

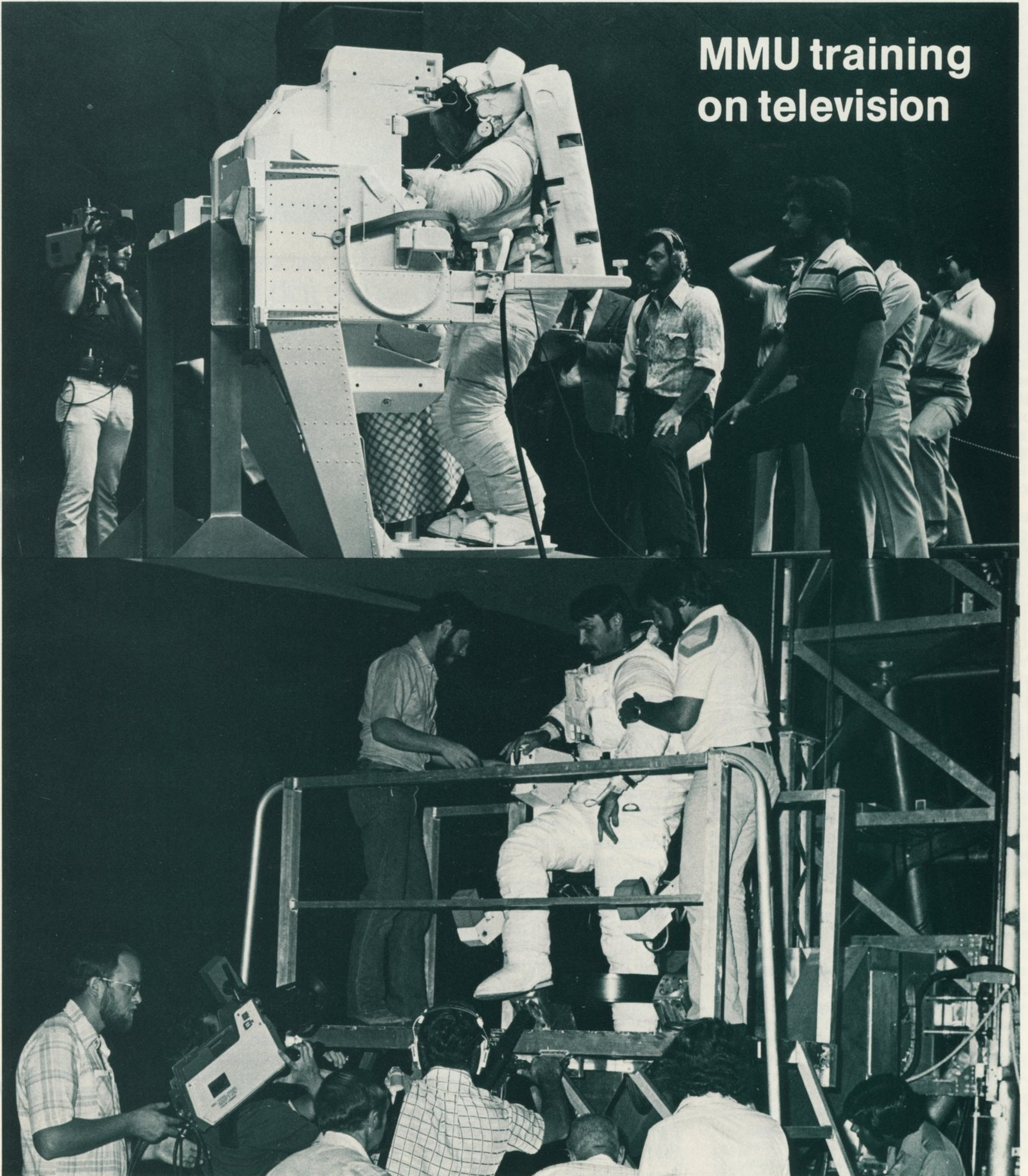
MARTIN MARIETTA

# news

DENVER AEROSPACE

NUMBER 14/1980

## MMU training on television



# Facility plans keep pace with business growth

The addition to the Denver systems center (DSC) is on schedule, the bridge from the upper parking lot to the SSB is nearly complete, work is progressing on the new building next to SSB, and the second floor cafeteria in the engineering building is reopening.

