

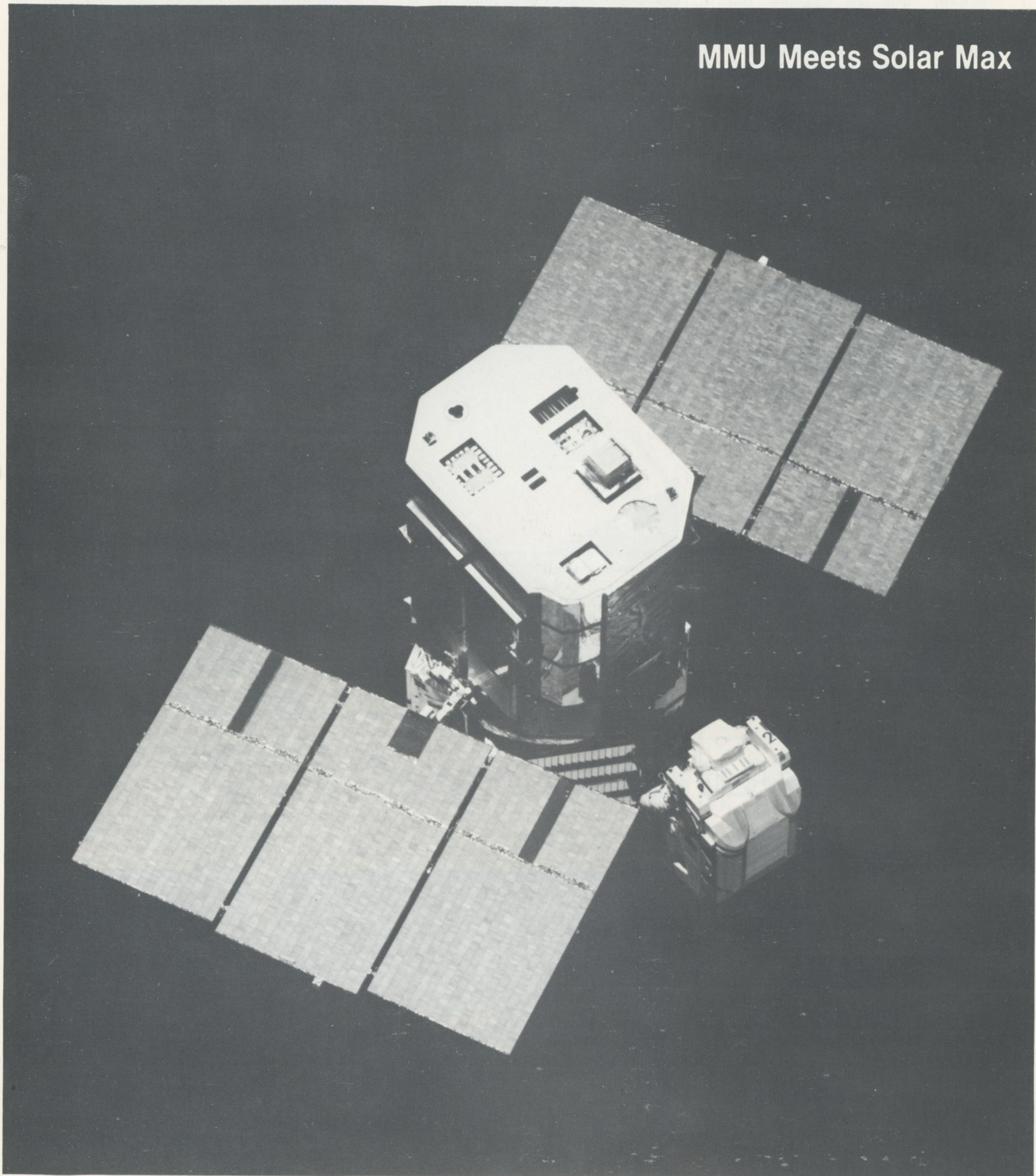
MARTIN MARIETTA

news

DENVER AEROSPACE

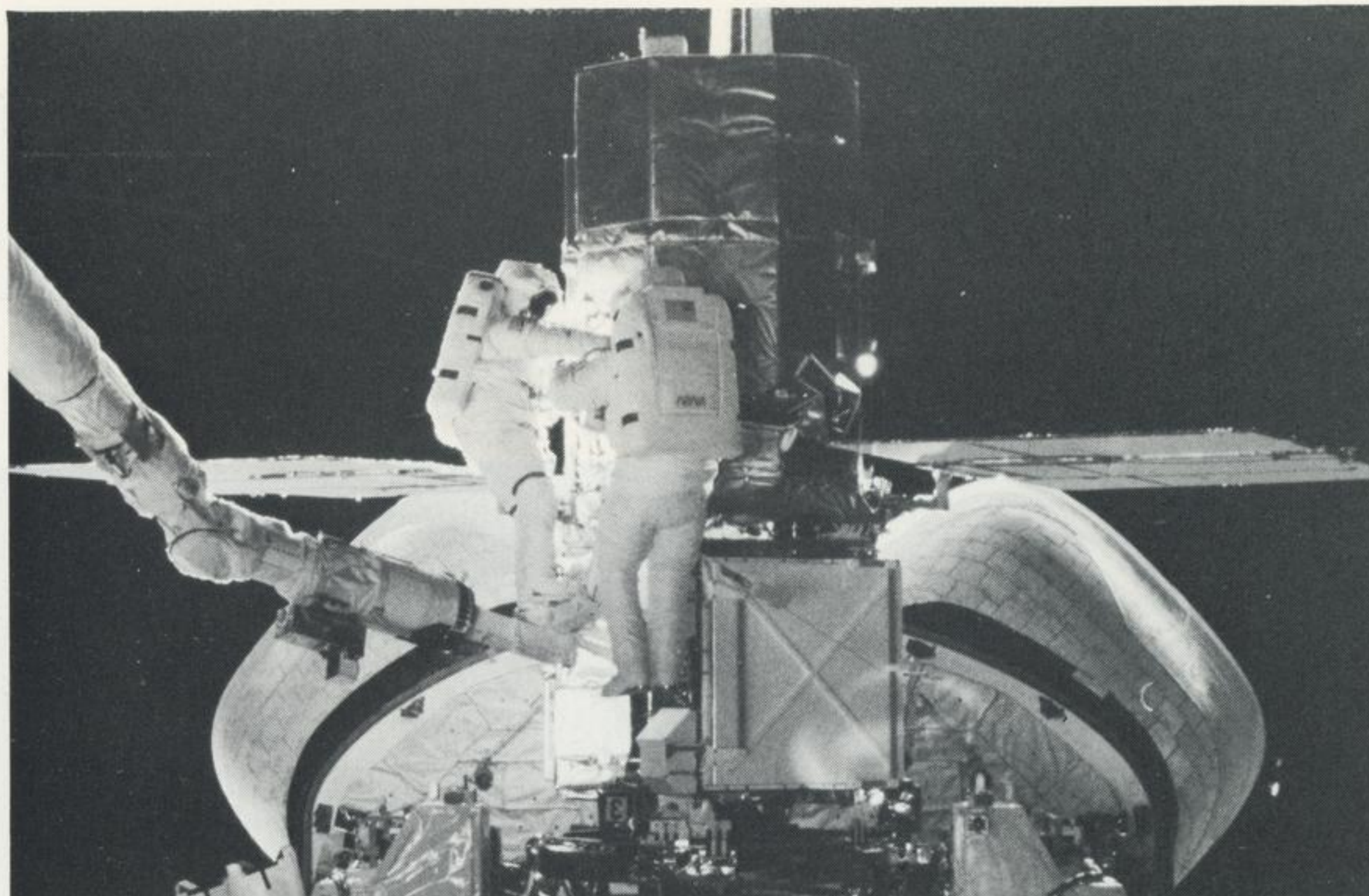
NUMBER 8/1984

MMU Meets Solar Max



On the cover

Astronaut George D. "Pinky" Nelson, wearing the Martin Marietta-designed manned maneuvering unit (MMU), makes the initial excursion to the damaged Solar Maximum Observatory Satellite on April 8. He used a trunion pin attachment device (TPAD) to attempt a "lock-on" with the satellite, but returned to the space shuttle orbiter Challenger when he was unable to complete the docking maneuver with the TPAD. The MMU's rendezvous docking capabilities, however, were