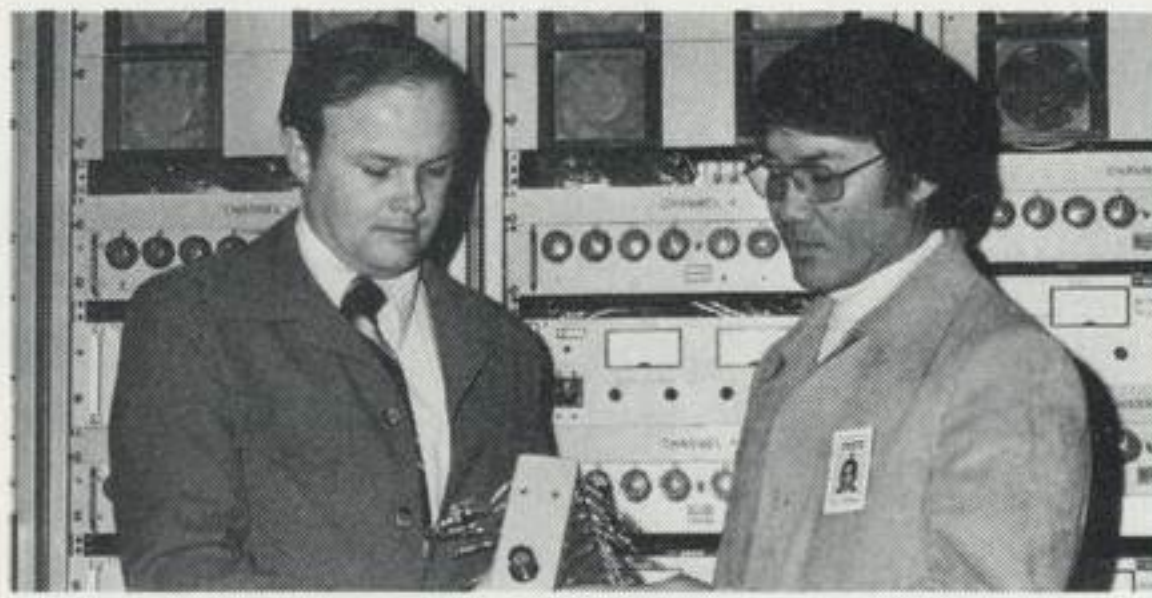
Those selected by the new technology evaluation committee for technology disclosures submitted as a result of work on NASA contracts:

**Richard L. Donovan** and **Mathew S. Imamura**, power systems, electronics: Multiplexed cell-level protection system for rechargeable batteries.

**Joseph F. Froechtenigt**, **Raymond O. Rantanen**, and **Ernest B. Ress**, systems engineering; and **Milton A. Hetrick Jr.**, thermophysics, engineering mechanics: Experimental investigation of contamination prevention techniques to cryogenic surfaces on-board orbiting spacecraft.

**Kenneth R. Payne** and **Peter W. Abbott**, dynamics, engineering mechanics: An impedance technique for determining low frequency environments.

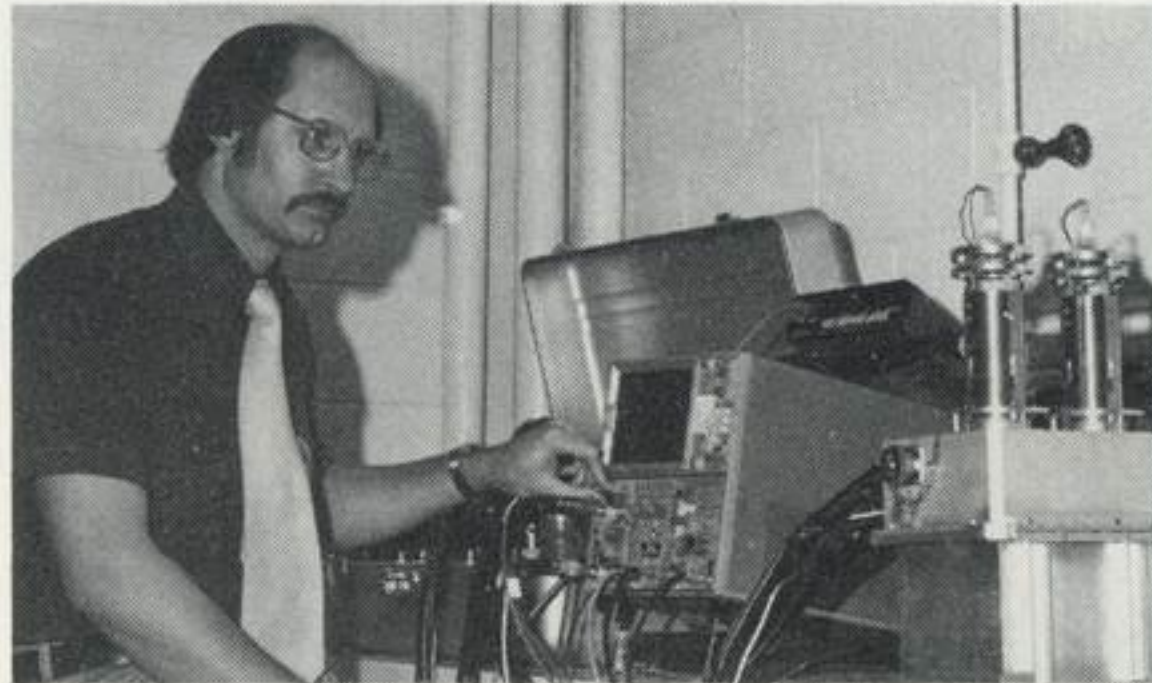
**H. Michael Thomas**, data handling hardware, electronics: Temperature compensating DC restorer.



