

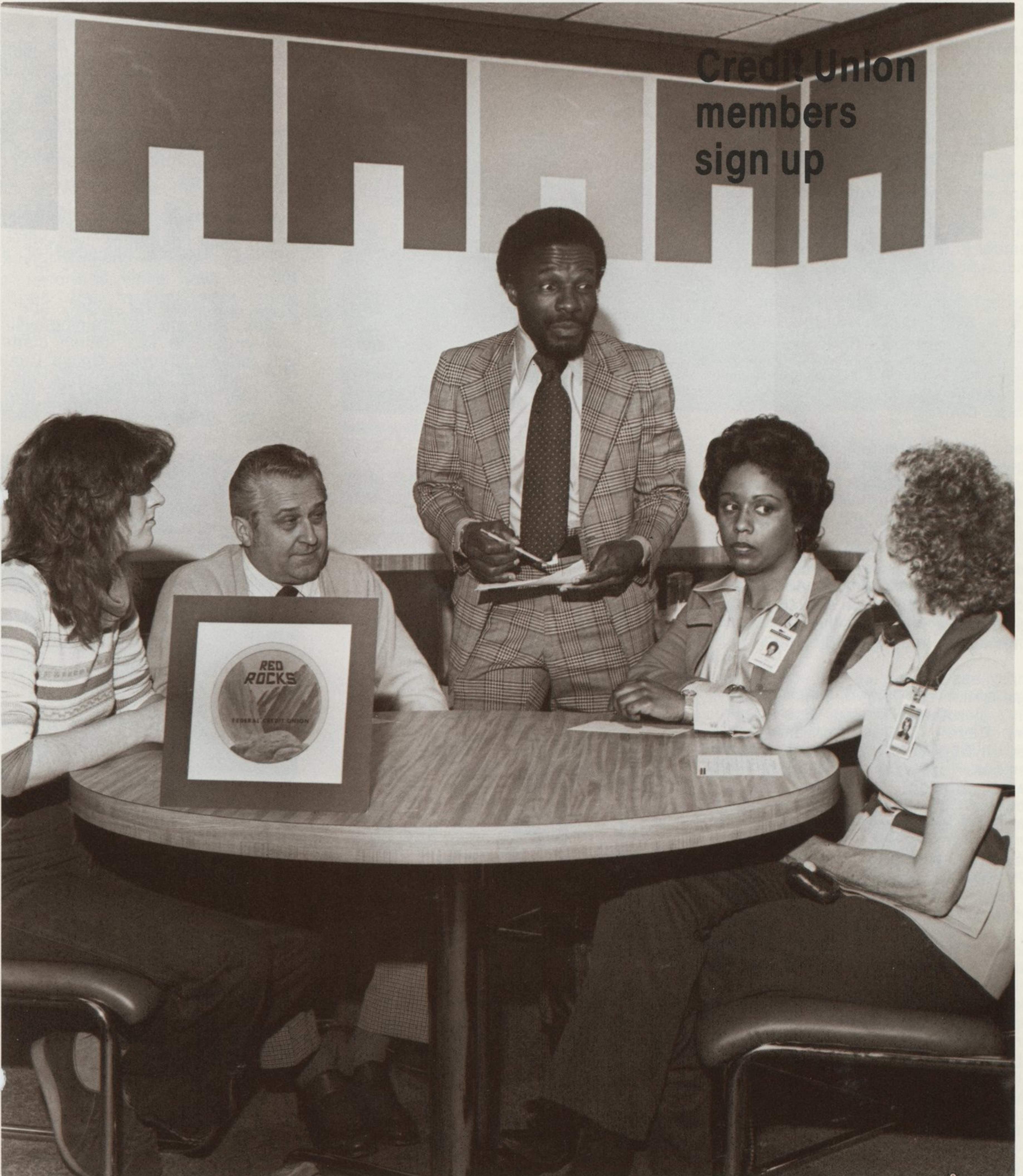
MARTIN MARIETTA

# news

DENVER DIVISION

NUMBER 1/1980

Credit Union  
members  
sign up



# Red Rocks Credit Union operating

Red Rocks Federal Credit Union, chartered to serve Denver Division and Denver Data Systems employees, will hold its membership campaign the week of January 21. Credit union representatives will be in cafeterias and other facilities to discuss the organization and enroll members.