judged a complete success. Days later, the spacecraft's remote manipulator arm was used to capture Solar Max and return it to Challenger's cargo bay where Nelson and James D. "Ox" van Hoften made the necessary repairs.



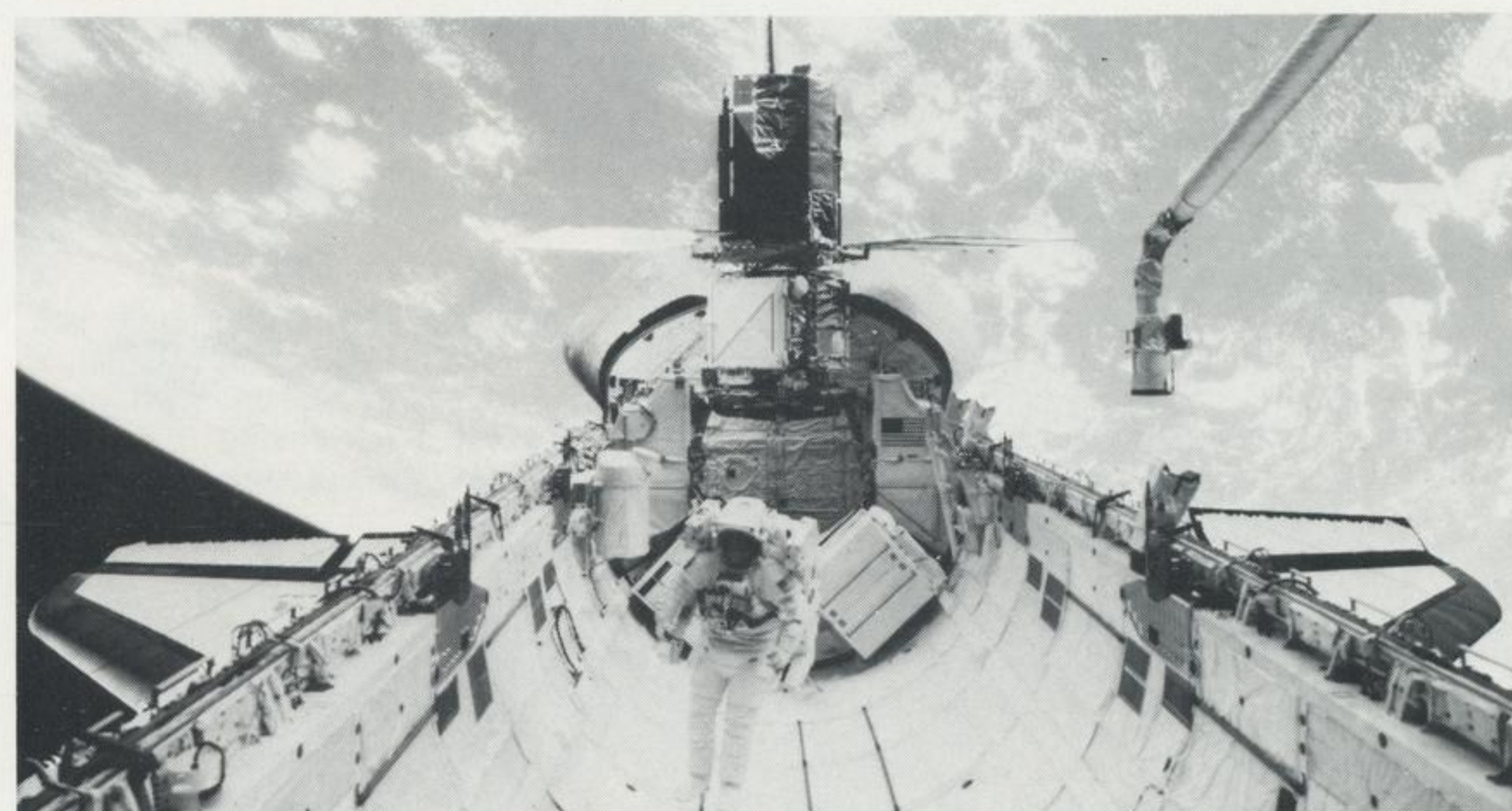
The two mission specialists, George Nelson, (right), and James van Hoften, share a repair task on the captured Solar Maximum Observatory Satellite in the aft end of Challenger's cargo bay. The astronauts used the mobile foot restraint and the remote manipulator system (RMS) arm as a "cherry picker" device for moving about. Later the RMS again lifted the satellite into space.