The work is part of the effort to keep pace with Denver Aerospace growth. The objective is to maintain the good working conditions and improve services to employees. More than \$26 million is being spent this year on capital improvements, including equipment updating, new office furniture, landscape improvements, and parking lot paving.

The 142,000-square foot DSC addition is scheduled for occupancy in the first quarter of 1981. Ceiling grids are in. The sprinkler system is being installed and landscaping has begun. The interior layout of the building is being reviewed.

A bridge connecting the upper parking lot to the fourth floor of SSB will be open this month. Heat strips are imbedded in the bridge floor to melt ice and snow. A six-foot-high fence will line each side of the bridge. With the reduction of lower level parking because of the new building next to SSB, more employees will use the upper lot. The bridge provides a convenient and easier access to the SSB.

Reopening the second floor engineering building cafeteria to accommodate about 200 diners at one time, will alleviate some of the overcrowding in the first floor cafeteria. The use of the space in its present form is temporary. The 1981 capital improvement budget includes funds for renovating the second floor cafeteria into a full-service cafeteria. Decorating plans call for it to have a new look, but not be a duplicate of the first floor cafeteria. The kitchen will be expanded on the first floor to make it more functional and better able to serve all cafeterias.

Work on the new building next to SSB is progressing. The 72,000-square foot, five story general office building will be similar to SSB in appearance. Completion is planned for early 1981.



Bridge from SSB upper parking lot will be open this month

## 'Talent bank' provides job opportunities

A Denver Aerospace talent bank—formally called the human resources data base system—is pinpointing new job opportunities and improving job security for employees.

"With the rapid growth we have been experiencing and with the reorganization, the system is a significant benefit to employees," said Floyd Teiffel, who is administering the talent bank. "When a job opens, the system quickly shows all the employees qualified for the job, their current jobs, their supervisor's name, and when they might be available."

Using that information, a supervisor can begin the selection of candidates for the open job.

"The system is designed so that all candidates inside the company have the new job opportunity," said Teiffel. "Only when there are no qualified candidates in the company does the supervisor go outside to hire someone for the job."

Professional, non-exempt salary, and hourly employees are a part of the talent bank.

Listed for each employee are skills, amount of aerospace experience, current job, labor grade, supervisor, personal data, education, military service, professional organization membership, foreign language skills, and emergency information.

Except for personal data, information is updated weekly. Changes also are made when requested by the employee. Each year, employees are asked to review the information and make changes.

Employees who may not have received a data bank form, or who wish to make a

change, should call Beverley Dare, ext. 5472.

Data in the Denver Aerospace talent bank is regularly made a part of the Aerospace Personnel System that serves all of Martin Marietta Aerospace.

"The system does work," Teiffel asserted. "Placements have been made using the talent bank. And we used the emergency data recently to assure a family that an employee had not been injured in an accident as might have been feared."

Teiffel will explain the system and its use to department managers and their staffs. Arrangements for presentations may be made by calling ext. 3238.

## Candidates invited to express views

Candidates for the U. S. Senate and the U. S. House of Representatives who are seeking to represent Denver Aerospace employees have been invited to express their views on key issues in a special edition of *Martin Marietta News*.

The special *News* will be distributed before the November 4 general election to give employees an opportunity to make an informed decision on their choice of candidates.

The statewide ballot proposals also will be discussed.

### On the cover

A U.S. Navy television crew working for NASA Headquarters Public Affairs was in Denver recently to record manned maneuvering unit tests and space operations simulator MMU flight techniques development. NASA astronaut David Griggs is shown on the cover being assisted by NASA suit technicians Michael Breckenridge (left) and Larry Kasallis from Johnson Space Center. NASA's media services branch distributes television materials to more than 800 TV stations.

# Carpools, buses are popular with employees

More than 2000 employees are in carpools and another 200 are riding RTD buses in a continuing effort to conserve energy and protect the environment.

There are three people in the average carpool, so about 4700 cars make the trip to and from the plant instead of the 5800 that might otherwise be necessary.

Five RTD buses serve two routes to the main facility morning and evening. The buses are filled nearly to capacity. Lori Sharp, share-the-ride coordinator, estimates that the number of bus riders could double if additional service was available. However, RTD does not have equipment to provide additional buses to the routes.

Incentives for carpoolers include preferential parking (a real advantage in bad weather), computer matching of employees interested in carpooling, and a shuttle bus rescue system for employees who miss carpool rides at the end of the day.

