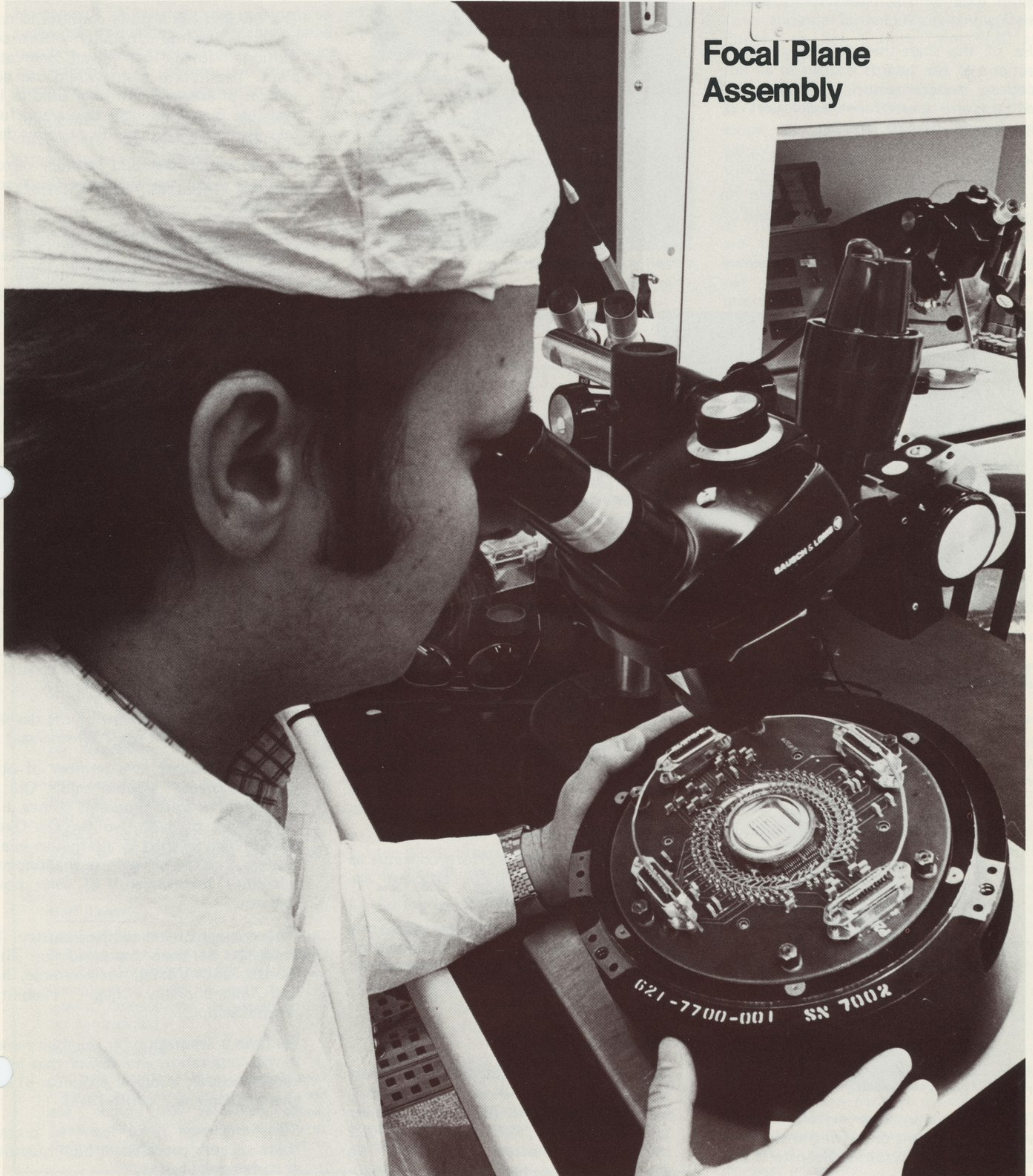


MARTIN MARIETTA

news

DENVER DIVISION

NUMBER 5/1979



New bulletin boards combine share-the-ride, classified advertising

New bulletin boards are being installed in high traffic areas in division facilities to provide employees a way to sell or buy personal items, to establish car pools, to obtain RTD bus information, and to keep up to date with activities sponsored by professional and industrial relations.

Use of the share-the-ride and classified sections of the boards is open to all employees, subcontractor personnel, and military and government employees assigned to the Denver Division.