NASA announces appointments

The National Aeronautics and Space Administration has announced two major appointments at its Washington, DC headquarters and at the Johnson Space Center (JSC), Houston.

Jesse W. Moore is now acting associate administrator for space flight, succeeding Air Force Lt. Gen. James A. Abrahamson. The general has been named director of strategic planning, a new Defense Department position, reporting directly to the secretary of defense.

Neil B. Hutchinson is manager of the space station program at JSC. That appointment follows the February announcement by James M. Begg, NASA administrator, that Johnson would be "lead center" for the agency's space station program.



Astronaut James D. van Hoften and a repaired satellite are framed in a wide panorama by a Linhof camera making its debut aboard a space shuttle. Van Hoften is getting his first field test of the manned maneuvering unit (MMU), designed and built by Martin Marietta. This came after months of training in an underwater facility at Houston's Johnson Space Center and the MMU simulator at Denver Aerospace's main plant. The Solar Maximum Observatory Satellite, revived and ready for release into space once more, is docked at the flight support system (FSS). The remote manipulator arm is backdropped against the Earth. Except for pictures astronauts made of Earth on their way to the moon, this frame, showing the planet from almost 328 statute miles up, represents the highest orbital photograph in the manned space program.

MARTIN MARIETTA NEWS Published by Public Relations MARTIN MARIETTA AEROSPACE

Call Ext. 5364 with information or suggestions for articles, or call one of the following coordinators.

Technical Operations:	Floyd R. Teiffel Jr. 6872
Production Operations:	Steven L. Cohen 3369
Business Development:	E. W. Andrews 4619
Space & Electronics Systems Division:	Robert I. Curts 3639
Strategic & Launch Systems Division:	John H. Pond 9165
Business Management:	Daphne R. Gillison 3155
Personnel/Recreation:	Leroy Hollins 6750
	Lori A. Sharp 6605
Michoud Division:	Evan D. McCollum 3788
Vandenberg Operations:	Richard L. Kline 2202

DENVER AEROSPACE
P.O. Box 179—Denver, CO 80201

April 27, 1984

Spacecraft communicators direct their attention to the monitors on the CAPCOM console and the front screen in the mission operations control room at the Johnson space Center's mission control center at Houston.



Large deployable systems wins 2 contracts for almost \$1 million

Large deployable systems recently won two NASA contracts totaling \$999,000, according to John V. Coyner, manager.

A \$445,000, four-year contract from the space agency's Langley Research Center at Hampton, VA—for box truss analysis and technology development—is a study to address the technologies of mesh antenna performance, forced response dynamic analysis, radio frequency performance predictions, kinematic modeling, test scaling, Earth-based testing, and general structural and control modeling.

The second award is for a \$554,000, one-year study of a satellite voice broadcast system for the Lewis Research Center at Cleveland. It will address the system feasibility for operational sound broadcast satellite systems for the U.S. Information Agency (USIA).

Data Systems gets \$102M contract

The U.S. Department of Labor has awarded Martin Marietta Data Systems an 8-year contract valued at \$102 million to design, install, and maintain a computerized information system for the department's Division of Federal Employees' Compensation (DFEC) and its 2.8 million employees covered by the program.

PSP open enrollment in May

May is open enrollment month for the performance sharing plan (PSP) for any salaried employee with at least six months and 1,000 hours of service as of July 1.