Employees, their families, and retired employees may join the credit union for as little as \$10.00—one-time \$5.00 membership fee and a \$5.00 credit union share. Membership continues as long as a person keeps \$5.00 in a share account, even though the member is no longer employed by the division or data systems.

Although membership is restricted to Denver area employees, the federal charter permits the credit union to offer services to employees outside Denver. The credit union board is analyzing ways to serve employees outside Denver.

Credit unions are self-help financial organizations through which members save together and make low-cost loans to each other for worthwhile purposes. They are managed and operated by members.

Except for processing payroll deductions for savings and loan payments and making office space available, the division has no role in the operation or management of the credit union.

Employees serving as officers of the organization are John J. Smith, president; Dorothea Gibson, vice president; Robert L. Gale, treasurer; and Fred R. Bennett Jr., secretary. Board members are Bruce Benigno, A. Wayne Bodkin, Kenn M. Byers, Nicholas Ganiaris, Marie Heidbreder, Charles H. Smith, and Lloyd Trujillo.

Charles E. Richards, who retired in 1979 after serving more than 20 years as treasurer/manager of the Lowry Federal Credit Union, has been named to manage the day-to-day operations of the Red Rocks Federal Credit Union.

The credit union offices are in engineering building 240, near the library in the former second floor cafeteria area. The office will be open daily from 10:30 a.m. to 1 p.m. The mail number is CU-1. Telephone service will be available after February 1. The number will be 973-6000.

Savings are insured by an agency of the federal government up to \$40,000.

## Credit union visits scheduled

Red Rocks Federal Credit Union representatives will answer questions and accept membership applications the week of January 21. They will be at the following locations between 10:30 a.m. and 1 p.m. on the days listed:

Monday, January 21: engineering building cafeteria

Tuesday, January 22: SSB cafeteria

Wednesday, January 23: Denver Systems Center cafeteria (includes employees at West Point)

Thursday, January 24: Federal boulevard facilities

Friday, January 25: Greenwood Plaza/Greenwood Commons

## On the cover

**First members of the Red Rocks Federal Credit Union enroll as the organization begins its membership campaign. Accepting the applications was John J. Smith, standing, president of the credit union. New members, seated, left to right, are Karen Yost, Emil P. Fuscick, Carol Reece, and Ann Bruce.**



# Tile repair kit for orbiter to be built here

The division has won a contract to design and fabricate a repair kit for thermal protection tiles that cover the Space Shuttle orbiter.

The orbiter is covered with thousands of silicone-based tiles that will protect it from intense heat during reentry into the Earth's atmosphere. Should any of the tiles be damaged during launch or orbital operations, crew safety during atmospheric entry could be jeopardized.

To protect the astronauts, the division will make a kit that can be used to repair or replace damaged or lost tiles.

Three kits—one for flight, one for backup, and one for training—will be built under the \$2.1 million contract with NASA's Johnson Space Center. The flight and backup units will be delivered in August 1980 and the kit will be carried on early Shuttle flights.

The kit consists of eight hand-held units used to mix and apply the ablative tile repair material, a motor and batteries to operate the mixer, blocks of hardened ablative material to fill large holes, a trowel and other hand tools, a coating applicator, and a storage container.

Each of the hand-held applicator/mixers weighs 13 pounds when loaded with material. The entire kit weighs about 280 pounds.

If tile repair is necessary, a Shuttle astronaut wearing a space suit will exit the crew compartment through an airlock into the cargo bay. Once in the cargo bay, he will don a backpack maneuvering unit and attach a work restraint station to his feet. Using the backpack, the astronaut will then be able to fly around and inspect the orbiter.

To repair a damaged section, the astronaut will attach the work restraint station to the side of the orbiter and then use the kit to apply the ablative repair material.

The division is also manufacturing the work restraint station and the backpack maneuvering unit for NASA.

*Sketch shows astronaut using maneuvering unit, tile repair kit, and the work restraint station outside Shuttle orbiter.*

# Division to build solar wind analyzer

A solar wind analyzer instrument to be used on an international solar polar mission spacecraft will be designed and built under a \$1 million contract recently awarded the Denver Division.

