

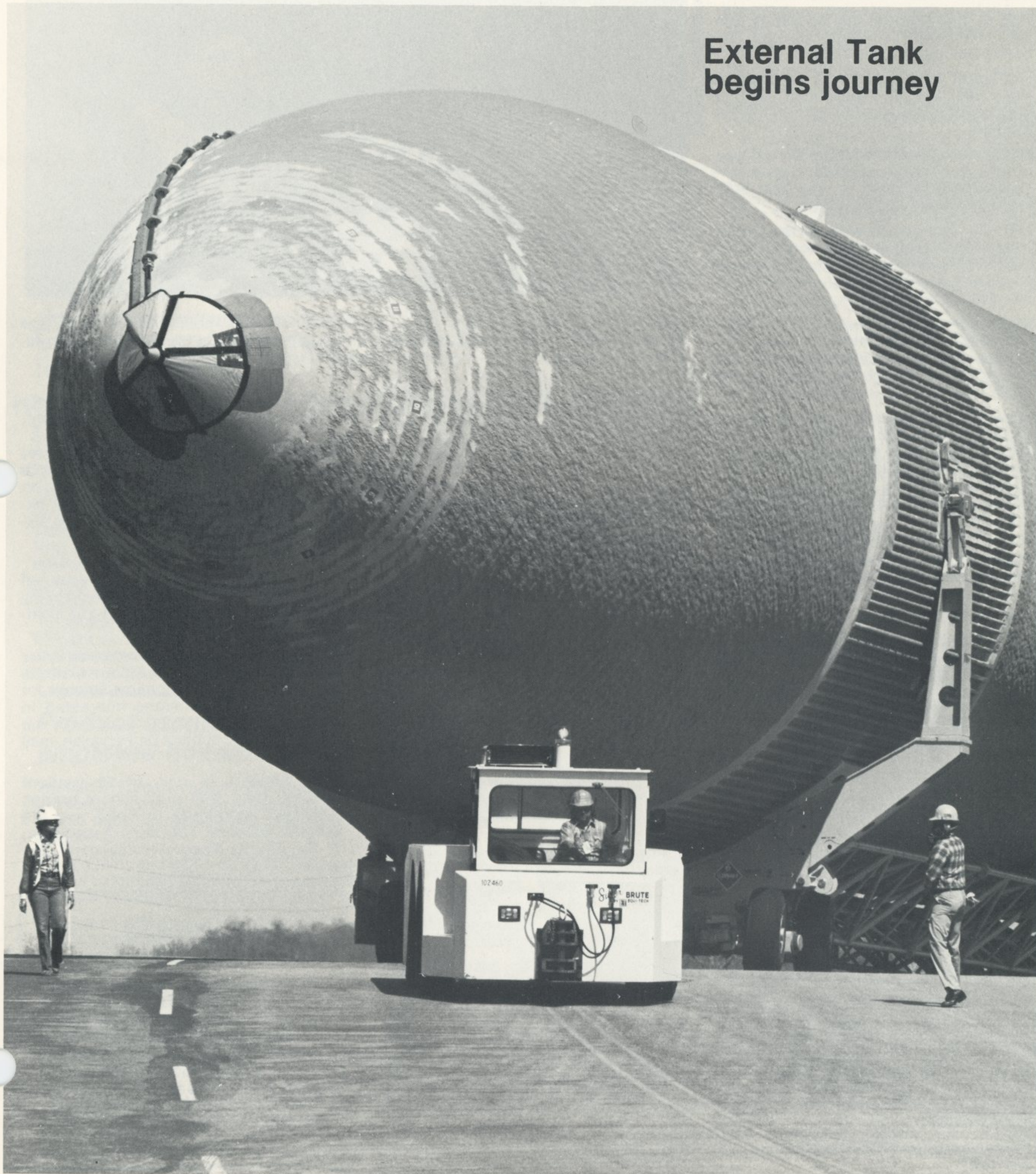
MARTIN MARIETTA

# news

DENVER AEROSPACE

NUMBER 5/1983

External Tank  
begins journey



# Peacekeeper tests are proceeding at Vandenberg

The Pathfinder missile for the Peacekeeper program has been assembled in its canister at Vandenberg Air Force Base.

This is the first time the four-stage missile, along with its reentry system, has been assembled in this manner.

Pathfinder is an inert vehicle used to prove mechanical procedures, and the electrical and software integrity of the test program.