Donovan, Imamura



Gober, Haas



Mike Thomas

## Society organized to recognize Mars landing

The First Mars Landing Society has been organized to perpetuate the memory of the Viking landing on Mars July 20, 1976.

First meeting of the society was held July 19, 1978, the day before the U. S. Postal Service issued a commemorative stamp recognizing the second anniversary of the landing.

Membership in the society is open to all Viking team members. Charter members of the society may obtain a First Day Cover signed by James S. Martin, A. Thomas Young, Israel Taback, and Gerald A. Soffen for the \$2.00 society membership fee as well as a membership card and certificate.

Requests for the First Day Cover and membership should be sent to First Mars Landing Society, P. O. Box 28, Hampton, VA 23669.

## Scholarship application deadline February 15

Application deadline for Martin Marietta Foundation scholarships for sons and daughters of employees for the 1979-80 academic year is February 15.

Evaluation of the \$2,000 scholarship award applications and selec-

## Continuing education programs are expanding

Continuing education programs are expanding and more employees are taking advantage of the opportunities offered at the division.

Newest of the programs is on-site instruction leading to a master's degree in aerospace engineering from the University of Colorado. The first two classes in the program are methods of engineering analysis (ME521) and space flight mechanics (Aero505). The classes will begin January 23 and registration will be that day.

The CU classes are "live" as opposed to the video classes that have been offered for graduate credit for many years in the Colorado State University SURGE program. SURGE classes continue with 13 being offered beginning January 29.

Undergraduate credit is being offered in three courses from Arapahoe Community College. Speed reading, organizational communication, and effective supervision are being taught on-site. Enrollment in these classes is closed because of the limited numbers allowed.

In noncredit evening classes, more than 300 employees enrolled in more than a dozen courses that began January 15.

Another new course will begin with an orientation session January 23. "How to Reduce Stress," is designed to aid employees in handling stress in their daily work lives. The orientation will be at 3:30 pm in the SSB 6th floor presentation room.

Two specialized short seminars will be offered throughout the year, with 20 two-day sessions planned for personal growth management and 11 two-day workshops scheduled for supervisors on coaching and counseling for skill development.

The supervisory fundamentals course open to first-line supervision will begin in early February. A course on program management will also begin in February.

For detailed information on all continuing education, including company sponsored on-campus enrollment, contact the training, education, and employee development office, RDL 412.

tion of winners will be made by a committee of three persons not associated with the corporation.

Forms and information may be obtained from R. W. Walker, training, education, and employee development, RDL 412, ext. 3395.

## Security inspections show need for care

Two recent security inspections—one a formal self-inspection by division employees and the other an in-depth examination by Defense Department representatives—show “room for improvement at the Denver Division.”

W. L. Miller, manager of the division's government security section, said, “Security is not the sole responsibility of the security department. Each employee must show care in observing the requirements regardless of the individual's level of clearance or the job.”

According to Miller, employees can help by:

- Making sure all classified document containers are locked when not in use, especially at the end of the work day.
- Wearing badges conspicuously on outer garments and by challenging individuals who are not displaying a badge.
- Processing classified visit requests a minimum of five working days before a visit to another facility.
- Handling, processing, or originating classified material according to the Denver Division Security Manual.
- Using only approved word-processing equipment for classified information. Such equipment must have approval of the security department.
- Holding or destroying classified documents only when authority exists for such action.
- Entering or allowing others to enter closed areas only when authorized.

“No one should have to guess what to do in a particular security situation,” Miller said. “Call us when a question exists. That is one area where we do have specific responsibility—answering questions about proper security procedures.”

