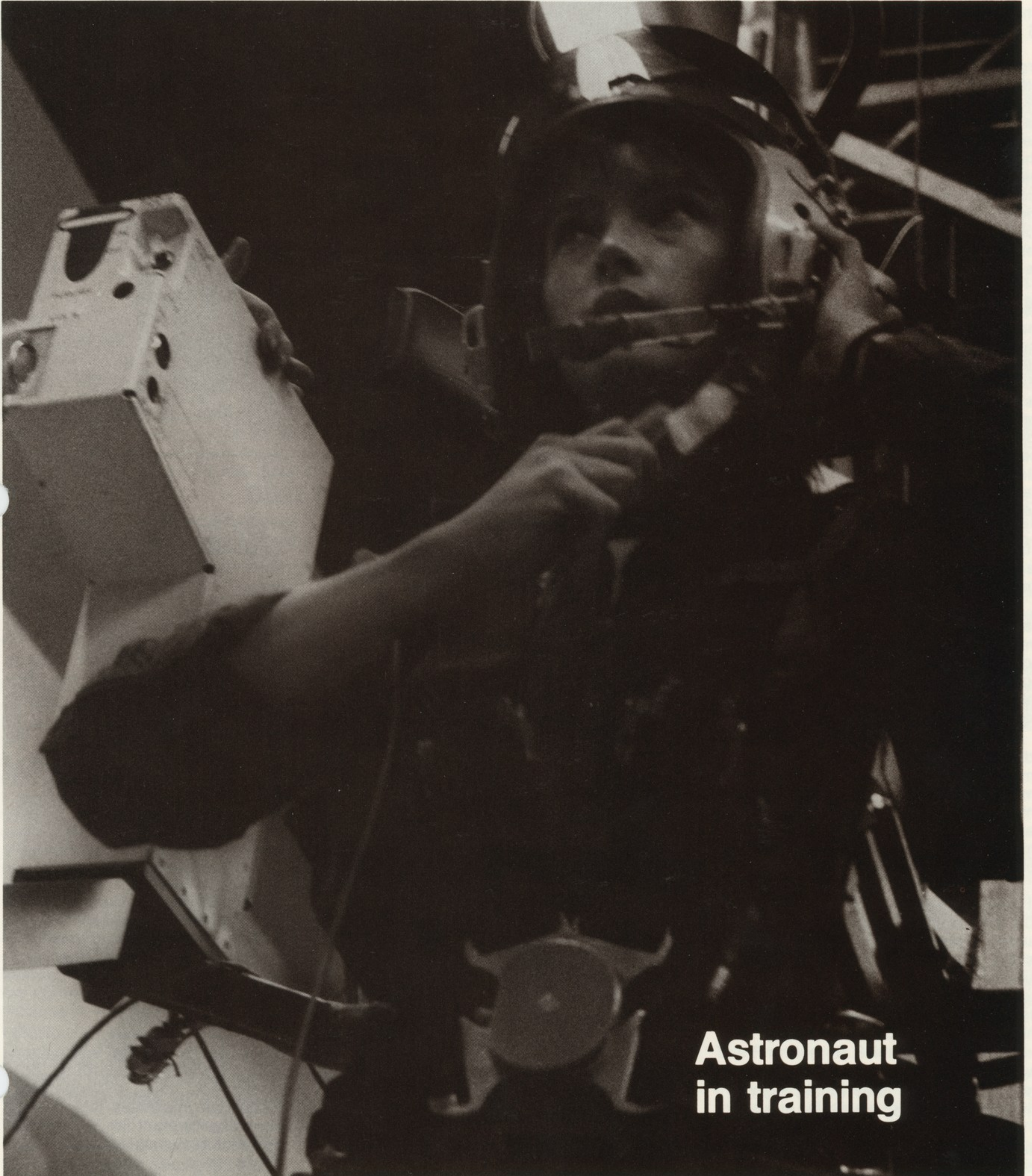


MARTIN MARIETTA

news

DENVER DIVISION

NUMBER 9/1980



**Astronaut
in training**

July 26 open house to feature company AIAA exhibit

Descriptive graphics and working models of the division's more futuristic projects, featured first at the 1980 American Institute of Aeronautics international meeting in Baltimore, will be on display for employees and their families at the July 26 division open house.