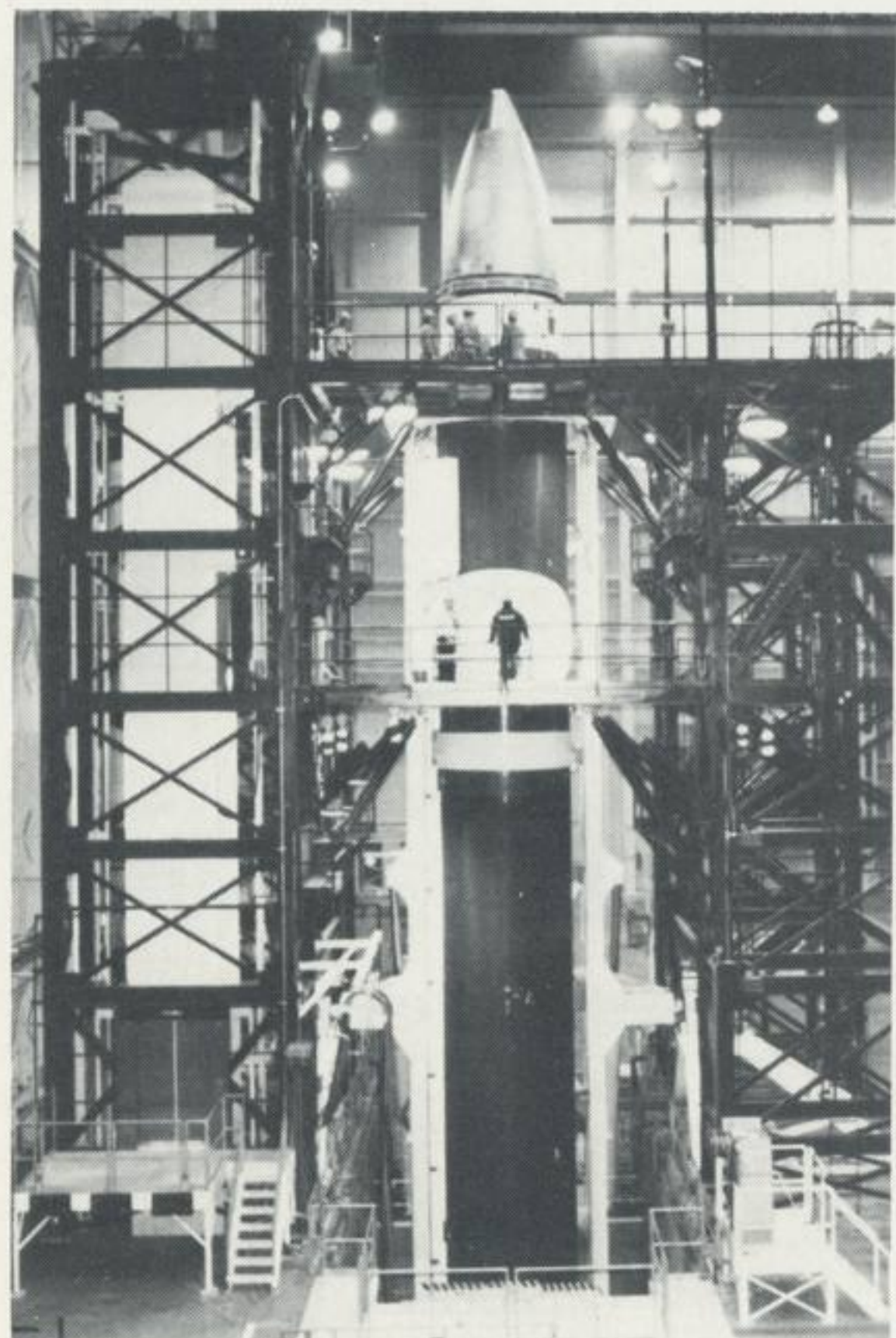
Pathfinder assembly and testing procedures are being conducted to ready the Vandenberg facilities for the first flight test of the new missile this year.

John R. Adamoli, director of the Peacekeeper test program at Vandenberg, is responsible for test scheduling, missile processing, and technical supervision of all integrated tests.