## Big Brother fund campaign tops goal

The 1978 Operation Big Brother campaign was the most successful in the 20-year history of Big Brother, according to Lois Wishard who chaired the effort for Vandenberg operations. Goal for Martin Marietta was \$1,700. The record-breaking contributions totaled \$2,100.

Two hundred children selected from communities around Vandenberg Air Force Base attended the annual Big Brother Christmas party sponsored by Air Force personnel and contractor employees. After lunch and entertainment, each child received a large packet of toys, shoes, socks, and a food basket with all ingredients for a traditional Christmas turkey dinner.

## Michoud open house attracts 25,000

Floors gleamed with a company-is-coming shine, the theme song from “2001” played in the background, two miles of self-guided tour routes were roped off, and exhibits were ready. Space Day in New Orleans, proclaimed by Major Ernest Morial, was underway.

Six months of planning the open house proved worthwhile. Even though it was one of the coldest days New Orleans has seen this winter, 25,000 people attended the event at the NASA Michoud Assembly Facility.

Nearly 3,000 Martin Marietta employees, their families, and neighbors enjoyed coffee and donuts at a private open house before the public came at 10:30 a.m. Families lined up to have complimentary photographs taken in front of the external tank and sported a sense of pride.

“I told my whole family about our open house,” said Clifford Taylor. “I’m an ablator man, and did you know Martin Marietta is the only place in the U. S. that mixes ablators?”

Children ran excitedly from exhibit to exhibit. “I came out here to see everything,” said an eager Cub Scout. “I may be a scientist on a space shuttle some day, so I have to know about this stuff.”

Those who started the facility tour two hours earlier were almost finished. They began with the slosh baffle test, passed the full-scale oil painting of the external tank, and nearly 20 departments before coming to the vertical assembly building and the end of the tour.

Outside, there was a crowd bundled up in woolens at the Saturn rocket dedication. Robert C. Littlefield, manager of the NASA Michoud facility opened the ceremony and commented on the space program. “NASA’s space program offers many exciting and potentially beneficial results for the nation,” he said.

Astronaut Fred Haise, who will be one of the pilots of the space shuttle, addressed the crowd and praised the rocket as a monument to America’s space program. “We’re here today because of the future,” Haise said. “And construction of the external tank represents the future at Michoud.”

Also at the dedication was U. S. Rep. Robert Livingston of New Orleans who was “delighted to see that Michoud means jobs for so many people. What you’re doing here means meat on the table for thousands of Orleanians,” he said.

Later during the day-long open house, Fred Haise was to sign autographs for over 2,000 people.

Asked what he enjoyed the most that day, one 13-year-old boy said, “I like the big tank and displays the best. They’re pretty neat.” “Oh, yeah,” he added, “I really like seeing the different stages of the space shuttle.”

The space shuttle mission sequence was one of numerous NASA exhibits at the open house. Martin Marietta instrumentation engineer Phillip Holbertson listened to his young children discuss the sequence. “I had no idea they knew so much about space,” he said.

*next page, please*



*Some of the 25,000 visitors that toured Michoud operations open house on December 9, 1978.*



Space shuttle astronaut Fred Haise signs autographs for visitors to the Michoud operations open house.



More than 25,000 residents of New Orleans filed past the external tanks now in assembly at Michoud operations.

from preceding page

At the lunar module a middle-aged lady seemed a bit blasé. "Well, when I was in Washington, I saw the one John Glenn was in," she explained. "This one is only about one-third the actual size."

A few others in the crowd were equally smug about their experience and knowledge of space programs. "Michoud is pretty big. I was at the Kennedy Space Center three weeks ago, and that too, was really something."

Most of the people attending seemed ea-

ger to learn and excited about what they saw. "Look, Mom!" a ten-year-old boy screamed as he pointed to the space shuttle module, "look at the missiles." He thought a while and decided, "No, I guess those things are fuel tanks."

The space food display was another success. Adults and children alike marveled at chicken and rice, chocolate bars, and spaghetti transformed into cubes. One teenage girl wondered aloud: "I wonder if those things have as many calories as regular food?"