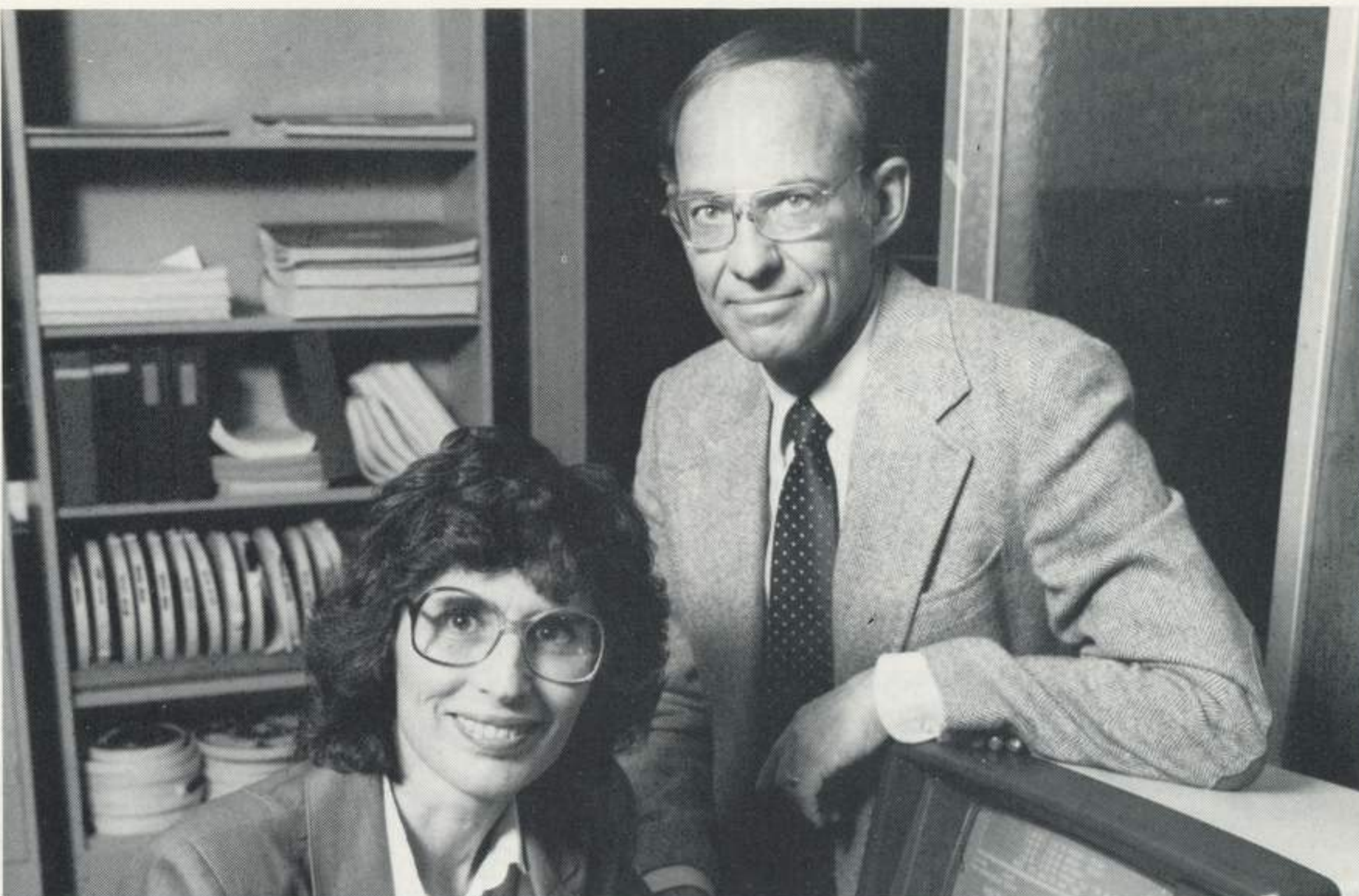
Those already enrolled may modify the percentage of payroll deducted for the PSP or change the tax mix during the open enrollment period. Enrollments or changes in election will take effect July 1.

All forms must be received at mail stop 1323 by May 31. Forms received after that date will be returned for resubmittal by employees during the November open enrollment period.

Employees whose level of before-tax contribution was reduced to 12 percent beginning last January 1, should complete a change form during May to be eligible for the maximum before-tax contribution (if that is more than 12 percent). Only decreases due to the discrimination test are automatic.

Employees in the upper one-third salary range affected by a cutback in salary deferral contributions will be notified. Employees in the lower two-thirds salary range will be eligible to contribute up to 14 percent of their salaries under the salary deferral program.

Questions should be referred to the Employee Benefits office, module 125, Eng Bldg, ext 5609 or 4928, from 10:30 a.m. to 12:30 p.m. and from 2:00 p.m. to 3:00 p.m. Mondays, Wednesdays, and Fridays.



Marcia Ashbrook, a software engineer now assigned to the ORB facility at Denver Aerospace's main plant, this month became the 1,000th new employee since the company began its concerted hiring effort late last year. She was hired as a "Project Referral" candidate proposed by her husband, Ronald, shown here. A 21-year veteran of the company, he is a staff engineer in the strategic and launch systems division and located at Greenwood Plaza. "Project Referral," started in November, allows employees to earn \$2,000 bonuses for each professional referral hired as labor grade 43 or above. Referral winners also qualify for mid-month drawings for a trip for two to a space shuttle launch from Florida's Kennedy Space Center. The April 9 hiring of Ashbrook puts Denver Aerospace well ahead of its goal of having 1,000 new employees onboard by July 1. The company expects to have about 2,000 new employees by the end of the year. Staffing is playing a key role in meeting that target with its 11 seven-member recruiting teams which are scouring the country for new talent to bring into Martin Marietta. At least four of those recruiting teams are on the road each week.

Clerical Support Service brings in new employees, saves \$\$\$s

Expansion is planned for an in-house clerical support service (CSS) that has saved the company more than \$60,000 in the seven and a half months of its existence.

CSS was set up in July to provide a pool of clerical support workers familiar with the company's facilities, procedures, policies, and everyday business routine, as opposed to outside temporary help agencies.

Pat Clark, CSS administrator, said that in addition to the overhead savings realized through the service and its current 58-member contingent, Denver Aerospace

"is gaining some good full-time employees from it."

"...While CSS cannot guarantee permanent or full-time employment, the possibility for permanent employment is encouraging," she added. "Since January there have been 24 new hires from the CSS pool."