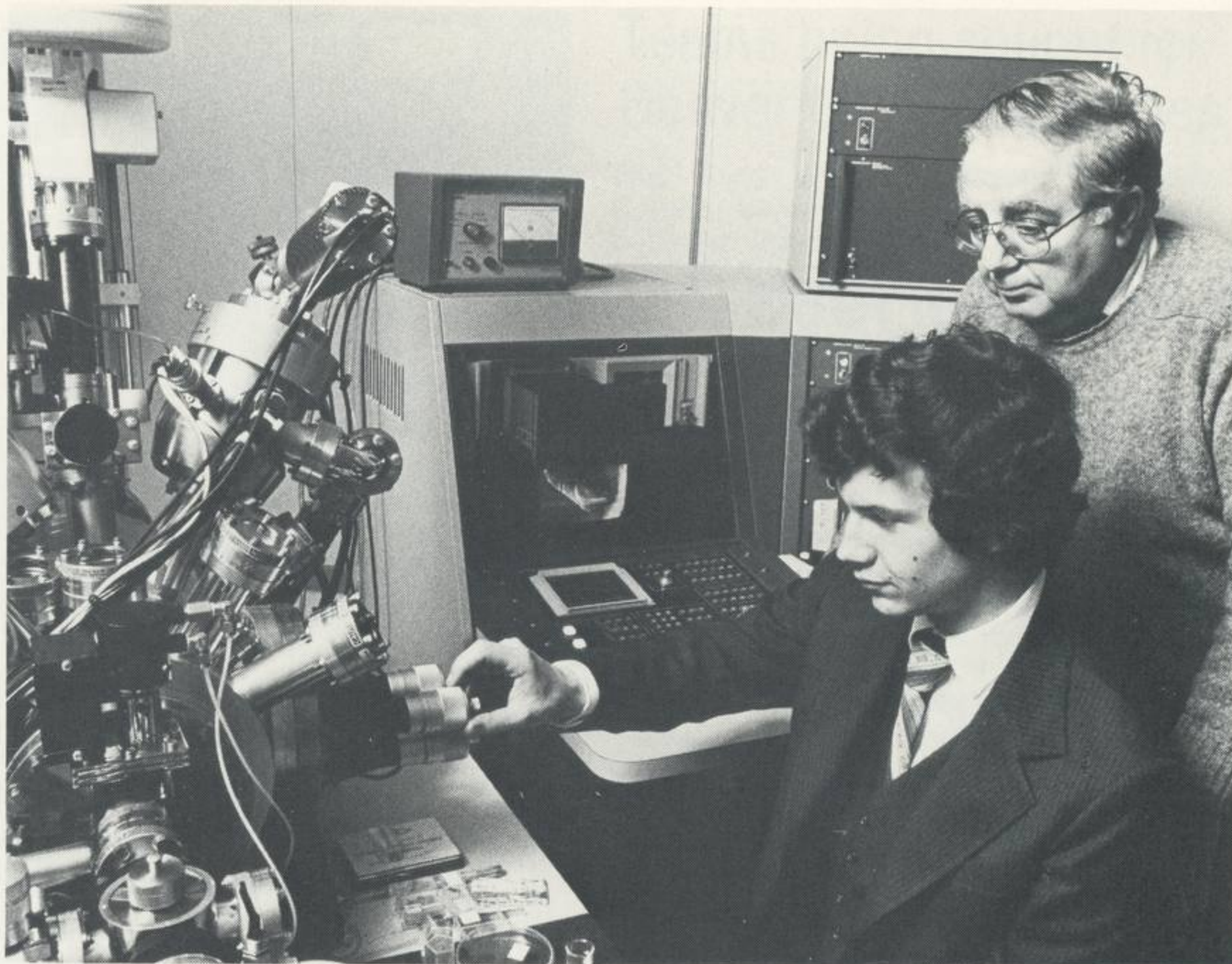
In addition to its integration role, Denver Aerospace produces the various instrumentation and flight safety systems used for gathering data during prelaunch test and at launch.

When test flights begin, a hot gas generator in the base of the erected, canisterized missile will provide the energy to eject the missile 100 feet from the canister. The first-stage engine then fires, sending Peacekeeper on its way down the Western Test Range to the Kwajalein target area in the western Pacific.

Twenty test flights are expected to prove the missile operational and to provide developmental and operational data to support its deployment.



*Peacekeeper pathfinder missile in assembly.*



*Sean Amberg, a Nebraska high school student whose experiment will travel into space aboard a space shuttle, and Martin Marietta physical chemist Dr. Harold A. Papazian examine a scanning Auger microprobe—a type of electron microscope.*

## Denver Aerospace to aid student mission

A Nebraska high school senior whose science experiment will be launched aboard a space shuttle will be aided in his work by Denver Aerospace. Sean Amberg plans to work here this summer and will receive technical assistance and materials for the design, assembly, and test of his experiment.

On a recent visit here, Amberg met Dr. Harold Papazian, a physical chemist who will help Amberg design, assemble, and report the results of his experiment.

"I've seen many favorable comments from the academic community about Sean's project," Dr. Papazian said. "They are all impressed with his understanding and his approach to the experiment."

Amberg's experiment will study the gravity sensing mechanism in the root tips of plants by examining cells from corn plants germinated in the zero-gravity environment of space.