Projects to be displayed include the tethered satellite that will permit scientific studies at altitudes previously inaccessible to certain types of satellites; the manned maneuvering unit for Space Shuttle astronauts; models of 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 film will be seen in the exhibit's theater depicting major programs of Martin Marietta Aerospace.

Major buildings will be open during the event, with the main tour planned for the factory and the electronics manufacturing facility. Some buildings will be open only so employees may show individual work areas.

Admittance to the open house will be by employee badge, with at least one employee accompanying each vehicle entering the main gate. Special access passes will be issued to families of employees required to work the day of the open house.

All visitors will park in lots across from the RDL and engineering buildings. Special parking arrangements are available for visitors using wheelchairs. Vehicles carrying wheelchairs should go directly to the north door of the factory. It is suggested those using wheelchairs visit only the second floor of the factory.

Free cold drinks will be provided for visitors at the north door of the factory. There will be no food service for visitors.

Cameras will not be permitted at the open house. Visitors are asked not to smoke along the tour route.



The Martin Marietta Aerospace exhibit recently on display at the AIAA Global Technology 2000 international meeting will be a featured exhibit at the division's open house July 26.

Open house tour schedule

Employees are encouraged to bring their families to the open house during the hours suggested.

Work Areas Suggested Tour Hours

Factory Cafeteria	8 am
Inventory GPL VTF Vibration and Acoustics Lab	9 am
EMF Engineering building	10 am
Administration building RDL SSL	11 am
DSC West Point CCMS	12 noon
SSB Greenwood Plaza	1 pm
Greenwood Commons	2 pm
All others	3 pm

Employees working at the main facility may visit their work areas — except those listed as off limits — in accordance with schedules established by their supervisors.

Employees working at offsite locations may visit their work areas between 9 a.m. and 11 a.m.

Areas closed to visitors during the open house include:

Inventory building: GFP stock room; inventory stores; plastic lab; chemical storage lab; and bionic building.

Administration building: All secured areas; computer center.

Engineering building: All secured areas.

RDL: All secured areas: All labs (may be viewed from hallways).

GPL: All labs (may be viewed from hallways); storage areas.

Factory: Chem mill; heat treat; vertical weld pit area; mezzanines.

EMF: All secured areas.

SSB: High bay areas; second floor clean rooms; secured areas.

Hydrostat building: First floor and basement.

Other areas closed to visitors: boiler house, garage, waste treatment, transtainer building, cold flow, Y-lot, liquid hydrogen lab, hazardous materials lab, propulsion development lab, VTF, vibration and acoustics lab, and the antenna range.

Employees can claim \$1 million in referral program

Based on the remaining 1980 personnel requirements, employees are eligible to claim almost a million dollars in awards under the improved employee referral program, said R.E. Burnett, director of professional and industrial relations, in a recent letter to all employees. The letter accompanied a packet mailed to employees to encourage and assist them in recruiting new employees.

One employee also will receive a two-week fully-paid vacation for two in Hawaii.

For each candidate referred and hired, employees are eligible for:

- \$1,000 for each placement in salary grade 43 and up. For every fourth placement, there is a \$1,000 bonus. Placements since the start of the program will count toward the bonus. For example, an employee who had three or more placements on May 23 will receive \$2,000 for the next placement.

- \$300 for each placement in salary grade 41, including new college graduates. Non-exempt salary and hourly skills defined from time to time as critical are covered. Every fourth placement will earn \$300.

- A year-end drawing will be made from names of new employees. The employee who referred the new employee whose name is drawn will receive a two-week all-expense paid trip for two to Hawaii with time off with pay.