Currently, the service is made up of clerks, secretaries, word processors, typists, and mail couriers who are available to fill in for permanent full-time employees absent because of illness and vacations. Plans call for adding draftsmen, technicians, and medical staff personnel to the service.

Pherson new employee relations head

Bruce E. Pherson has joined Denver Aerospace as the new manager of Employee Relations & Services, succeeding Dominic N. Verrastro.



Pherson transferred to Colorado from Vandenberg Operations in California where he had been manager of personnel since joining Martin Marietta Corporation in June 1981.

Before joining Martin Marietta Aero-

space, he held varied assignments with several major divisions of Lockheed Corporation in California and Georgia. Most of those assignments involved extensive dealings with labor organizations. He has participated in major aerospace labor contract negotiations for the past 20 years.

Pherson earned his B.S. degree in industrial management from the University of Tennessee before going on to graduate school. His first position from there was with the industrial relations organization of Oak Ridge National Laboratory.



Walter J. Kollosch (right), engineering, receives a certificate of appreciation from Robert D. Rhodus, director of Canaveral Operations, for a unique achievement—11 consecutive years without missing a day of work. Kollosch led a group of 83 Canaveral Operations employees recognized at a recent luncheon to honor work attendance. Thirty-six other honorees have accumulated from two to nine consecutive years of outstanding attendance. Total number of employees recognized represented 27 percent of the workforce and 185 combined years of absence-free attendance.

IBM personal computer training offered

Intensive hands-on training on the IBM personal computer and standard software packages are being offered to support Denver Aerospace's installation of that equipment throughout the company.

Courses are intended to develop skills among those employees whose areas already are equipped with the IBM personal computers and those who will receive them soon.

The 20-hour beginners' classes are con-

ducted by Informational Systems, Educational Services and Data Systems at the Inventory Bldg. and the Inverness Park facility from 8 a.m. to 12 p.m. every other day during a two-week period.

Betty Hilton, Educational Services, ext 5226, and Susan White, Data Systems, 790-3536, are the contacts for class enrollment and information.

Beginners' classes by Susan White, Jeary Frasl, and Jane Mertz from Data Systems' training department cover basic micro-computer usage and security—including PC-DOS, WordStar, LOTUS 1-2-3, and dBase II. Advanced software training is being developed for the near future.

Expanded MIC relocated

Interested in finding out about new competitors entering an existing Martin Marietta market? Maybe a little market research is needed before entering a new market ourselves.

That kind of information—and more—is readily available from the Marketing Information Center (MIC), located in the engineering building, room 200A. Hours are 8 a.m. to 4:30 p.m. Monday through Friday.

Susan Douglas, ext 4499, said MIC is the central repository for Defense Department and NASA budget data, general competitor information, selected congressional documents, military civilian and company organization charts, customer telephone books and newsletters, and journals and other periodicals, to list just a few items.

She added those resources can be invaluable, too, in analyses of competitors and for potential teaming partners for a specific request for proposal (RFP).

Employees part of symposium

Three Denver Aerospace employees will play a part in the 30th International Instrumentation Symposium May 7-10 at the Clarion Hotel Denver Airport.

R.A. Meyer of Michoud will develop a technical paper session on real-time display and control. R.G. Harrington, also of Michoud, will present a technical paper on an automated ultrasonic weld inspection system for the space shuttle external tank as part of that session.

Leon Kershaw, a group engineer in central data recording, is in charge of facilities for the symposium, which is presented by the aerospace industries and test measurement divisions of the Instrument Society of America.

Applications due for Aerospace intern program

Applications for the Martin Marietta Aerospace headquarters intern program are due for review here by May 11.

Interested candidates should contact R.W. Walker, ext 3395 for application forms and further information.

Aerospace headquarters will consider three candidates—one each from Denver, Orlando, and Baltimore—for the single 1984-85 intern position. The winning candidate will be named June 15 and will start the internship during late July.

Candidates should have a technical background and a minimum of three years service with Martin Marietta.

During the one-year assignment, the intern will report to the Aerospace vice president for technical operations and have a wide range of assignments at Bethesda headquarters.

The intern program aims to identify and train promising employees through exposure to senior management level activities—within and outside the company. Interns also work with selected Defense Department and NASA study groups at the same time they support Martin Marietta Aerospace business activities.