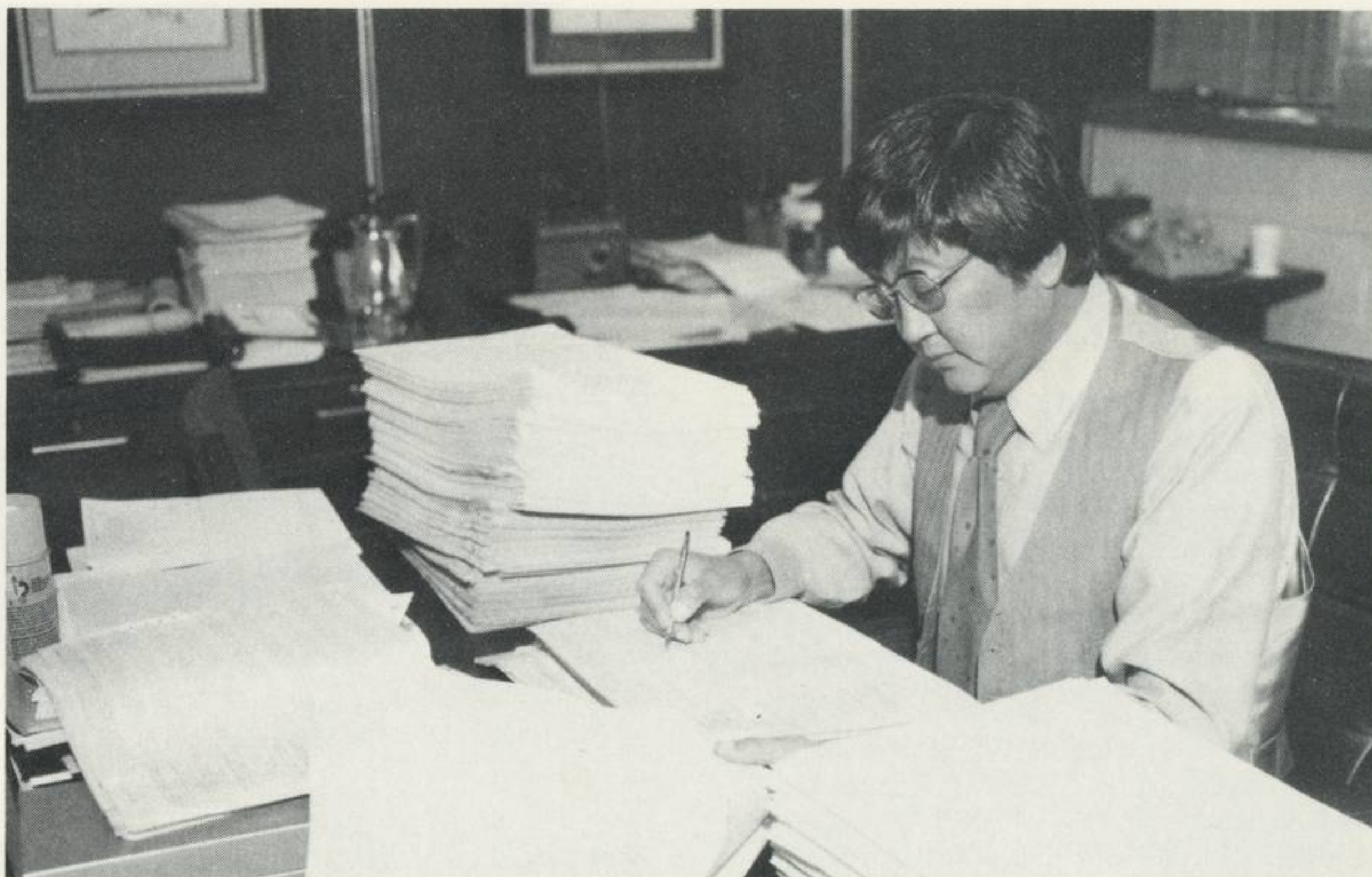
Bus riders are aided by a 20 percent discount on bus tokens through the share-the-ride program.

The computer matching service system operated by the Denver Regional Council of Governments (DRCOG) matches drivers and riders by home address, work location, and work hours. Employees may also obtain a list of other employees living in the same or adjacent ZIP code area from the share-the-ride office.

The rescue system shuttle bus leaves the main plant each day at 6 pm and follows a route that connects with RTD bus stops as well as stopping at convenient pickup points for private transportation.