Questions on the referral program can be directed to the staffing department, ext. 530 at the DSC.

Recreation

Ridge Riders Club: An open O-Mok-See will be held at the Ridge Riders arena August 2. Registration is at 5 pm with events beginning at 6 pm. Employees, families, and friends may participate. Belt buckles and ribbons will be awarded in pole bending, keyhole, flag race, barrel, and a special event. To reach the arena, take the last dirt road before the turnoff to the division's recreation area. For information, call Jack D. Swickard, ext. 4836, or David H. Julseth, ext. 277.

Photo Club: First dinner meeting of the club will be held Thursday, July 17. There will be a slide presentation on the use of the Kodak Master Photoguide. Winning entries in the club's first photo contest will be displayed. For reservations, call Connie M. Beall, ext. 6422.

Bridge Club: The club meets the second and fourth Thursday of each month in the DSC cafeteria at 7 pm. Players should bring equipment for either duplicate or social bridge.

Comets Volleyball: July 12 and July 24 are Martin Marietta nights at Denver Comets professional coed volleyball games. Discount tickets may be purchased at the recreation office.

Denver Bears: Two Martin Marietta nights at Denver Bears baseball games have been set for August 2 and August 17. General admission tickets are \$1.00. The tickets are worth \$2.50 toward the purchase of reserved grandstand or box seat tickets. Tickets are available at the recreation office.

Employee survey delayed; forms ready in August

Distribution of survey forms to the division's nearly 10,000 employees at all locations has been delayed from early July to mid-August because of a printing problem. The forms are being prepared and printed by a midwest firm that will also receive and process the completed questionnaires.

All employees will be asked to complete the questionnaire to provide management with information that will aid in day-to-day operations, problem-solving, and planning.

Employee views are significant. The opinions expressed through the survey can help the division keep pace with its rapidly expanding, and more complex, business.

Employees, whether recently hired or senior, more experienced workers, are valuable sources of information, impression, and suggestions. The questionnaire will tap these sources.

Results of the survey and actions planned will be communicated to all employees.

When forms are distributed, employees will be asked to take them home, find a quiet block of time, and complete the entire questionnaire at one sitting. The answers are then to be mailed in the envelope provided to the outside computer service, thereby preserving the anonymity of the respondent. Responses will be analyzed so data will reflect group and not individual results.

Cement company has new division

Martin Marietta Cement has announced the administrative realignment of its midwestern and mountain state's operations with Eric H. Sundquist as president of a division to be headquartered in Utah where the company recently broke ground for an \$85-million cement plant.

Sundquist, 39, will establish headquarters in Salt Lake City for the new Mountain division, which will include two plants — the new 650,000-ton facility near Leamington, in southern Utah, and an existing 450,000-ton cement plant at Lyons, Colorado.

The Northern division at Davenport, Iowa, headed by E.E. Seyfried, will be renamed the Midwest division and will include existing facilities in Iowa, at Tulsa, Oklahoma, and a new plant to be completed in 1981 near Davenport.



1979-80 Junior Achievement advisors were honored by Division management at a breakfast recently in the executive dining room. Those attending were, seated, left to right, Beverly Thompson, Mary Hinsey, and Barbara MacDonald; standing, middle row, Richard T. Mason, Dennis Shaw, Gerald Klein, Lyle Graff, Robert Stanford, and Robert Rodriguez; back row, John McCorkle, C.B. Hurtt, Wallace E. Goodwin, Robert D. Terrazas, Thomas Cook, Robert J. Ancell, Dominic Verrastro, and R.E. Burnett.

Titan safety program works for GSS project

A safety program that has resulted in more than 11 million man-hours of work on Titan launches without a serious incident is being applied to the ground support system (GSS) project at Vandenberg operations.