'Doc' Graham scholarship at ACC

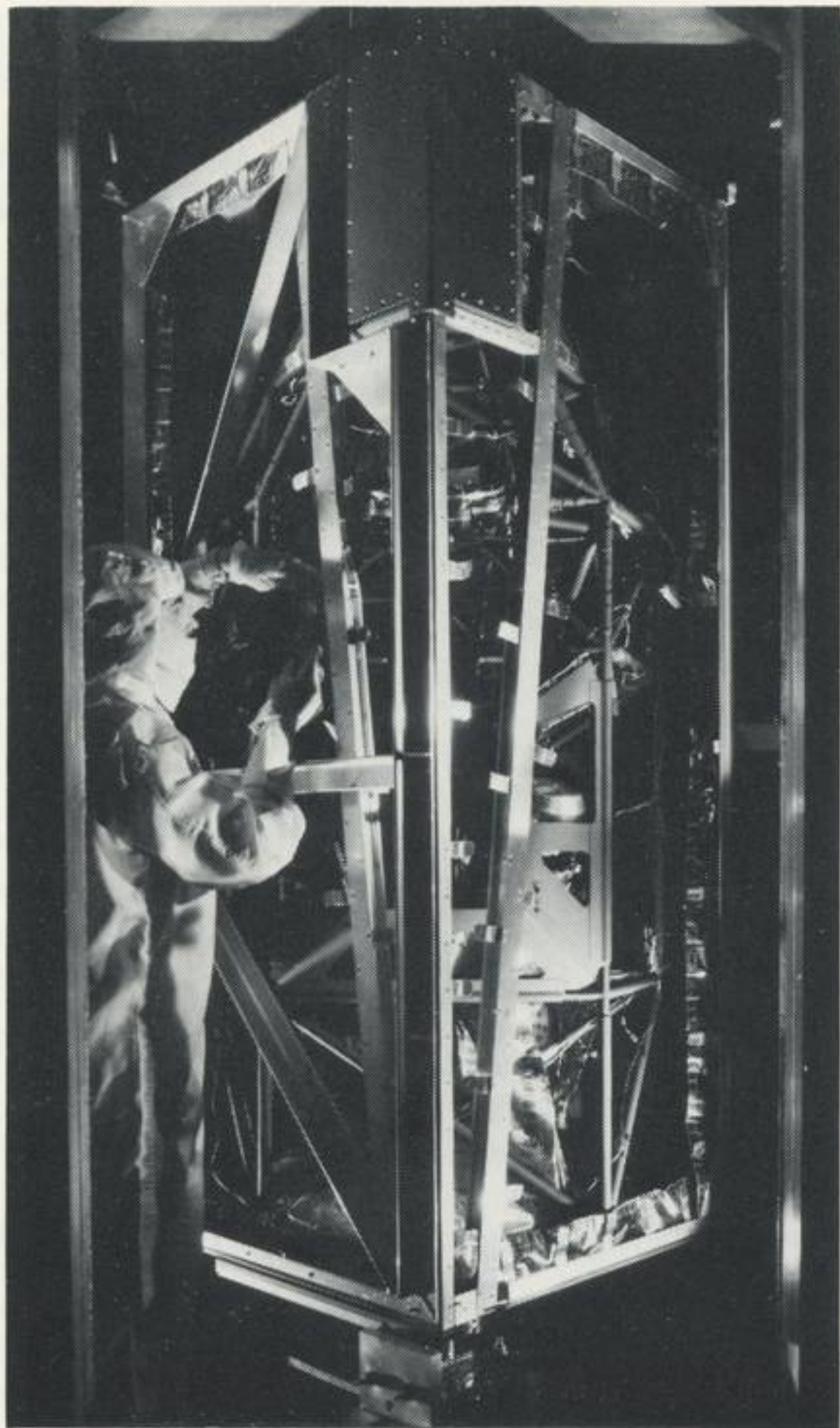
The Robert "Doc" Graham business scholarship fund has been established at Arapahoe Community College (ACC) to honor Denver Aerospace's former director of material and special assistant to the vice president for business management.

Graham, who died March 3, 1984, retired from Martin Marietta in 1974 after slightly more than 14 years with the company. He then began teaching at ACC and successively became chairman of the accounting, finance, and management department and chairman of the accounting, economics, and finance department. He also established a small business institute at the college.

Income tax deductible contributions to the scholarship fund should be made payable to the ACC Doc Graham Scholarship Fund and mailed to Arapahoe Community College, 5900 S. Santa Fe Dr., Littleton, CO 80120; ATTN: Gerald Unruh, Doc Graham Scholarship Fund.

Witnesses sought

Witnesses to the rear-end collision of a Douglas County dump truck by a tan Honda Accord on Titan Road at 7:20 a.m., Tuesday, March 27, 1984 are asked to contact Randy Schmidt, ext 3024.



FOS Modified At SSL

The faint object spectrograph (FOS)—which scientists hope will provide clues about our universe's origins—has completed mission simulation testing successfully at NASA's Goddard Space Flight Center, Greenbelt, MD, and is back at Denver Aerospace for modifications as part of a \$3.5 million ongoing contract.

The company teamed with the University of California at San Diego originally to design, build, and test the FOS. Martin Marietta's share of that \$32 million NASA contract was \$25 million. The high sensitivity astronomical instrument is designed for use with the space telescope to detect and analyze light sources in the universe so faint they cannot be seen by an ordinary telescope.

Lou Ripp, program manager, said the instrument was delivered to Goddard last August, where it underwent mission simulation testing alone and with four other scientific instruments to be incorporated into the space telescope.

"We are currently going through a modification period and will replace a pair of high sensitivity detectors which allow us to determine what we're looking at with the space telescope," Ripp said. "We also will be going through additional thermal vacuum calibration testing."

Ripp said the testing will be done in the 29-by-45 foot thermal vacuum chamber at the space simulation laboratory (SSL).

Ripp said the FOS should be delivered to Lockheed Missile and Space Co., Inc., at Sunnyvale, CA as scheduled during September. It will undergo more tests there before being integrated into the space telescope. The telescope is due to be carried into orbit by the space shuttle during summer 1986.

Commercial launch vehicle business

Company goes after major new Titan contract

The U.S. Air Force's intention to buy 10 new expendable launch vehicles on a commercial basis has presented Denver Aerospace with a new business opportunity that could be one of the largest in the company's history.

Denver Aerospace plans to offer an upgraded version of the Titan III launch vehicle to meet the Air Force's requirement for assured access to space. The launcher—which would have a stretched core and 7-segment solid-propellant rocket motors—would be capable of placing a 10,000-pound payload into geosynchronous orbit.