New employees are told of the commitment to carpooling in a letter from C. B. Hurtt, Denver Aerospace president. He writes, "Benefits of the share-the-ride are many—improved air quality, gasoline conservation, and reduction of traffic congestion. Driving alone is a difficult habit to break. But, it must be done if we are to solve environmental and transportation problems facing our nation today and in the future."

New employees receive the letter, information on the share-the-ride program, and a carpool application for the DRCOG computer matching service during their orientation.



Dr. Roy Yamahiro summarizes results of the employee survey in preparation of reports to employees. Information will be communicated in meetings and in the **Martin Marietta News**.

## Follow-on contract negotiated for CCMS

The Denver Aerospace ground electronics production systems recently completed negotiations for a \$55 million add-on to the existing contract with NASA for command, control, and monitoring subsystems (CCMS) equipment.

Under the new contract, additional CCMS equipment and support services will be provided for Space Shuttle operations at Kennedy Space Center and Vandenberg Air Force Base.

CCMS is used to check out Space Shuttle. More than 1200 electronics racks and consoles have been produced for NASA and the Air Force for use at NASA's Manned Spacecraft Center, Kennedy Space Center, and Vandenberg Air Force Base.

The \$55 million follow-on contract brings the total CCMS contract value to \$134,787,000.

Work on the contract will be done at the new 47,000-sq ft facility at 8000 South Lincoln Street.

## Credit union to offer certificates of deposit

Small Saver Certificates of Deposit will be offered to Red Rocks Federal Credit Union members beginning Monday, October 20.

The CDs will be available in \$1,000 denominations. One-year certificates will earn an annual percentage rate of 9.5 percent; two-year certificates have an annual percentage rate of 10 percent. Interest will be paid quarterly and deposited in the member's share account. Rates may change subject to board of directors action.

To be eligible to purchase a CD, a member will be required to have a \$500 share account balance.

Information about the CDs may be obtained from the credit union office.

## Scholarship application deadline set for February 15

The application deadline for Martin Marietta Foundation scholarships for sons and daughters of employees for the 1981-82 academic year is February 16, 1981.

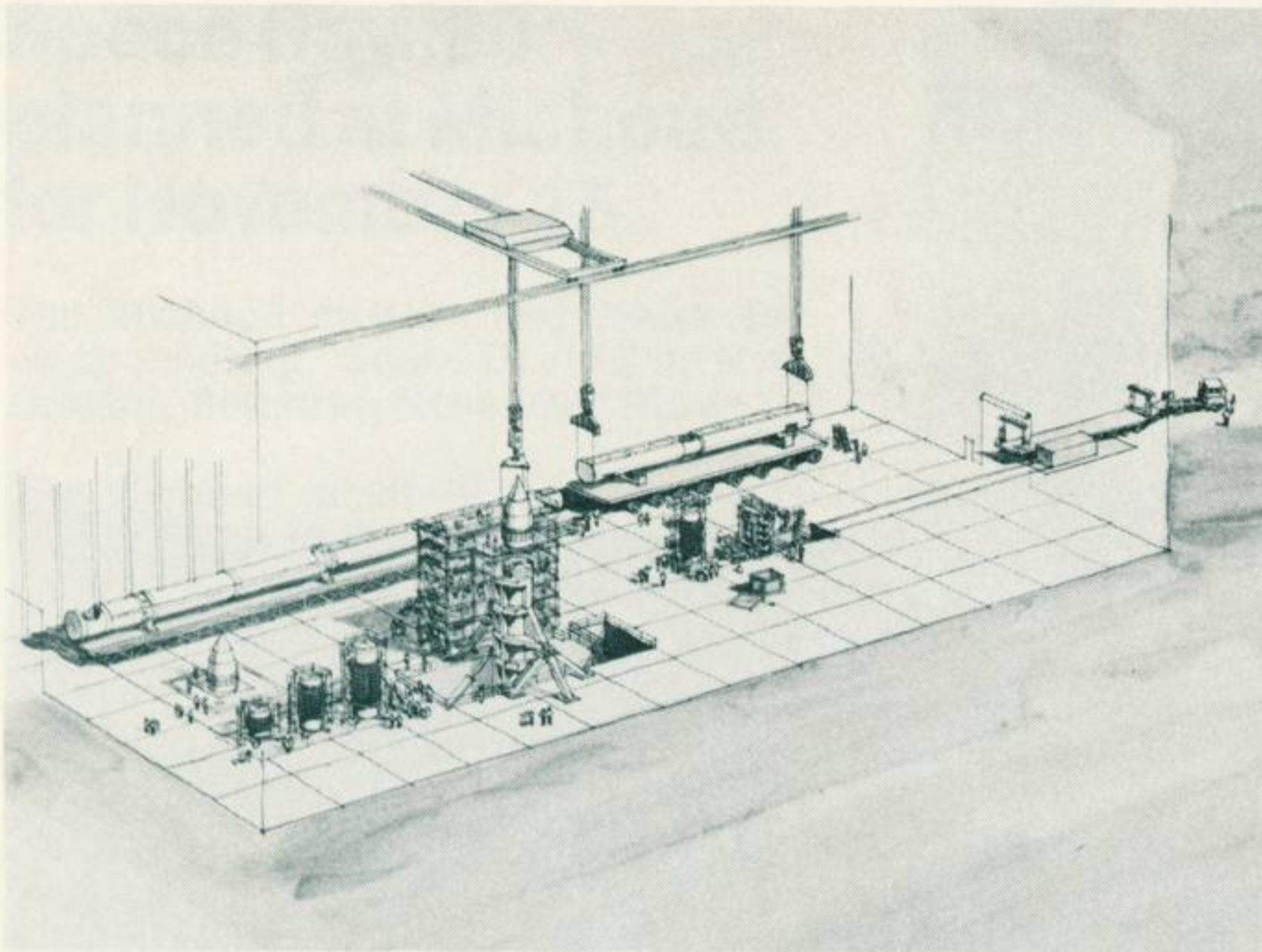
To be eligible, a parent of an applicant must have been a Martin Marietta employee for at least two years as of January 1 of the award year and be on the active payroll at the time of the award.