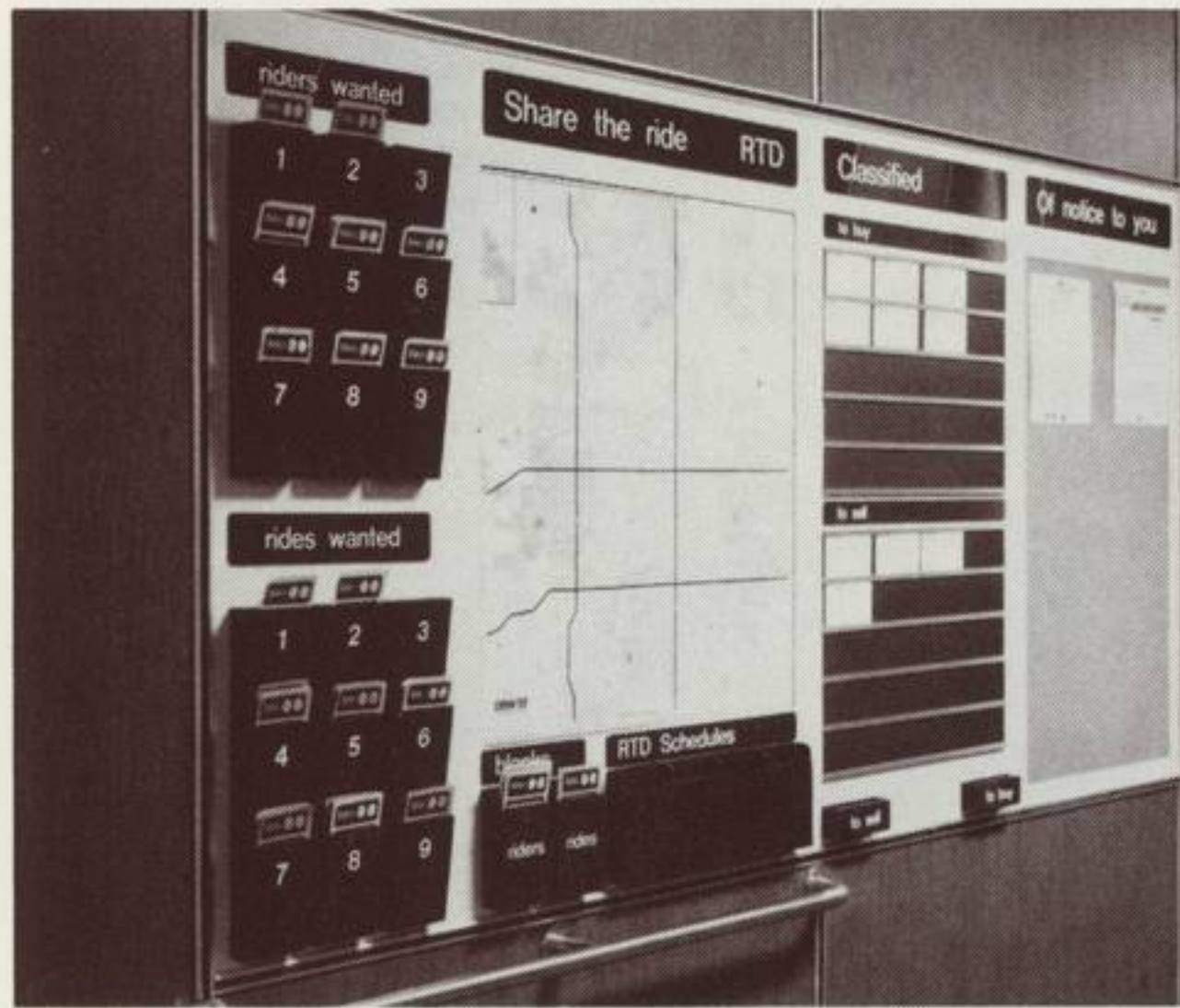
Cards for both share-the-ride and classified ads are provided at the boards. Instructions for their use are printed on them. Only these cards are to be used on the boards.

Boards will be monitored by professional and industrial relations personnel.

Among the rules for the new classified ad program:

- Only items of personal property owned by the employee or immediate family may be advertised.
- Advertising of commercial products or services is not permitted.
- Real estate may not be advertised.
- Printed advertising, photographs, or business cards are not permitted.
- Classified advertising cards may remain posted for 10 days.
- Employees posting cards are responsible for removing them when an item is sold or purchased.

With the installation of the new boards, posting of advertising or other notices will not be permitted on walls, doors, or in elevators.