During the 11,400,000 man-hours (14 years), 76 Titan III vehicles have been successfully launched from Vandenberg Air Force Base. Each launch involved handling of ordnance, toxic rocket fuels, cryogenics, and other potentially hazardous materials. The safety record was achieved because of a program developed and implemented by the division at the inception of the Titan project.

The safety program, using existing systems management concepts and data processing programs to track potential hazards, is being used on the Space Transportation System ground support systems. A system safety engineer has been assigned to each system design team and to each station-set facility, making safety an integral part of the design process.

To meet program needs, the safety organization is staffed with mechanical, electrical, chemical, and industrial engineers. Goal of the GSS safety engineers is to assure safety by design for Space Shuttle operations with improved systems and facilities and the reduction of the need for operational constraints or precautions.

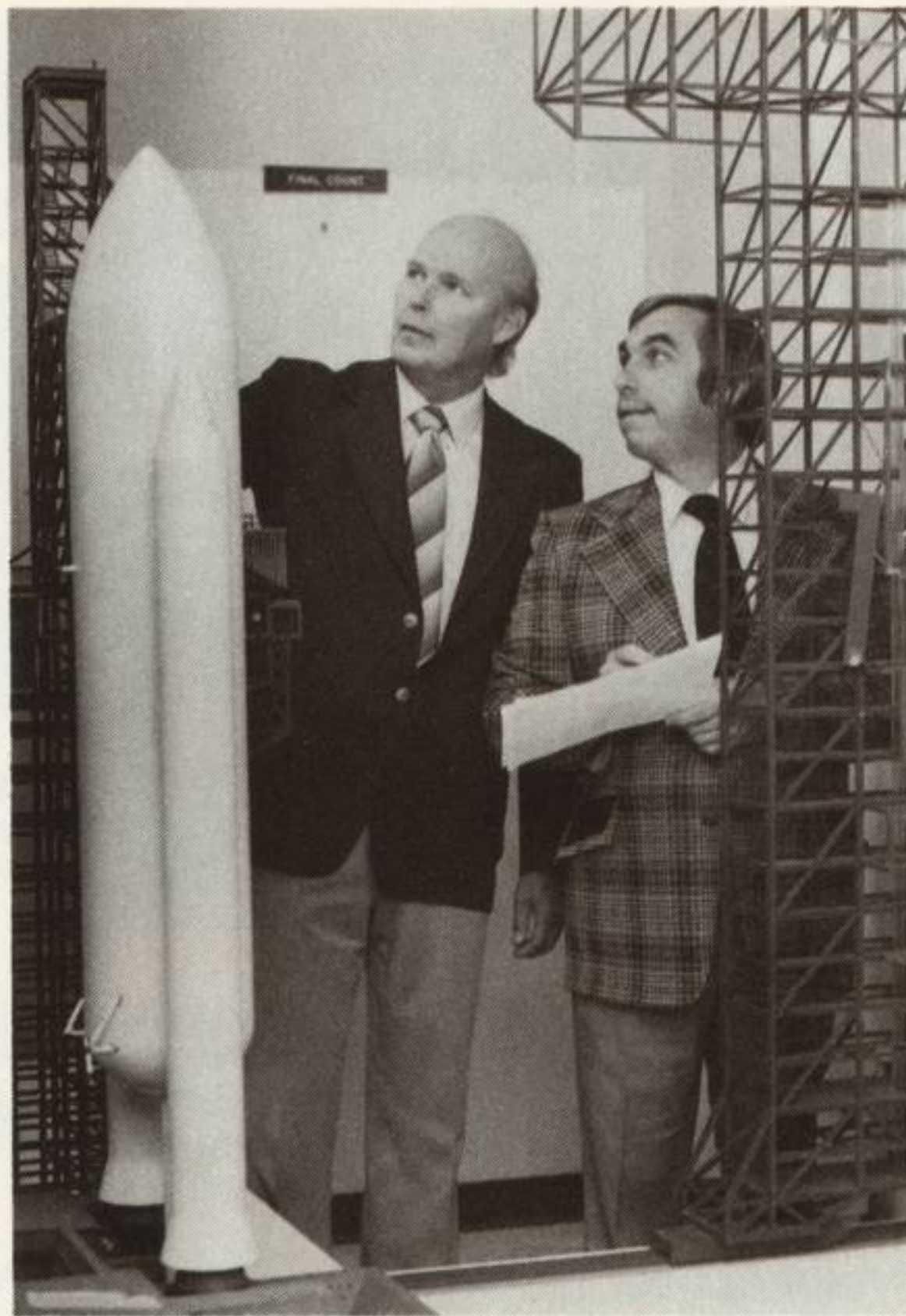
The "will to find a way to do it safely" has been a major contributor to GSS program progress.