Applications for the \$2000 scholarship awards will be evaluated and winners selected by a committee of three per-

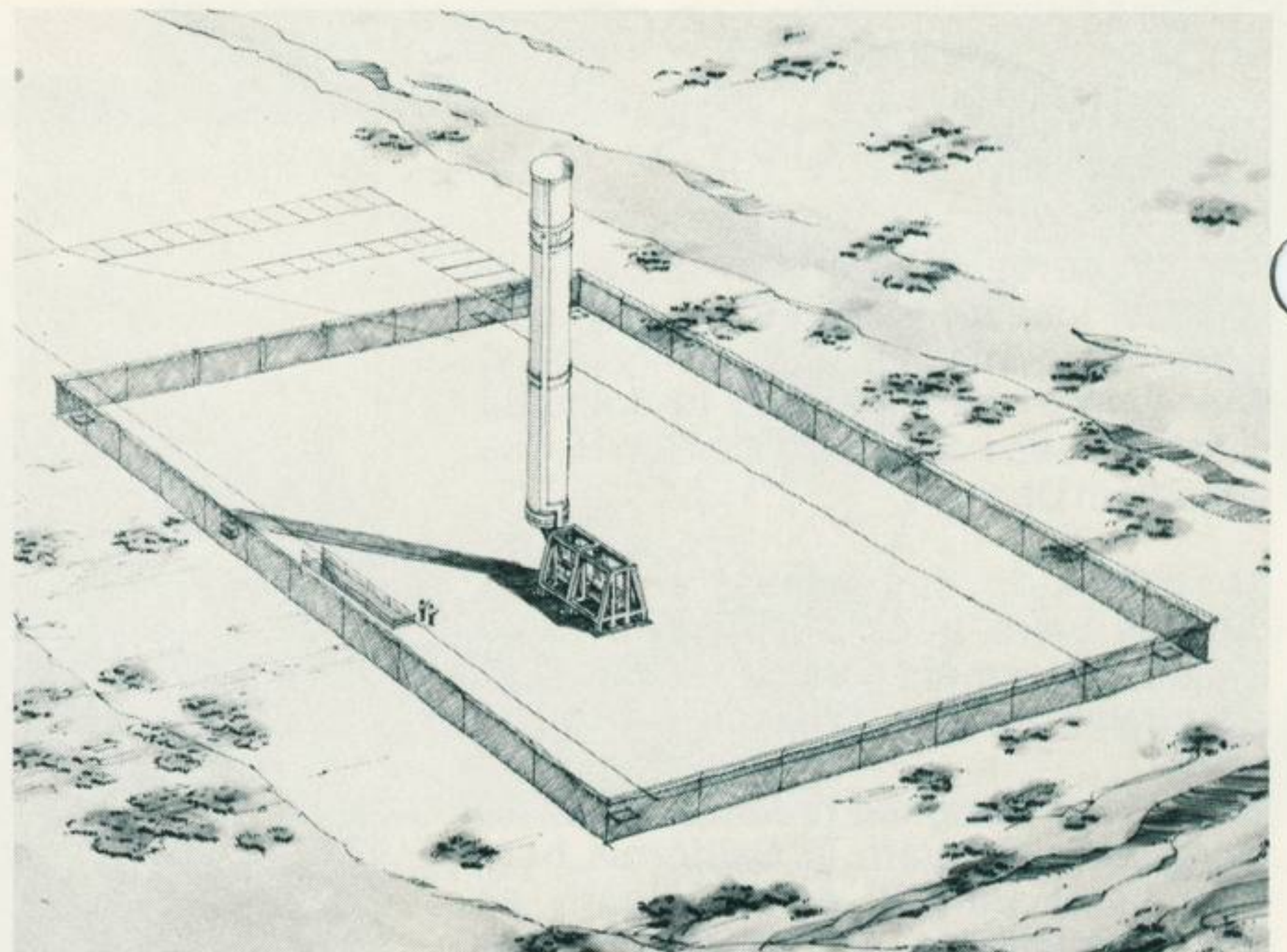
sons not associated with the company.