The Jet Propulsion Laboratory is managing the spacecraft program.

The instrument will fly on one of two spacecraft scheduled for launch aboard the Space Shuttle in 1983. The two spacecraft will travel to Jupiter where they will use the planet's enormous gravity to assist them in changing their orbital plane--from the Earth's ecliptic to an orbit around the solar poles.

It will take the spacecraft approximately one year and four months to reach Jupiter, and another two and one-half years to reach their positions directly over the solar poles.

The spacecraft on which the solar wind analyzer will fly will take five years and six months to orbit the Sun. At its closest pass, the spacecraft will be 65 million miles from the Sun. When it passes over the Sun's poles, it will be 121 million miles from the Sun. (For comparison, Earth is about 93 million miles from the Sun.)

Solar wind consists of highly ionized atoms emitted from the Sun. The ions travel away from the Sun in all directions at high speed. The solar wind analyzer will measure the ratio of energy to the electrical charge of these ions. From this information, scientists will be able to determine the velocity and temperature of the solar wind.

Solar wind has been extensively studied in Earth's ecliptic plane, but little is known about its intensity and effects outside this plane. With the information provided by the solar wind analyzer, scientists hope to generate a mode of the energy flow around the entire surface of the Sun, thus helping them better understand the solar wind and its effects.

Effects of solar wind on Earth include the aurora borealis and aurora australis. Normal radio communication is also disrupted by increased solar wind activity, and there seems to be a definite correlation between this activity and Earth's climatic history.

The solar wind analyzer is comprised of data processing and analog electronics, high and low-voltage power supplies, and a quadrispherical analyzer assembly (so called because its shape is one-quarter of a sphere). When assembled, the instrument is a six-inch, magnesium-shelled cube with the analyzer shell protruding from the top. It weighs 3.85 pounds (1.75 kilograms).

The analyzer assembly consists of two quadrispherical shells: one large and one small. The small shell is mounted inside the larger one, separated from it by 5/16 of an inch (7 millimeters). There is a small opening between the shells called an entrance aperture.

## Division to host employees at Nuggets game

Employees and family members living with them will be guests of the division at one of four Nuggets basketball games in February.

Cards have been mailed to all employees on which the number of tickets and game choice may be made. These cards are to be returned to the recreation office, mail no. 6321, no later than January 18.

Because of the special group price, the Nuggets will not exchange the tickets for another night. However, employees may exchange tickets with each other if they are unable to attend the game originally selected.

Game dates are:

Saturday, February 9, 7:35 pm: San Diego Clippers. Free photo night for children 14 and under.

## FICA deductions to increase

Federal Insurance Contributions Act (FICA) deductions from employee wages will be greater in 1980 than in 1979 even though the social security tax rate remains the same--6.13 percent. The maximum annual wages subject to the tax increases from \$22,900 to \$25,900. The maximum deduction is increased by \$183.90, from \$1,403.77 to \$1,587.67. The company is taxed at the same rate--up to the \$1,587.67 maximum--as the employee and pays an amount equal to each employee's deduction.

As scheduled now, the tax rate and the maximum wage subject to tax will continue to increase at least until 1990.

The tax rates scheduled are 1981: 6.65%; 1982-84: 6.70%; 1985: 7.05%; 1986-89: 7.15%; and 1990: 7.65%. These rates include deductions for social security and hospital insurance (part A of medicare).

The maximum wage subject to tax, for example, increases to \$29,700 in 1981 and similar increases are scheduled for succeeding years.