Payroll deductions are authorized for KSC credit union

Martin Marietta external tank operations employees at Kennedy Space Center may now authorize payroll deductions for savings deposits in the Kennedy Space Center Federal Credit Union.

Employees must be credit union members before deductions can be made and they must deal directly with the credit union to arrange automatic deductions from savings to repay loans.

Authorization forms are available at the personnel office, room 3018 in the O&C building. The forms will be mailed to employees who call 867-7074 and request them.



A scale model of the Space Transportation System launch pad is used to discuss program safety by Burt T. King, left, Vandenberg operations chief of safety, and Charles W. Mertz, right, ground support system safety program engineer. The division-built external tank is shown with the solid rocket boosters attached.

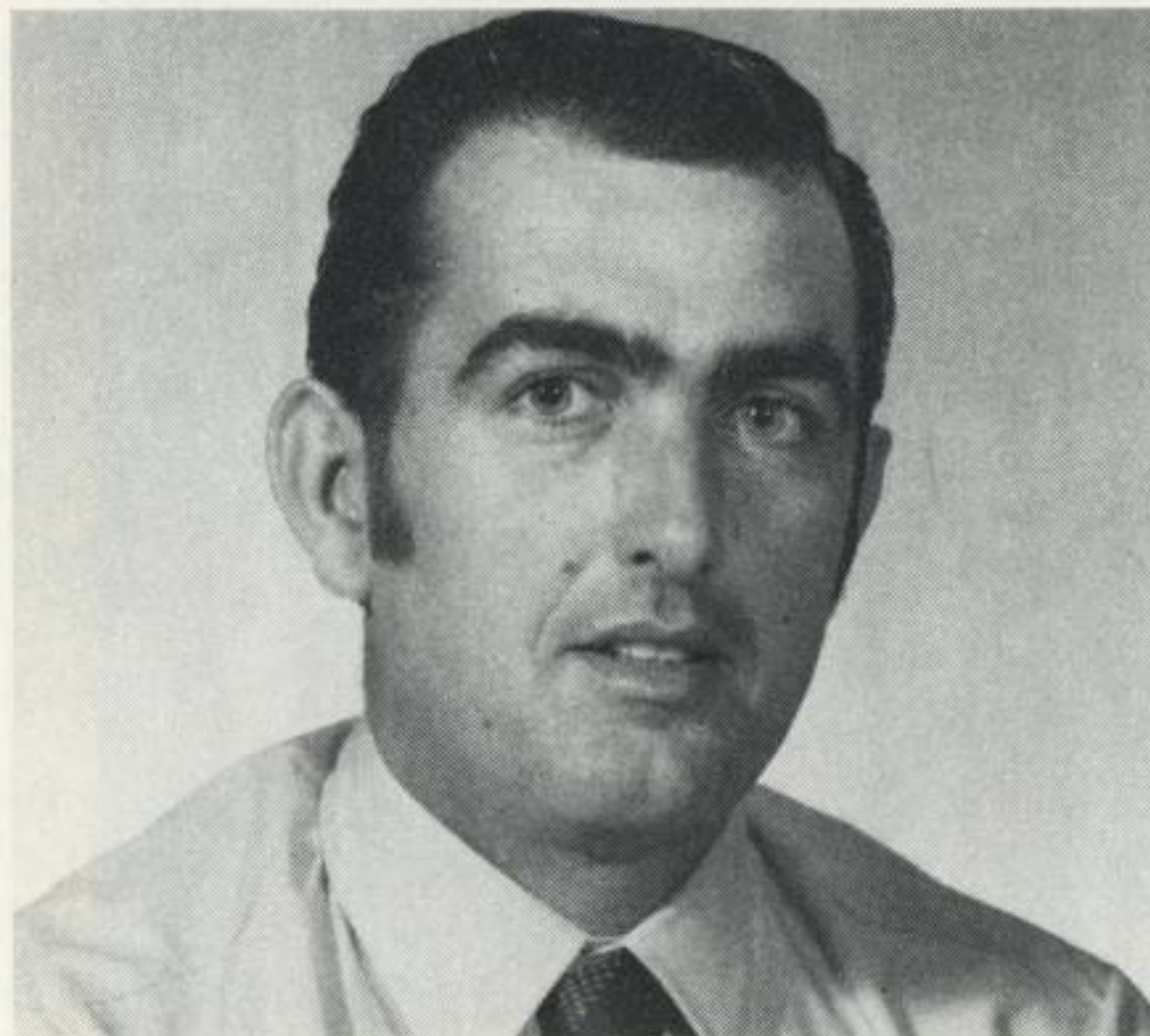
Employee to head professional group

Howard C. Robbins has been named president of the Cape Canaveral chapter of the American Society of Safety Engineers for 1980-81.

Robbins, supervisor of safety engineering for the division's external tank operations at Kennedy Space Center, has been with Martin Marietta five years.

He served as vice president in 1979-80 and succeeds Stephen S. Tucker, chief of quality, reliability, and safety for external tank operations.

Members of the society are professional safety employees of government agencies and contractors in Brevard County, including Cape Canaveral Air Station and Kennedy Space Center.



Howard C. Robbins

Proposal requests expected for MX energy systems

A series of requests for proposals for renewable energy systems for MX ground facilities and associated equipment is expected about mid-July.

The proposals will be for study contracts on solar thermal, photovoltaic, geothermal, and wind as sources of power to support MX.