Members of the committee will be chosen by trustees of the Foundation from the academic and business communities. All applications and supporting evidence as well as correspondence should be sent directly to the committee.

Application forms and information about the scholarship program may be obtained from R. W. Walker, training, education, and employee development, engineering building 240, ext. 3395 in Denver.



This artist's concept shows the stage-by-stage assembly of an MX missile inside the missile assembly building at Vandenberg Air Force Base, location of flight testing of the missiles. As the stages are assembled, the canister is added around them; then the completely encased missile is attached to the launcher (in the background). A similar structure will be used for assembly of the missiles in the systems deployment area.



The first phase of flight tests for the MX missile beginning in 1983 at Vandenberg Air Force Base, CA, will be made from a test pad like this artist's concept. The framework provides support for the mechanism that elevates the encased missile. Beneath the pad are electronic control facilities. Later tests will be made from test shelters. Denver Aerospace, the assembly test and system support contractor for MX development, is responsible for planning, conducting, and evaluating the Vandenberg MX flight test program.

## 'Live here as you live at your home'

"If employees would just live in their work areas as they live at home, our cleaning problems would become more manageable and all work areas would be cleaner," says Robert H. Snodgrass, manager of operations, maintenance, and acquisition.

Snodgrass, who holds quarterly meetings with the janitors and has an open door policy for these employees, says janitors frequently file reports noting conditions in work areas.

"My people call my attention to trash on windowsills, cigarette butts on floors, wastepaper on floors, coffee and soft drink cups spilled, food in wastebaskets, dirty dishes in wastebaskets and stacked on desks and files, graffiti on restroom walls, and plumbing clogged by gobs of paper," said Snodgrass.

"We also find a variety of schedules, memos, and charts taped to module walls," he said. "When the tape is removed, it damages the walls. There is a policy prohibiting taping things to walls. We furnish bulletin boards for offices and labs where they are needed."

Snodgrass said employees can help keep facilities clean by simple actions. For example: Lids are available for beverage cups in vending areas. Put a lid on the container before throwing it away. Put wastepaper in the wastebaskets. Don't remove dishes from the cafeteria. Don't put leftover food in wastebaskets; dispose of it in containers for that purpose in the cafeteria. Use ashtrays for cigarette butts.

Janitors do not clean file cabinets or desk tops or windowsills. Employees should keep these surfaces neat and dusted.

"We attempt to keep the facilities clean," Snodgrass said. "Cleanliness makes for a healthier and safer work area. We would like for employees to help us by doing those things that tenants normally do. If employees would treat their work areas as they treat their home living rooms, we could do our jobs better and more efficiently."

## United Way coordinators meet; drive begins

United Way campaign coordinators for Denver Aerospace met October 8 to plan the 1980 fund drive. The drive began October 13 and will continue through November 7.

Coordinators will be asking employees to sign a pledge card indicating a contribution to support the work of the more than 75 member agencies of the Mile High United Way. Through the payroll deduction plan, contributions can be spread over the entire year. Contributions are tax deductible.