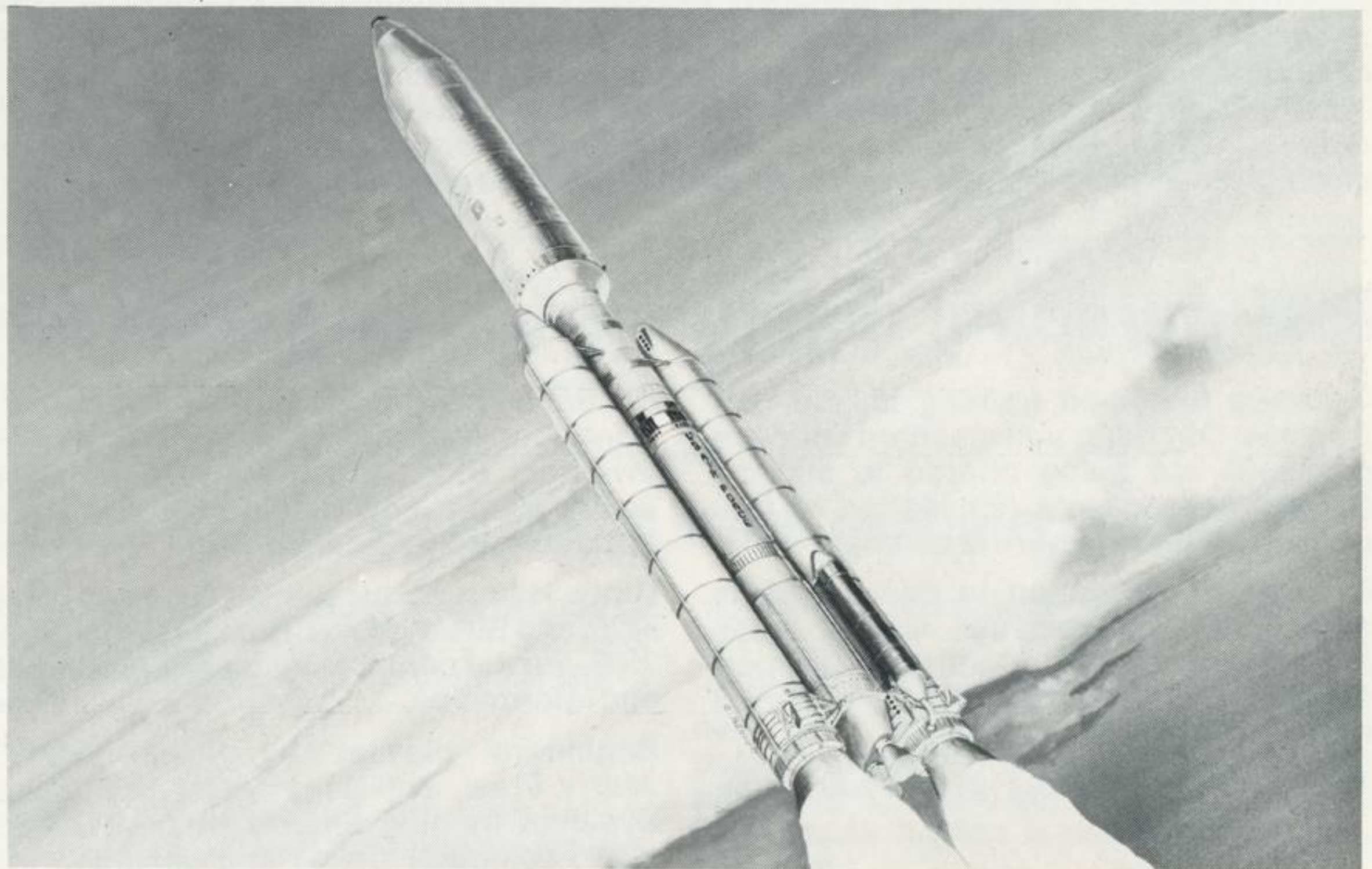
"This kind of opportunity would sustain the Titan vehicle well into the 1990s, perhaps even into the year 2000," said Gary Flora, program manager for commercial Titan.

"So it's an excellent opportunity for Martin Marietta to continue production of the most reliable expendable launch system in existence."

On March 30, the Air Force's Space Division invited bids to build and fly two launch vehicles a year beginning during October 1988. Proposals are due May 30.

Source selection should be complete by the end of this summer, with an October 1, 1984, start date for the nine-year program.

Air Force plans call for buying the launch vehicles on a commercial basis, with the winning contractor providing up-front development financing. Martin Marietta has formed a team with three other companies to bid the Air Force contract. The companies are Aerojet Techsystems Co., United Technologies' Chemical Systems Division, and General Motors' Delco Systems Operations.



Artist's concept of commercial Titan

Corporate first quarter sales top \$1 billion for first time

Martin Marietta Corporation reported 1984 first quarter earnings of 64 cents a share, up 60 percent from the 40 cents a share for the same period of 1983. Net earnings were \$24,841,000 on sales of \$1,068,000,000, compared to earnings of \$13,811,000 a year ago on sales of \$801,922,000.

The average number of common shares outstanding for the quarter was 34,513,387, compared to 27,347,798 for the same quarter a year ago. The sales figure was the largest for any first quarter in the Corporation's history. Aerospace, Martin Marietta's largest business, continued to account for the major share of sales and earnings. Aluminum sales were more than double the first quarter a year ago, and Data Systems sales were up more than 50 percent.

Earnings from operations, before interest and taxes, were \$45,610,000, an increase of 176 percent from \$16,522,000 for the same quarter a year ago. Other income of \$11,930,000 compared with other income in the first quarter a year ago of \$37,438,000, which included \$28 million of nonrecurring gains from the sales of assets.

Interest expense of \$17,499,000 was down 45 percent from \$31,749,000 a year ago, reflecting the Corporation's considerable reduction of long-term debt during the past year. Long-term debt on March 31, 1984 was \$533.5 million, compared to \$1.14 billion March 31, 1983, a debt-to-capitalization of 38 percent, compared to 67 percent at the same time a year ago.