It is anticipated study contracts will be awarded for three programs. One will be to supply power to a single shelter; a second for power to a cluster of shelters; and the third for operating base power.

The 15-month contracts will be for conceptual design work and perhaps for some preliminary design work on each program.

The division's solar thermal central receiver group under Thomas R. Heaton will prepare proposals for the shelter cluster and operating base power supply. The solar photovoltaic group headed by John Sanders is expected to seek work on the single shelter system and perhaps on the shelter cluster.

Art museum sets Martin Marietta days

The Denver Art Museum has set July 12 and July 19, both Saturdays, as Martin Marietta Days. On those days, special tours are planned for employees in appreciation for a Corporate gift that made possible a showing of master drawings and watercolors.

The exhibit, "Master Drawings and Watercolors of the Nineteenth and Twentieth Centuries," is from the Baltimore Museum of Art. It features works by Van-Gogh, Cezanne, Degas, Cassatt, and Daumier, as well as contemporary pieces by Oldenberg, Kelly, Rauschenberg, and Johns. Eight Picasso and five Matisse works also are included.

The Denver Art Museum will host the exhibit from July 12 and August 24. The museum is open Sunday from 1 p.m. to 5 p.m.; Tuesday, Thursday, Friday, and Saturday from 9 a.m. to 5 p.m.; and Wednesday, from 9 a.m. to 9 p.m. It is closed Monday.

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CCMS to move; division adds new facilities

The check out, control, and monitor subsystem (CCMS) program will begin a move to new facilities in mid-July. The move is expected to be complete in mid-August.

The move to leased facilities at 8080 South Lincoln Road in the Broadway Industrial Park will bring together employees and equipment that have been in three facilities on Federal Boulevard, Caspian Way, and Shoshone Street. Approximately 225 employees will work in the new 47,000-square-foot facility.