The 1980 drive begins with 75 percent of employees participating.

"For the past several years, we have exceeded 90 percent participation," said R. E. Burnett, professional and industrial relations director. "Our goal is to achieve that level."

Leroy Hollins is chief coordinator for

## Recreation

**Basketball officials:** Employees interested in officiating in the Denver Aerospace basketball league should contact the recreation office. A training clinic will be held if required.

**Discount offers:** A variety of discount programs for entertainment events, professional sports, restaurants, and merchandise purchases are available from the recreation office.

the campaign.

Department coordinators include:

Anthony N. Catrine, Geneva R. Purdy, Horace W. Clair, David Prince, Thomas D. Hohman, Kathryn L. Homer, Jerry L. Crawford, M. Nadine Holder, Kenneth E. Sedlmayr, Beverly J. Thompson, Andrew J. Kancir Jr., John Hannigan, Daphne R. Gillison, Marie A. Stumpf, Kathy Millian, Kathy Hrouda, Patricia A. Clark, Faye McGee, and Raymond D. Fallon Jr.

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## Offsite employees hold family days

Denver Aerospace employees at out-of-state locations have recently participated in picnics and family days. The events were planned to coincide with the open house and the Red Rocks concert in Denver.

At Michoud, employees and their families were guests at Pontchatrain Beach amusement park. More than 6000 attended the event.

Employees assigned to support the external tank program in California held their "first annual" picnic. Nearly all the 34 members of the quality and material procurement teams attended with their families.

Those working at Cape Canaveral and Kennedy Space Center held a family picnic with more than 1000 persons attending. Represented were external tank operations at Cape Canaveral Air Force Station; command, control, and monitoring subsystem; ground support systems and solid rocket booster decelerator subsystems operations at Kennedy Space Center; the Aerospace marketing office in Cocoa Beach; and about 50 employees on temporary duty from Michoud division.

## Publication awards deadline is set

The publication awards committee has set January 5, 1981, as the entry deadline for evaluation in the Denver Aerospace awards program.

Eligible papers may be submitted at any time up to the deadline. Entries must be submitted in 10 legible copies and be accompanied by a completed publication awards entry form.

Forms and information may be obtained from R. W. Walker, training, education, and employee development, ext. 3395, mail no. 6360 (engineering building 240).

To be eligible for an award, the article must have been published between January 1 and December 31, 1980. Signed articles appearing in professional, technical, or trade periodicals, journals, books, papers, or bound proceedings may be submitted. Publications must be related to the author's professional functions in his assigned duties.

Entries will be evaluated on the basis of creativity, quality of content, benefit to the company, and mode of expression.



Vernon L. Dunn, Denver Aerospace manager for DOD/STS ground support systems facilities, right, and Roy Graffham, The Ralph M. Parsons Company GSS construction surveillance manager, check construction progress of solid rocket booster and main engine exhaust ducts. The Space Shuttle launch pad is under construction at Vandenberg Air Force Base.

## Softball team ends season on top at KSC

The "MMC ETs" representing the division's external tank operations at Kennedy Space Center, finished the 1980 softball season with a 10-5 record. The "ETs" competed against teams from NASA and other aerospace contractors.

Team members were:

Lester R. Tribout, James W. Rudolph, Patrick Gibbons, Carl C. Fischer, William S. Prewitt, Temple R. North Jr., Thomas W. Goodwin, Clive A. Arlington, Jack B. Rucker Jr., Juan M. Ramirez, Fred J. Kienitz, Jean-Paul Paille, Basil J. Morin Jr., William J. Enos, Paul V. Davidson, Timothy R. Seymour, Carl T. Housman, Daniel W. Rexroad, Douglas M. Powell, and Sheldon W. Brown.

## Corporation awards contract for communications network

The Martin Marietta Corporation has awarded a \$2 million contract to Plantronics/Action of Dallas to provide computerized switching equipment for a new telecommunications network.

When the equipment is installed and the network operating, any Martin Marietta telephone, nationwide, will be accessible by dialing a seven-digit code. Telephones outside the network will be accessible by dialing 10-digits—the area code plus the standard seven-digit number.

## Construction continues for GSS facilities

Basic construction is progressing at Vandenberg Air Force Base on facilities for the Denver Aerospace ground support system for Space Shuttle. Under construction are the orbiter maintenance and checkout facility, the launch pad, and the launch control center.