Recreation

Alpine—The Rocky Mountain Alpine Club has scheduled a special 30-minute, three-part audio-visual presentation by the Wind River Mountain Guides, *The Winds of Wyoming*. It will be shown at 7 tonight (Friday) in Room 200K at the Denver Systems Center (DSC). Detailed information is available from Recreation, module 124, Eng Bldg, ext 6750, and from recreation racks throughout the company. Club contact is Gordon Voss, ext 8109 or 973-6512.

Radio—The Waterton Amateur Radio Society has scheduled a 5 p.m. meeting for Tuesday, May 1, in the group's radio shack in the far west building of Martin Marietta's recreation area. The meeting is open to all. Topics to be covered include the annual election of officers, the new membership drive, field day operations, programs for the year, and the continuation of satellite communications.

Bowling—League registration forms, which must be turned in by May 1, are available from Recreation and the department's information racks for the new Columbine Lanes at Simms Street and Bowles Avenue. The new bowling alley has reserved 6:15 p.m. and 9 p.m. Monday, Tuesday, and Wednesday for four- and five-member teams, respectively.

Michoud suggestion program nets \$500K-plus in savings

Cost savings during 1983 through the employee suggestion program at the Michoud division amounted to a net total of \$505,953. That figure almost doubles the previous year's.

The total amount awarded to employees last year for their suggestions was \$79,051.

Ralph Tortorich's motivation department oversees the suggestion program, and he noted it "provides employees with ways to develop and show initiative and ingenuity beyond regular job responsibilities. The program then rewards employees with a share of the benefits the company derives from their suggestions."

Suggestion activity during 1983, according to Carol Romero, suggestion system coordinator, also showed a marked increase—2,729 suggestions for the year. She added the participation rate of 59 suggestions for each 100 employees puts the Michoud program well above the industry average of 32 for each employee each year.

The safety special during March 1983 also generated an overwhelming response of 623 suggestions for the month. The company adopted 105 of the 428 ideas related specifically to safety.

U.S. Savings Bonds: safe, certain investment

Once upon a time...savings bond drives brought groans about "bad investments." Today, that reaction has given way to investor enthusiasm over the new market-based U.S. Series EE Bond.

Unlike its predecessor, the fixed-interest-rate bond, the Series EE pays a market rate of interest that is 85 percent of the average interest rate on five-year Treasury securities. That means if the interest rate on Treasury securities averages 10 percent, the bond earns 8.5 percent. If interest rates climb, so does the bond's interest rate. Conversely, if interest rates drop, the bond holder is protected by a 7.5 percent guaranteed minimum interest rate. Currently, Series EE interest is at 9.38 percent. The only requirement is the bond must be held five years. If cashed in early, the bond holder receives a fixed rate of interest that's lower than the market-based rate.

Naturally, savings bonds won't reap the high returns possible on more risky investments, such as stocks and mutual funds. But they are safe, with no chance of losing one's entire investment—a distinct possibility in today's see-sawing stock market.

Tax advantages also figure prominently. Bond holders pay no taxes on the interest earned by Series EE bonds until they are cashed in. Even then, the owner may have entered a lower tax bracket.

Then there is the return. A small \$25-a-month savings bond contribution during a 10-year period (at a 10 percent average market-based interest rate) would amount to \$4,863.34. A \$50 monthly participation under the same conditions would gross \$9,726.68.

JA products sale

The Martin Marietta-sponsored Junior Achievement "Musical Minutes" company will be selling its wood and brass wind chimes and its battery-operated, agate-faced desk/wall clocks from 10:30 p.m. to 12:30 p.m. today.

Sales desks will be at the Engineering Bldg cafeteria entrances, the lobby at Denver Systems Center (DSC), and the cafeteria entrance at Littleton Systems Center (LSC).

Titan II, III reunion set

A reunion of the original ground support equipment (GSE) and installation groups of the Titan II and Titan III programs is scheduled tentatively for May 2.

Contacts for the 5 p.m. gathering at The Duffers Restaurant, 2101 W. Oxford Ave., are Jack Rombach, ext 7850; Don Fullerton, ext 9446; and Dick Pomeroy, ext 7048.



Sue Ritz, daughter of James M. Ritz, manager of fabrication at the electronics manufacturing facility (EMF), recently was named Colorado's Class 4A volleyball player of the year by Colorado Sidelines. The publication, which covers high school sports only, uses a statewide coaches poll to determine its honors. The 17-year-old Evergreen High School senior played for the Cougars' volleyball team which won its sixth consecutive state title and extended its winning streak to 150 matches, the third best streak in history. USA Today ranked the Cougars second in its national top 10 volleyball poll. The young woman's other honors include being named to the 15-player 4A All-State squad; number one server in Jefferson County; All-Conference team; 1984 All-State member of the North Team. The number two scorer for the 1983-84 Cougars' squad also earned a varsity basketball letter.

Company open house Aug. 25

The 1984 Denver Aerospace open house at the main plant has been scheduled for Saturday, August 25, from 8:30 a.m. to 3:30 p.m.

Plans this year call for tours of facilities, displays, film and slide presentations, entertainment, and refreshments for employees and their families, retirees, Air Force personnel, and other special guests.

Planning committee chairman for the open house is Leroy Hollins, Recreation, module 124, Eng Bldg, ext 6750.

March PSP unit values announced

Unit values for the Performance Sharing Plan (PSP) as of March 31, 1984 were: Fund A (indexed equity): 2.2562488586; Fund B (fixed income): 1.8736142941; Fund C (Martin Marietta stock fund): 2.1361381468; and Fund D (TRASOP): 0.8464586782.