CCMS equipment will be used to manage all Space Shuttle ground activities up to the point of liftoff.

MARTRON manufacturing will be housed in the new facility. MARTRON is automatic test equipment for avionic systems.

E.F. Haeger directs the ground electronics production group responsible for CCMS and MARTRON.

In other facilities developments, ground has been broken for a new building north of the SSB; work is progressing on the addition to the Denver System Center; and the ACS lab expansion has been completed.

Leases have been signed on 13 buildings in Greenwood Commons and options



Ronald W. Graese, left, and Ronnie L. Campbell, right, are shown mixing a modified ablator material that may be used for in-flight repair of Space Shuttle ceramic tile. The men have received a new technology award for their work on the modification.

have been taken on up to 200,000 square feet of space in buildings yet to be built at Greenwood Commons.

A one-year lease for temporary use of office space at Cinderella City has been signed.

It is anticipated Denver Data Systems will soon complete leases for offsite space.

Moves of employees will continue throughout the year based on project space requirements.

Employees earn technology awards

Fifteen employees have been named by the division new technology evaluation committee to receive cash awards for their new technology disclosures submitted as the result of work on NASA contracts.

Employees and their disclosures:

Matthew S. Imamura and Robert L. Moser, electronics: Automated techniques or monitoring and controlling photovoltaic/battery power systems.

Ralph N. Eberhardt Jr., John P. Gille, and John S. Marino, engineering mechanics: Composite trunnion support system for cryogenic tank assembly.

Wayne E. Simon, engineering mechanics: Aspirator to prevent tank screen device dryout.

Ernest G. Littler, engineering mechanics: Applicator/mixer self-contained unit and three-part unit.

William C. Croucher, electronics: Stress relief of large volume high voltage encapsulants.

Ronald W. Graese and Ronnie L. Campbell, engineering mechanics: Thermal protection system flight repair cure-in-place material.

Donald S. Crouch, engineering mechanics: Universal planetary surface sample acquisition system.

Peter W. Abbott, Charles W. White, George Morosow, and Bruce D. Maytum, engineering mechanics: Analytical methods for freight car/truck dynamic problems.

Students named for Frontiers of Science

Two area high school students are attending the 1980 Frontiers of Science Institute this summer at the University of Northern Colorado under scholarships from the Denver division.

Selected for the program were Nancy Ondrake of Heritage High School, Littleton, and John Bishop of Lewis-Palmer High School, Monument.

The Frontiers of Science Institute is designed for high school juniors who have interest and aptitude in science. The activities are selected to give students a better understanding of the nature of scientific investigation, some of the problems and limitations, and to encourage them to continue with advanced study and career in science.

On the cover

Astronauts use simulator

Dr. Anna L. Fisher, one of the first six female astronauts, was at the Denver division recently for training on the space operations simulator developed to train astronauts in the operation of the manned maneuvering unit. In the training, astronauts simulate missions against a full-size mockup of a portion of the underside of the Space Shuttle orbiter.

In the photo at the right, Astronaut S. David Griggs is shown in training. The hand controls of the simulator are like those of the MMU. Manipulating them allows the astronaut to move in three directions as well as pitch, yaw, and roll.

Before the training began, the simulator was certified by NASA as safe and ready for astronaut training.

Other astronauts participating in the training were Bruce McCandless II and Dr. William B. Lenoir.



Credit union is chartered at Michoud

A credit union for Michoud operations employees and their families has been chartered by the state of Louisiana.

Employees may now deposit a portion of their earnings automatically into a high-interest, insured savings account and soon will be able to borrow funds at lower interest rates than might be available from other sources.

Initial membership drive for the Martin Marietta Michoud Operations Credit Union has been completed, but interested employees may join by contacting any member of the organization's board of directors.