At the checkout facility, 12,930 cubic yards of soil and shale have been moved and 1031 cubic yards of concrete poured for the base slab. Concrete walls have been poured; caissons constructed; solder beams and piles laid; and a 120-foot long, 10-foot diameter, 16-foot deep multiplate steel instrumentation tunnel completed. Orders have been placed for 5-, 10-, 15-, and 60-ton cranes as well as 1600 tons of structural steel.

About 3500 cubic yards of the total 103,000 cubic yards of concrete have been poured at the launch pad. Two cryogenic vessels for liquid hydrogen and liquid oxygen—850,000 gallons and 300,000 gallons respectively—are nearly complete.

A control center, built by Martin Marietta for the manned orbiting laboratory more than a decade ago, is being modified for the launch control center. Necessary demolition has been completed and an additional 8200-square feet foundation has been started.

## Space Day '80 planned at Michoud for November 15

The Michoud division and NASA are co-sponsoring "Space Day '80" in New Orleans, Saturday, November 15.

The Michoud facility will be open exclusively for Michoud employees and their families from 8 am to 10 am. Free coffee and donuts will be provided in the building 102 cafeteria.

Photographs of employees and their families will be taken and given free as souvenirs.

The facility will be open to the public from 10 am until 4 pm. A number of NASA and Martin Marietta space-related displays will be exhibited and films will be shown continuously at two locations. A ceremony featuring NASA and local government officials will be held at 11:30 am.

The tour route will lead visitors through building 103, the new high bay addition, and the vertical assembly building. Guides will be available at various points along the tour to explain the external tank manufacturing process. The tour will begin at the rollup door on the north corner of building 103.

Visitors using wheelchairs may park just outside that door.

Cameras will be permitted at the open house and smoking will be permitted except in the vertical assembly building.

## Michoud gets Shuttle vehicle study contract

The Michoud division has been awarded a study contract to assist the National Aeronautics and Space Administration (NASA) in developing design concepts for a Space Shuttle-derived launch vehicle.

During the next 18 months, Martin Marietta will work with NASA to define space mission and technology requirements, produce conceptual designs, and determine the economic feasibility of a more powerful space booster system.

The \$600,000 contract was awarded by NASA's Marshall Space Flight Center, Huntsville, AL. The work will be done by the advanced programs department at the Michoud division.

NASA projects that, in the 1990s, a space launch vehicle capable of carrying more than 100,000 pounds of cargo per flight will be needed. The Space Shuttle can carry 65,000 pounds. The launch vehicle concepts to be studied



Michoud division group engineer James B. Beal evaluates deep eddy current equipment on a typical external tank tapered thickness weld.

## Employee completes research program

Finding microscopic cracks and flaws in the 912 meters of welds on the external tank for Space Shuttle is an exacting task. Michoud division employee James B. Beal recently completed an extended program with the National Bureau of Standards (NBS) to increase his knowledge in this vital area.

The research associate program of the NBS is designed to increase the ties between private industry and government research, while improving the non-destructive evaluation techniques so critical to the aerospace industry.

Using high frequency sound waves, electrical currents, or X-rays, these non-destructive evaluation techniques

examine the soundness of materials or manufactured parts without destroying them.

As part of the research associate program, Beal, who serves as principal researcher of the development of rapid production inspection systems at the Michoud division, spent eight months in Gaithersburg, MD, studying the eddy current inspection method on welds up to 0.250 inches thick. The eddy current technique relies on changes in the material's electrical conductivity to detect flaws such as cracks, porous areas, or lack of fusion in the weld.

Electrical currents are passed through coils into the metal being tested, creating magnetic fields. Flaws or cracks in the surface of the metal will create variations in the magnetic fields generated by the eddy currents.

Since he did not have basic research funding, Beal examined used, existing equipment for his needs.

"I'd take a piece of equipment off the shelf and see if it fit our requirements," he said. "However, more often than not, I determined what wouldn't work."

Although X-rays and ultrasonics are widely used, no one method of inspection answers every question. The eddy current technique, Beal said, will complement, not replace, other methods.

"Ultrasonics are effective for showing surface or external cracks," he said, "but X-rays are best for checking porosity."

The eddy current doesn't require a liquid coupling like ultrasonics or the extensive use of X-ray film.

"We're still a few years away from eddy current practicality," Beal concluded, "but with the help of microcomputers and processors to interpret the readings, things do look promising for the future."