As part of Amberg's experiment, corn seeds will be carried into space in the shuttle orbiter's cabin. As the seeds grow and develop in the weightless environment, they will be chemically stopped or "fixed" at various germination stages.

After returning to Earth, the cellular structure of each seed will be compared to seeds germinated on Earth using an electron microscope.

Experimental design requires triple enclosures around the seeds, growth medium, and fixing chemicals to prevent contamination of the space shuttle's carefully controlled environment. The experiment will be assigned to a shuttle mission approximately 5 months after the completion of assembly and testing.

Amberg will make final preparations for the experiment just before shuttle launch at Kennedy Space Center. He may also be present for the landing to return his experiment to Denver for microscopic examination.

"This is really a unique opportunity," Amberg said of his experiment's eventual journey into orbit. "There's nothing in my experience in Nebraska that I can compare it to."

Amberg is looking for a place to stay in the area—preferably with a Martin Marietta family. He can pay a nominal amount for room and board. Anyone interested in providing a home for the student for the summer should contact Dr. Papazian, mail stop 0560, ext 6803.

Sean Amberg is one of 20 winners selected from 2800 high school entries submitted nationwide to NASA and the National Science Teachers Association for the Shuttle Student Involvement program.

### ***On the cover***

The latest Space Shuttle External Tank began its 5-day trip from the Michoud division to Kennedy Space Center 1 month ahead of NASA's delivery schedule and 4335 pounds under weight specifications. The ninth External Tank is scheduled for a late 1983 flight on the third launch of the orbiter Challenger.

## Performance sharing plan distribution announced

The Martin Marietta Corporation's 1982 performance sharing plan distribution will be 25 percent of employees' 1982 contributions.

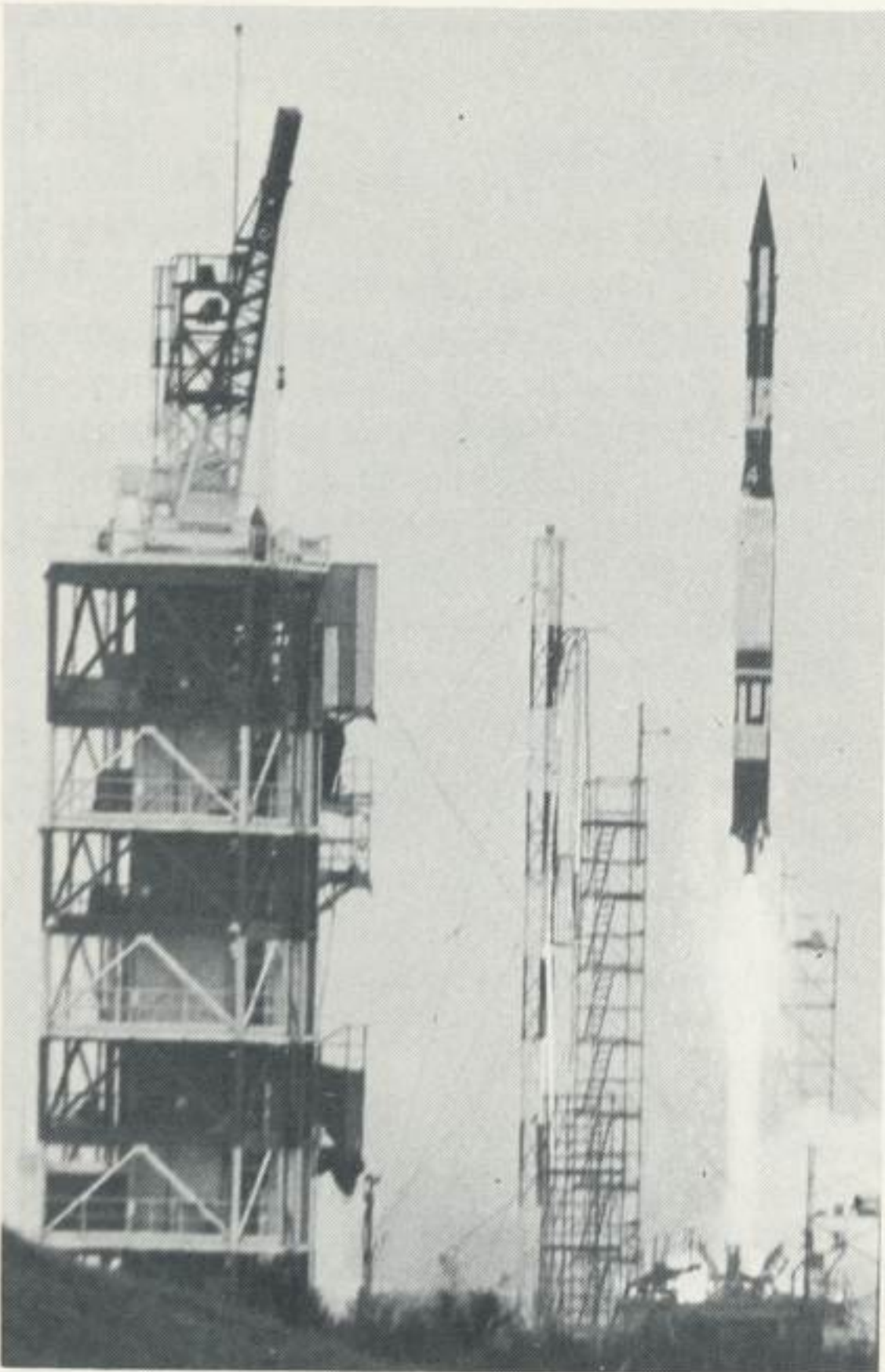
The distribution is determined by the performance of the Corporation in 1982 as measured by the return on shareholders' equity (ROE).