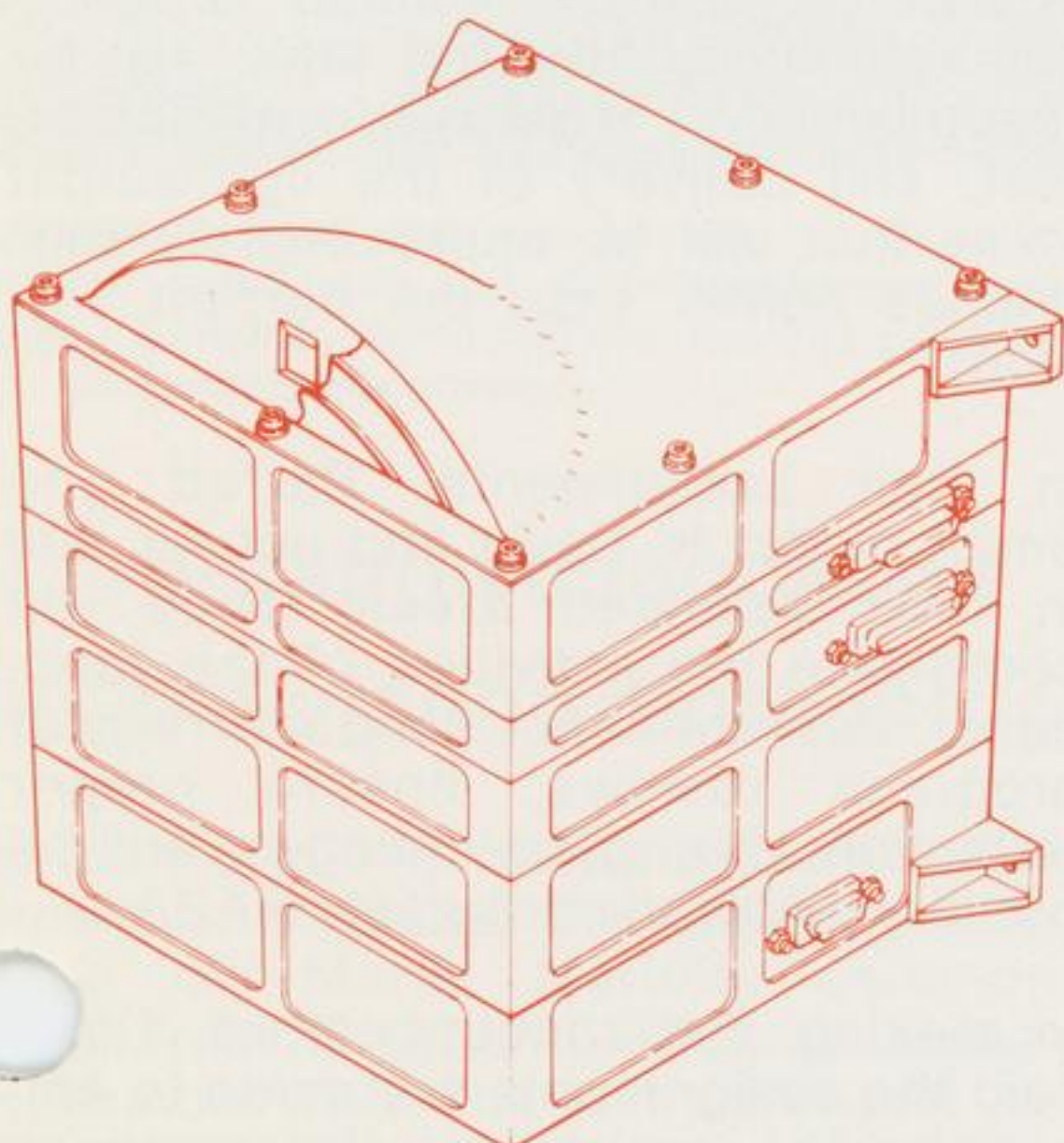
Although various plans have been proposed in Congress for alternative ways to finance the social security and medicare programs, none have been accepted.

Friday, February 15, 7:35 pm: Atlanta Hawks. Free basketball clinic.

Sunday, February 17, 1:45 pm: Houston Rockets. Free David Thompson T-shirts for children 14 and under.

Wednesday, February 20, 7:35 pm: Los Angeles Lakers. Ladies night.

The division has purchased 3000 tickets for each game.



Drawing shows view of solar wind analyzer instrument the division is designing and building for international solar polar mission.

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# New typesetting unit installed

This issue of *Martin Marietta News* is the first for which type and headlines were set on the division's recently installed phototypesetting equipment.

The Compugraphic display composition system is primarily for use in proposal preparation, but also can be used for viewgraphs, forms, brochures, and for publications like the *News*. With the installation of an interface "blackbox," the typesetter will be integrated with editorial services' Wang word processor.