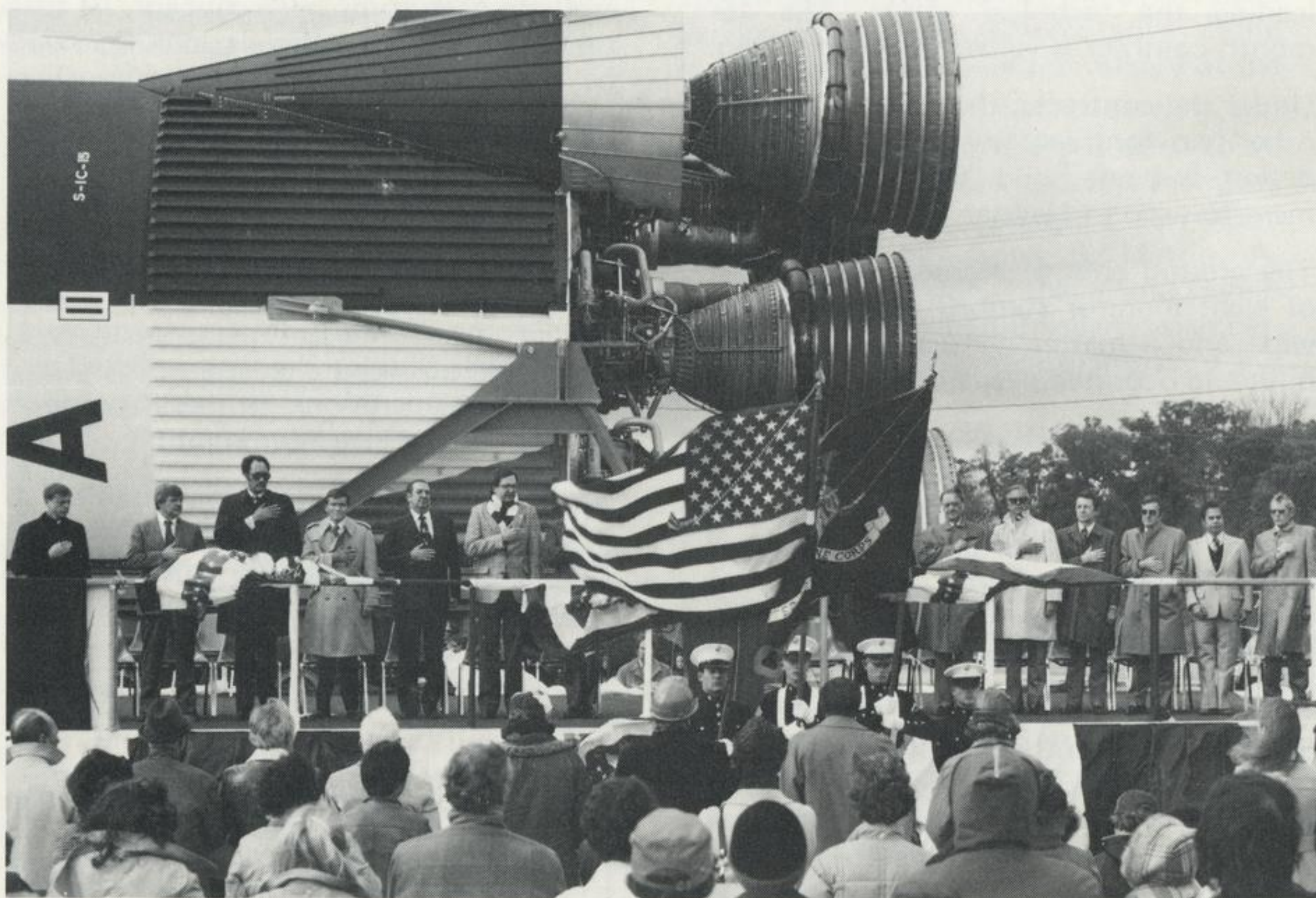
Many curious visitors at Michoud spent time watching one or both technical films being shown continuously. A few people stayed for several presentations of the external tank roll-out film and the NASA space shuttle film.

Each visitor, old and young, received a color photo of the external tank, a cardboard cutaway model of the space shuttle, and an illustrated tour guide.

From the expressions on faces of visitors in the Michoud cafeterias not all interests in Space Day were educational. More than 1,600 hot dogs and drinks were served to Martin Marietta employees. A table of little boys and their fathers from YMCA Indian Guides attacked a mound of food. When one of the boys was asked what he thought of Space Day he replied, "Great, and I just ate three hot dogs!" Another expressed an interest in the space shuttle. "When does it go up?" he asked. "Will it be on television?"

Their dads were also curious and asked more technical questions. One wanted to know about the precision tooling. Another wanted to know what procedure was used at Michoud to keep 43-acres of floors so clean and shiny.

A comment made by the father of a ten-year-old boy summed up the tremendous success of the Michoud Open House Space Day: "I have taken my son to all kinds of things in New Orleans for the past six years and I have never seen him this excited about anything else we've been to!"



A special feature of the Michoud open house was the dedication for public display of the Saturn V Moon rocket built at Michoud during the Apollo program. Local, state, NASA, and Martin Marietta dignitaries participated in the program.