The plan was designed to provide, over time, an average distribution of 50.5 percent. The plan has been in operation 5 years and has performed very well, even though this year provided a smaller ROE than in the past. On the average, the plan has produced a corporate distribution of 66.1 percent.

In 1983, the declared interest rate for Fund B is 12.2 percent with contributions to the fund earning 0.964 percent on a monthly basis.

## Junior Achievement companies organized

Two spring semester Junior Achievement companies have formed with advisers from Denver Aerospace. Advising Bright Lite, a JA company producing and marketing auto trouble lights, are Marvin Herlitska, Arcini Crespen, Wendell Chun, and Raymond Anderson. Flame Guard, which makes home fire extinguishers, is advised by Robert Cecil, Julie Justin, Fred Stanske, and Leonard Franzblau.



Vanguard I lifts off from its launch pad at Cape Canaveral. The 45-inch diameter, 72-foot long vehicle was launched March 17, 1958, and the satellite is still in orbit. Its liquid fuel first stage produced 27,000 pounds of thrust; the liquid fuel second stage 7500 pounds; and the solid fuel third stage 2300 pounds. Vanguard went into space just 45 days after Explorer I. The final Vanguard was launched from Cape Canaveral September 18, 1959.

## Investment return good for employees

The performance sharing plan return on investment for employees during the past 4 years has proved the value of the program. Dominic Verrastro, employee relations manager, has compiled the following table for Fund A and Fund B. Fund C, the Martin Marietta common stock fund, began last year and data are not available.

### Annual Return on Investment

	1979	1980	1981	1982
Fund A	18.5%	31.8%	-4.2%	22.4%
Fund B	9.6%	10.0%	12.2%	12.4%

### Average Annual Return for the Funds

Fund A 14.42%

Fund B 10.9%

Fund A is the indexed equity fund and its value fluctuates with changes in the stock market. Fund B is a fixed income fund with a guaranteed interest rate set each year.

## Vanguard I is still in orbit

It has been said that had Vanguard I been launched the year Columbus discovered America, it would still be in orbit.

Launched from Cape Canaveral's Complex 18 at 7:15 a.m. on St. Patrick's Day 1958, Vanguard is the oldest orbiting satellite and will remain so for hundreds of years to come. Martin Marietta was the contractor and prime developer of the Vanguard launch vehicle.

Project Vanguard's mission was to put one satellite in orbit during the International Geophysical Year. The project was a major scientific and engineering success, accomplishing its mission in just 2 years, 6 months, and 8 days.

During this time, Vanguard personnel designed, manufactured, and launched a new, high-performance, three-stage launch vehicle. They also constructed a launch stand and developed range instrumentation—a highly accurate, worldwide satellite tracking system.

At Canaveral, Vanguard Pioneers will gather at Patrick Air Force Base March 16, the eve of Vanguard's 25th anniversary, to commemorate their achievement. The Pioneers were involved in the Vanguard program. Call Don Beck, at Canaveral operations, phone 853-9108, for additional details.

In Washington, D.C., a commemorative ceremony will be held at the National Air and Space Museum from 8:30 to 10:00 a.m., March 17. On March 20, a dinner will be held at Bolling Air Force Base. The contact for these events is Don Friedman, phone (301) 344-8106.



Labor's Community Agency, Inc. has honored Denver Aerospace for the company's "generous and continued support of the progress and goals" of the organization. Accepting the award is Dominic Verrastro, left, employee relations manager. Representing the agency are Jim Sinclair, center, the organization's treasurer; and, right, Nancy Womack, program coordinator. The company, a United Way affiliate, assists working people in locating and using area human services.