Proposals, reports, and other material prepared on any Wang word processor in the division can be typeset without rekeying by updating data from Wang archive discs and coding the copy for the typesetter. Material can also be input directly on the phototypesetter.

The system replaces magnetic-tape driven typewriters that have been used for nine years to set type for division publications.

The operator may preview, proofread, and make up a completed page on the screen before it is photographically reproduced.

With the old system, all material had to be retyped to prepare the magnetic tape used to set type. The retyping required added proofreading, increasing the preparation time for each page. The new system eliminates the retyping and proofreading.

## Engineering contractor picked for Utah plant

Martin Marietta has selected Fuller Company of Allentown, PA, as the engineering contractor for a new cement plant in Utah.

Detailed engineering on the project has started and initial production is expected in 25 months, or early 1982.

The Utah project will cost about \$85 million, including plant construction and infrastructure at the site, marketing terminals in Salt Lake City and elsewhere, plus associated engineering and project management costs. The plant site is in Jaub county near Leamington, about 100 miles south of Salt Lake City.

Utah is a new market for Martin Marietta's cement company, which now operates eight plants in the Northeast, the South, the Midwest, and in Colorado.



Sharon Hunter, specialized machines operator, sets type for *Martin Marietta News* at the console of the division's recently installed phototypesetting equipment. She can read the text on the screen in front of her and also see how the material will appear when set in type on the screen to her right.

## Solar development consolidated

An organizational realignment that consolidates all solar energy-related development under the direction of H. C. Wroten has been announced by C. B. Hurtt, division vice president and general manager.

Wroten, former director of product development, will direct all division solar energy-related work, including solar thermal central receiver and solar photovoltaic systems.

The faint object spectrograph program will remain a part of technical operations.

Other product development programs previously under Wroten will be incorporated in the space systems department headed by Peter B. Teets. These programs include the Space Shuttle reaction control system tanks, Intelsat IV tanks, Shuttle solid rocket booster decelerator subsystem, Shuttle electronics (PIC and caution and warning), and high-density digital recorders.

## Savings bond program changing

The U. S. Savings Bond program is currently undergoing changes that will be announced to employees soon. Until the changes are completed, employees may continue to purchase Series E bonds at their present deducted amounts through June 30, 1980.

## Patent, invention awards are made

One employee has received a cash award for a patent and seven others have received cash awards for their inventions.

Robert O. Leighou has been issued a patent for his invention of an "apparatus and method for receiving digital data at a first rate and outputting the data at a different rate."

Others honored by the Denver product development review board were:

Dr. Wayne E. Simon, engineering mechanics: Fluidic device to measure tank ullage volume.

Gustave K. Jung, structures, Michoud: Flex-strain testing apparatus.

Keith H. Upchurch, electronics: Dual orthogonal polarizations from single feed in microstrip antennas.

Philip L. Becker and Lyle D. Graff, electronics: Communications multiplexer/controller (CMC).

Richard D. Boydston, Burton J. Becker, and John V. Coyner, engineering mechanics: Whiffle truss beam payload support system.

For information on submitting invention disclosures, call the patent department, West Point extension 662.

## Two employees receive performance awards

Two Canaveral operations employees have received performance awards in the space launch systems mission success program. They are Lawson H. Vest and Norman E. Penn Jr.

Vest, a senior quality engineer, was recognized for his ingenuity in using X-ray techniques to determine the extent of shipping damage to an umbilical cable. As a result of his findings, it was determined that the cable was not functionally damaged and was acceptable for use.

Penn, a maintenance engineer, was commended for his work in automating the preventive maintenance schedule with computerized procedures. The transition was performed while continuing to maintain the manual accounting system to ensure preventive maintenance system accuracy.