Interest on savings, called dividends, will be paid semiannually. The rate will be determined by the credit union's board of directors and will depend on the amount of money remaining after expenses.

Loan applications will be accepted in mid-August, with interest rates determined by the directors. Rates will vary according to type of loan.

Officers of the employee-operated credit union are Ray C. Koch, president; Larry L. Hansen, vice president; Richard E. Lee, treasurer; and Jack L. Macy, secretary. Peter L. Hinkeldey is a board member along with the officers.

Serving on the supervisory committee are Harold A. Foley, Venita J. Johnson, and Daniel J. Wunderlich.

Members of the credit committee that will review applications are Gene Fletcher, Shirley Kirk, and Wilhelmina Boutte.

Clyde E. Schultz and John Klinger are serving on the education committee.



The Schmitts relax.



Wayne E. Wright, left, is sworn in as an Urban League board member by Judge Revious O. Ortique Jr., an honorary member of the League.

Employee named to Urban League Board

Wayne E. Wright, a materiel specialist at Michoud operations, has been named to the board of directors of the Urban League of New Orleans. He has been a member of the League's advisory board and heads the Michoud operations minority subcontract program.

As a member of the board, Wright said he hopes to "elevate the status of the minority businessman, to make him more competitive in the business community.

"I would also like to help alleviate some of the social problems that exist in our community," said Wright, who is a New Orleans native.

Employee gives kidney to his ailing son

When Joseph K. Schmitt learned his son needed a kidney transplant and that he was a compatible donor, he had no doubt about undergoing the operation.

Schmitt, a lead quality control inspector for the division's external tank operations at Kennedy Space Center, gave one of his good kidneys to his 19-year-old son, Joseph.

The younger Schmitt had impaired kidneys as an infant, but had had no problems until two years ago when his kidneys began to deteriorate. For four weeks before the operation, the youth required dialysis twice a week at the University of Florida's Shands Teaching Hospital in Gainesville, 160 miles away.

The elder Schmitt, who has worked for Martin Marietta on such programs as Titan II, Gemini, and Skylab, has been with external tank operations for two years.

The transplant operation was May 6. The

Liquid boost module design changed; work continues at Michoud

Work on the liquid boost module (LBM), with a change in configuration, is continuing at Michoud operations. The LBM is a thrust augmentation device for Space Shuttle.

The LBM, which consists of four propellant tanks and two Titan-family liquid fuel rockets, would be attached to the base of the external tank. It is designed to increase the payload-carrying capacity of Space Shuttle from 24,000 pounds to 42,000 pounds when the vehicle is launched into certain orbits from Vandenberg Air Force Base in California. The first LBM-assisted launch is scheduled for 1986.

Richard C. Rozycki, LBM project manager at Michoud, said the LBM configuration was recently changed. The open-truss, bridge-like framework to tie together the various elements and attach the LBM to the external tank is being replaced by a shroud that encloses the supporting structure. The shroud prevents hot gas streams, or even burning exhaust streams, from damaging the structure.

Michoud operations is responsible for design and construction of the 28-foot diameter section of the shroud, an explosive separation device, and a final structural test of the complete module fastened to the aft portion of the external tank.

Michoud and Denver division engineers are continuing to define tooling and manufacturing requirements; to refine cost estimates; and to plan for long-lead procurement. They also have begun preliminary considerations of launch site accommodations.

Rozycki said LBM fabrication is scheduled to begin in 1983 for the 1986 flight and that existing tooling and facilities at Denver and Michoud will be used as much as possible.

father left the hospital a week later. The son stayed three weeks because of the possibility of rejecting his new kidney. He returned to his part-time job June 16. He still requires blood tests and weekly trips to Gainesville to insure acceptance of the new kidney.

The elder Schmitt requires a longer recovery and is expected to be back at work early in July.

The person who deserves the most credit, according to the senior Schmitt, is his wife, Janet. "Besides doing all the driving back and forth, she has had to put up with the two of us during our recovery.