## Share-the-ride signup nears

Blue parking stickers will replace orange ones, which expire April 1, as part of the 1983 Share-the-Ride carpool registration program.

Share-the-Ride coordinator Lori Sharp will visit local facilities to help register new and existing carpools. Ms. Sharp will be at the south entrance, first floor cafeteria, Engineering building from 10:30 to 12:30 p.m. March 16; and in the SSB lobby from 10:30 to 12:30 p.m. March 17. On March 18, she will be in the second floor lunchroom at LSC from 11:00 to 12:30 p.m. and at South Lincoln from 2:30 to 3:30 p.m.

Carpool registration forms are available at Eng 124G. For information call ext 6605.

As part of this year's registration, a survey of carpool parking space use at the main plant will help reapportion parking spaces to create more unrestricted parking.

## Solar project recognized by professional engineers

Solar One, the world's largest solar powerplant, has received the 1983 Outstanding Engineering Achievement award from the National Association of Professional Engineers.

The powerplant uses technologies developed by Denver Aerospace, and the company was named to share in the achievement award.

Albert E. Hawkins, vice president of solar energy programs when the powerplant was built, accepted the award for the company. The award was presented jointly by the national association and its California society.

# Artist, wife provide skills to Gardens

The artwork of Phil Hayward is familiar to every Denver Aerospace employee. His work appears on the cover of the February issue of the Denver Aerospace telephone directory, has been on the cover of numerous proposals, and is displayed in the executive offices as part of the company's permanent collection.

Less well known are the contributions to the Denver Botanic Gardens by Hayward and his wife Peg. She writes a series of articles for the *Green Thumb*, the Botanic Gardens quarterly magazine. Each article, illustrated with a Phil Hayward drawing, describes a tropical plant growing in the conservatory.

Phil and Peg designed and edited the *Conservatory Plant Guide* for the Gardens. Peg conducts guide training classes there. She also plays violin in the Community Arts Symphony and raises patented roses.

The Haywards' interest in tropical plants has taken them to the Orient, the South Seas, Central America, and most recently Kenya and the Seychelle Islands off the African coast.

Phil has been in graphics at Denver Aerospace for 11 years. Before that he was art director for a Denver advertising agency for 25 years. His watercolors and acrylics of figures, landscapes, and animals have been featured in *Western Horseman* and *Ford Times* magazines and are displayed at selected galleries in the western U.S.

## Martin Marietta declares its regular quarterly dividend

Directors have authorized a quarterly cash dividend of 48 cents per share (\$1.92 annualized) on the common stock of Martin Marietta Corporation, payable March 31 to shareholders of record as of March 7.

### MARTIN MARIETTA NEWS

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Vandenberg Operations:	William Leary 2202

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

March 11, 1983



*Ihly Industries has been honored for its performance on subcontract work with Denver Aerospace. The award was accepted by company president, Eugene Ihly, center. Making the presentation for the Space and Electronics Systems division were Robert Johns, left, program manager; and John Smith, right, material manager. The company was cited for providing high-precision machine work expeditiously.*

## Employee's shuttle story featured in magazine

Ronald B. Schroer, space launch systems, authored the December 1982 cover story in *Western Engineer* magazine.

"Space Shuttle—the Colorado Connection" highlights ground and airborne electronics systems associated with the space shuttle produced by Colorado companies, including Denver Aerospace. Much of the article describes the shuttle's various electronics subsystems. The article also recognizes Colorado-born astronauts. Cover art for the December issue is a composite of Manned Maneu-

vering Unit photographs taken here.

The article points out the "getaway specials"—low-cost shuttle experiment pallets for space environment experiments conducted by individuals and companies.

Schroer has written a number of technical papers, but this is his first article published by a magazine. Schroer is subcontract manager for commercial Titan. He has been with the company for 22 years and is vice chairman of the Denver section of IEEE.

## Deadline is near for employee photo club contest

Entries in the 1983 photography contest, sponsored by the Platte Canyon Photo Club and the National Employee Services and Recreation Association, are due soon. This year's prizes include a video computer game system, AM/FM cassette clock radios, and gift certificates.

Two entries may be submitted in each of three divisions: color slides, color prints,

and black and white prints. Entries, accompanied by official entry forms and fees, must be hand-delivered to the recreation office, Eng 124, between 4:30 and 6:00 p.m., April 7 or 8. All employees and dependents are eligible. Entrants who are not members of the photo club will also be assessed a one-time \$1 fee. For entry forms and contest rules, call recreation, ext 6750.

## Loaned executives are rated highly by United Way

Denver Aerospace United Way loaned executives have been credited with helping the organization produce an 11.1-percent increase in contributions during the 1982 campaign.