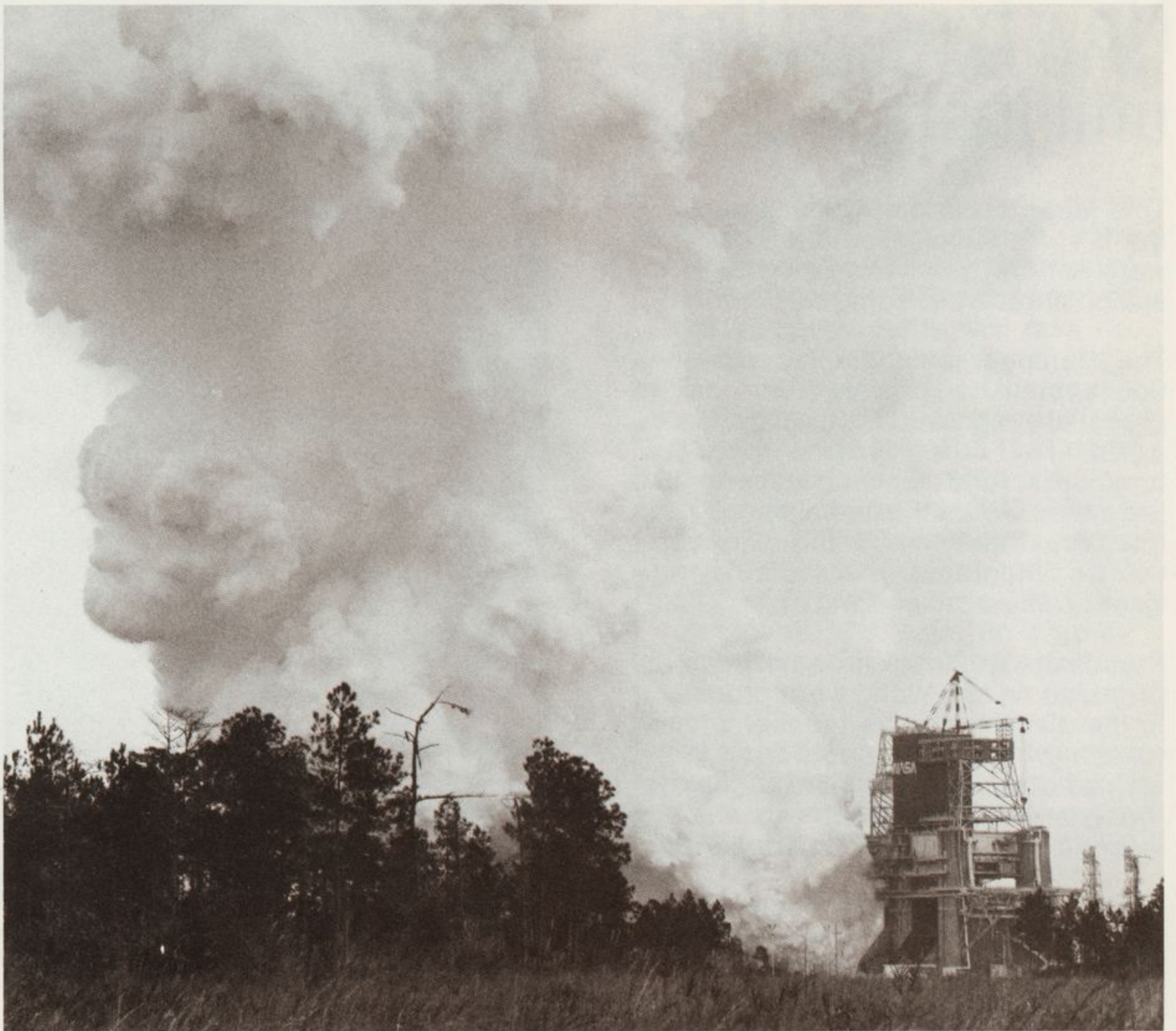
The two employees and their wives were dinner guests of the mission success program.



Lawson H. Vest, left, and Norman E. Penn Jr. display certificates and dinner invitations from space launch systems mission success program for outstanding performance.

## Corporation announces sixth dividend increase

Directors of the Martin Marietta Corporation increased the quarterly dividend on Martin Marietta common stock from 50 cents to 53 cents in mid-November 1979—the sixth dividend increase in 30 months and the second in 1979. Payments at the new \$2.12 annual rate were made December 28, 1979 to shareholders of record at the close of business November 26.



Billowing clouds mark Shuttle main engine test.

## Shuttle main engine test is successful

### Hurtt named Federal Reserve chairman

C. B. Hurtt, division vice president and general manager, has been named chairman of the board of the Denver branch bank of the Federal Reserve Bank of Kansas City.