Robert Garcia and Roseanne Summa were rated high in evaluations of their performance. Garcia worked in the energy division and Summa in the food and

beverage division of the United Way campaign.

Comments on the evaluations included "a super job" for Garcia and "sincerity and tenacity" for Summa. Both were rated "outstanding" or "above expectations" in the formal rating program used by the Mile High United Way campaign organization.

## Employee family earns American Families award

The Floyd Brown family is a finalist in the Great American Family awards program. Floyd is a Canaveral operations employee.

A committee of the Family Counseling Center of Brevard County, Florida, chose the Brown family because of its outstanding community contributions.

William Hoskinson, executive director of Brevard County's Community Services Council said, "Their strength as a family unit is what best describes them. The obvious care they show for each other just spills over to those around them."

Brown said his family always tries to do things together. This is most apparent in their church activities. Brown believes church involvement is one of the primary joys of life.

In the finals, nine families will be judged for unity that best exemplifies the good, the positive, and the encouraging. All nine families will be honored at a White House ceremony.

## Employee commended for course work

Successful completion of a 5-month, graduate-level program at the Defense Systems Management College has earned a commendation for James A. Zimmerman.

Zimmerman, who works in the mechanics section of technical operations, was called an "outstanding candidate" by Brig Gen Benjamin J. Pellegrini, commandant of the school.

In the triservice Program Management course, Zimmerman's studies included "intensive individual and joint efforts with officers and civilians of all services, as well as select middle and upper managers from the defense industry."

## Product assurance employee honored

Joseph D. Maestas has been named product assurance employee of the month. He is the first to receive the department award.

He is quality and safety program manager for the automated staff message processing central (ASMPC) contract program.

Maestas's efforts led to delivery of two van-mounted ASMPCs to the customer in Germany 2 months ahead of schedule.

Delivery followed an almost flawless test program in full compliance with contractual requirements. Maestas accompanied the delivery team and ensured that all objectives of field deployment, testing, and demonstrations were met.

The employee of the month award program was created to recognize and reward product assurance employees for special efforts benefiting the department and Denver Aerospace.



*Floyd Brown, Canaveral operations engineering, displays the Great American Family certificate presented to his family for being selected as a finalist to represent Brevard County, Florida, in the national awards program.*

## Allied officers are elected to Martin Marietta board

Edward L. Hennessy Jr., chairman and chief executive officer of Allied Corporation, and B. D. Forrow, senior vice president and general counsel of Allied, have been elected to the Martin Marietta Corporation board of directors.

They became members of the board under an agreement reached last September between Allied and Martin Marietta. At that time, Allied acquired a substantial stock ownership in Martin Marietta when it acquired all of the Bendix Corporation, which had attempted to take over Martin Marietta.

With the addition of Hennessy and Forrow, the Martin Marietta board has 15 members.

## Canaveral employees earn Gold Medallion awards

Nineteen Canaveral operations employees have been honored for "very special and significant contributions" to space flight programs.

James W. Weddle, quality, received the Launch Vehicle Flight Success award for his outstanding performance during the final checkout of Titan 34D-1. His technical knowledge and attention to detail on Stage II contributed directly to vehicle mission success.

The Launch Vehicle Readiness award was presented to Donald D. Dillenbeck, engineering, for outstanding performance during the countdown of Titan 34D-1. A potential countdown interruption was avoided when Dillenbeck determined the cause of an airborne electrical problem.

Colon E. Blackburn, quality, was singled out in the Innovation/Performance award category for discovering and reporting a shuttle payload integration facility structural anomaly. His alertness prevented significant cost and schedule effects on the facility's activation.

Sixteen other employees were given Innovation/Performance awards for achievement or performance "over and beyond assigned functions." Recipients of these awards were:

Floyd C. Brown, engineering; Willie F. Cannon, Nicholas T. Geso, Thomas H. Munro, Robert A. Rodamer, Louis Vittor, and Gerald E. Woodcock, test operations; Alfred E. Dorais and Joseph L. Parrish, personnel; Joseph L. Hostetler, IIAS; Nancy L. Kelchner, GSS; John R. Malpass, business operations; Whymon Myrick, Sharon R. Sedlar, and Harrison M. Solana, materiel; and Kenneth R. Shipe, SPIF operations.

Awards were presented by Felix J. Schefler, launch vehicles director, and Robert D. Rhodus, Canaveral operations director.



*Joseph D. Maestas, quality and safety program manager for ASMPC, right, receives product assurance employee of the month honors from George W. McGee, director of product assurance.*

## Self-sustaining facilities transition complete at Michoud division

The Michoud division has completed the transition of all plant operation services to Martin Marietta control.

The transition was made under terms of the facilities self-sustaining contract negotiated with the NASA Marshall Space Flight Center and became effective January 15.

Randy A. Tassin, director of facilities and plant services, headed the transition effort.

"We've integrated all services into our existing organizational structure," said Tassin. "The key to success is the elimination of unnecessary interfaces with subcontractors in order to complete the work. Instead of numerous subcontractors, we have consolidated and centralized all related functions under Martin Marietta direction."

Organizational changes made to support the self-sustaining program include:

- Robert L. Cashen is heading administrative support to consolidate all facilities services to provide administrative and production support, reproduction operations, office and communication services, and publications services.
- Facilities planning and control is under Philip D. Catarella.
- Facilities project management, under Arnold A. Gustafson, will be responsible for project engineering and construction as well as rearrangement and subcontract management.
- James E. Cullen heads facilities critical operations and maintenance, management of the Michoud Port operations, vehicle operations and maintenance, boiler plant operation, and roads and grounds.
- Robert G. Williams, who has joined facilities and services as chief of special projects, will serve as facilities liaison to the External Tank project.
- Raymond J. Lacombe has been named manager of security, and Dr. Vernon Fagan continues as medical director of the Michoud facility.

## Woman of the year is Michoud employee

Barbara Ory, Michoud division executive secretary, has been chosen woman of the year by the New Orleans chapter of Executive Women International.

She was chosen for the chapter's inaugural award for her outstanding leadership in a recent membership drive and for her nine years of dedicated service to the organization.

More than 5000 firms have memberships in Executive Women International.



Suggestion award winner Larry Dautenhahn, left, is shown with his father, Timothy Dautenhahn, who is in the contracts organization.

## Summer intern earns suggestion award

Larry Dautenhahn, a 1980 winner of a Martin Marietta Foundation scholarship and a summer intern at Michoud, recently suggested a way to save \$25,000 a year.

His idea was to reduce the size of resin samples taken by inspection personnel for testing by the quality laboratory. His suggestion earned a cash award of \$1490.

The resin is a thick, syrupy liquid. When mixed with another substance, it forms a solid, rubbery-textured component of superlight insulation that is applied to the External Tank. The material protects the External Tank from temperature extremes.

Dautenhahn's idea reduced the quantity of expensive resin needed per sample from about one-half gallon to a pint.

"The idea is simple, yet resulted in good cost savings," said Roy D. Marrs, chief of quality labs. "I really admire Larry. He's a high achiever and combines the technical and moral character we need. He has set a high standard for future summer hires in the labs."



Barbara Ory

## Teams being sought for Denver corporate games

The third annual Denver Corporate Games, an amateur athletic competition between teams from 24 companies, will be held June 4. Denver Aerospace teams have won the competition for the past 2 years. The games are hosted by the Denver Athletic Club and cosponsored by Metropolitan State College. Proceeds go to the Colorado Special Olympics, an athletic program for disabled adults and children.

To qualify, participants must be full-time employees for at least 30 days before the games, 18 years old, and must not have participated professionally in the event entered. First priority will go to employees active in company-sponsored league activities. Everyone is encouraged to participate.

For information or to register for any of the 23 events in tennis, racquetball, coed volleyball, swimming, running, golf, bowling, and track, visit the recreation office, Eng 124.

No telephone registrations will be accepted. Written registrations may be submitted to the recreation office, mail number 1321, with your name, age, badge number, mail number, phone extension, event desired, and past performance in that event as substantiated by average times or scores. The signup deadline is March 28.

## Recreation

**Pool**—Winners in the 1982-1983 Martin Marietta pool tournament are: Jerry Compton, first place in both eight- and nine-ball competition; Kayland Bradford and Stephen Forgie, second and third place winners in eight-ball play; Brett Spurrier and H. D. Casto, second and third place winners in nine-ball play.

**Softball**—A team managers meeting for the 1983 Wednesday night men's competitive softball league will be held at 4:30 p.m., March 16, SSB cafeteria. Softball umpires will meet March 22 at 4:45 p.m. in the SSB cafeteria. For information, call recreation, ext 6605.

**Golf**—To be sanctioned, existing golf leagues should register with the recreation department. Scheduled tournaments for 1983 include partner best ball, May 7 at Aurora Hills; and the Martin Marietta Open, August 6, at Riverdale. Winners of the partner best ball tournament will represent the company at the 1983 Denver Corporate Games.

**Computers**—The Waterton computer club will meet at 5:00 p.m., April 21, in the SSB sixth floor presentation room. For information, call recreation, ext 6605.