He succeeds A. L. Feldman, who recently resigned as president of Frontier Airlines to head Continental Airlines.

The first full-duration test firing of the Space Shuttle main engines was conducted successfully at the National Space Technology Laboratories December 17. The engines fired for 550 seconds, about 30 seconds more than required for the Shuttle to reach orbit.

The engineers burned liquid oxygen and liquid hydrogen from a test version external tank that is used in all of the main engine tests to obtain propulsion and thermal data on the tank.

During the firing, the three main engines ran at 100 percent of their rated power for 340 seconds. The system was then throttled down to 90 percent, 80 percent, finally to 70 percent before cutoff. The engines were also gimbled to test the system's ability to change course in flight.

Preliminary data indicate the external tank functioned normally. Michoud propulsion engineers are analyzing the data for use on future tests and on the first manned flights.



Thomas C. Wirth, right, Martin Marietta's director of external tank operations at Kennedy Space Center, presents an \$8,000 check to John Nelson, executive director of the United Way of Brevard County. The check covers this year's employee contributions to United Way. External tank personnel at Kennedy Space Center achieved 99 percent participation in the program.

# Employee of year honored at Michoud

As Michoud employee of the year, N. Joe Rome explains he simply enjoys doing his job and if he is cited for achievement, that is nice to know.

Despite Rome's modesty, he was chosen 1979 employee of the year not only for his outstanding performance, but also for his positive attitude on the job, his ability to work with others, and his dedication to the manned space flight program.

Rome's record and accomplishments read as if they were lifted from a "Who's Who at Michoud." He is a fabricator with the jig and fixture division, which assists Michoud's production department in constructing tools used on the external tank. He is recognized as a highly skilled optical specialist and a key man in critical optical alignments on the oxygen and hydrogen assembly fixtures.

Since joining Martin Marietta in 1976, Rome has received a spot award for reworking the oil can inspection fixture on the aft external orbiter assembly installation fixture. He was presented an employee commendation for his work on the aft ogive gore master template. He later was cited for outstanding performance for his fabrication of the external tank forward sling set used to lift the tank into towers for test.



N. Joe Rome, left, receives the Michoud employee of the year award from C. B. Hurtt, right, Denver Division vice president and general manager, and Kenneth P. Timmons, center, Michoud vice president. The award included a \$500 tax-paid cash award, the plaque, a gold lapel pin, a reserved parking space for a year, and a trip to Cape Canaveral launch of the first Space Shuttle.

He also has submitted suggestions for improving the hydrogen aft dome and the hydrogen assembly and weld fixture.

Rome has a flawless attendance record as well, with no missed work days in three years.

## Two are named program managers

Two new organization assignments have been announced at Michoud by Richard M. Davis, external tank project director.

Robert W. Smith has been named program manager for production readiness with responsibility for implementation of the external tank production readiness plan.

William F. Barrett, named program manager for lightweight tank, will be responsible for design, development, test, and delivery of the lightweight tanks that will be approximately 6000 pounds lighter than the current version.

In their assignments, Barrett and Smith report to Davis and act for him in their assigned areas. They will coordinate the activities of the functional departments, conduct regular progress reviews, ensure proper reflection of program changes, and be primary points of contact for NASA.

In making the announcement, Davis said the assignments are made to emphasize the importance the company places on these two significant areas and to allow him as project director to concentrate on mission success and the first Shuttle flight.



NASA astronaut Donald K. Slayton addresses an assembly of all Michoud operations employees in December. He told them their work so far on the external tank program has been exemplary. He presented Silver Snoopy awards to employees for their outstanding contributions. Those who received the awards were Walter H. Barcellona, Pam Mitchell, Kenneth H. Crisler, Bill R. Crowley, Hazel C. Patyrak, Michael Javery, D. W. Herrin, Don A. Short, Leo A. Schmitt Jr., Joe Giordano, Lynette Dave, James H. Turner, Tom E. Farrow, Dan Swords, Gale Copeland, William H. Spiegel, David Munn, Clyde Hutton, Frank Loughlin, Richard P. Hoard, and Leonard E. Enger.