New boards for share-the-ride and classified advertising information have been installed in the engineering building, the administration building, SSB, EMF, the Denver Systems Center, and the Federal Boulevard facility.

Division wins multiple contracts for solar energy

The Denver Division has won every solar thermal energy program on which it submitted a bid in the past eight months, bringing in about \$8 million in business.

"There was one exception to this win record," H. C. Wroton, director of product development said. "We had a request to submit a variety of new ideas for heliostat designs. We proposed four with no expectation that contracts would be awarded on all of them. We were delighted that two were selected. One award would have been considered a win."

As interest in solar energy increases, Wroton sees a substantial future for work in solar programs. "Solar energy is not the way to meet all the nation's energy needs, but it will certainly provide an increasing portion of the future power."

The division's interest in solar thermal work is in systems design and analysis for central receiver systems, heliostats, and control systems.

Current solar thermal business includes:
Solar central receiver technology

The division is working on system design and system development for central receivers as well as hardware for testing systems and materials.

Growth is expected as efforts continue to develop new and more efficient approaches to central receivers.

In a research and development phase one contract, the division has formulated an alternative approach for a 300-megawatt central receiver and is now involved in phase two of the program.

Heliostat programs

The division built and installed heliostats in the only major heliostat field existing in the United States. The central receiver test facility near Albuquerque has 222 division-built heliostats. Wroton said, "We are the only ones to have produced helio-

stats on that scale. We are one of the leaders in heliostat technology."

Division heliostats and controls will be involved in an evaluation program this summer that could lead to a contract for 1800 heliostat units to be used at a megawatt pilot plant in Barstow, CA.

In the future, large power plants could require as many as 64,000 heliostats.

Hybrid power systems

The division has a study contract to combine solar energy capability with a conventional fossil fuel power generating plant. The hybrid plant would use both sources of energy, with solar used as it is available during daylight hours and fossil fuel at night or on cloudy or rainy days.

Wroton sees a large and practical retrofit business using the hybrid power system concept.

"Many existing power plants in Sun-belt states can be modified to add solar energy collectors and reduce fossil fuel use," he said. "Industrial firms can also supplement power and energy requirements with solar installations."

Molten salt system

In the search for the best way to collect, store, and transport the Sun-created heat to power generation stations, the division has been studying the use of molten salt. Conventional fossil-fuel power plants have no storage and the working fluid is steam. In a stand-alone molten salt power plant, the energy source is the Sun and the hot salt is used to keep the plant operating overnight.

A phase one study contract has been completed and phase two has begun to design, build, and test such a system. Thermal, static, dynamic, and structural tests will be conducted at the central receiver test facility in New Mexico.

"We are in the forefront of the development of molten salt use," Wroton said.

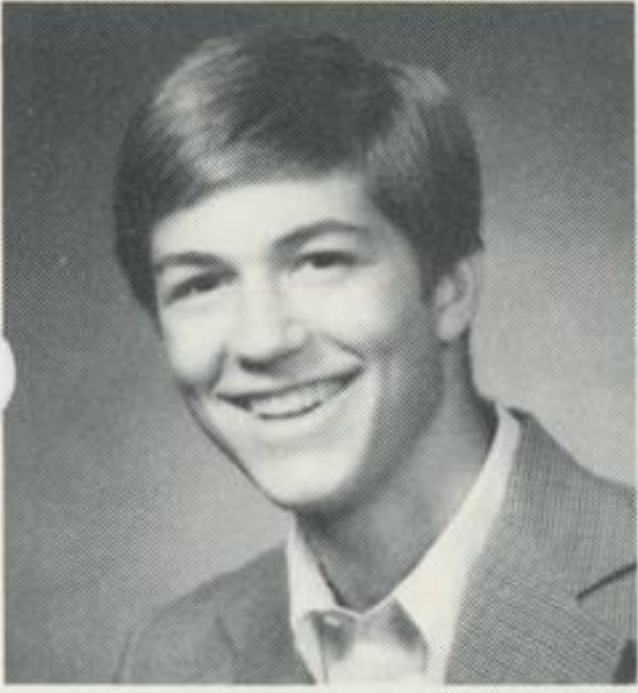
"We are involved in a number of other solar programs," Wroton said. "Our involvement in solar programs comes, I believe, from perhaps two thrusts. One is the growing interest in alternative energy sources, and the other from the long-term reliability requirements of solar power systems."

"We are a high reliability industry. The products we have produced for Titan, Skylab, and Viking, for example, have had exceptionally high reliability," Wroton said.

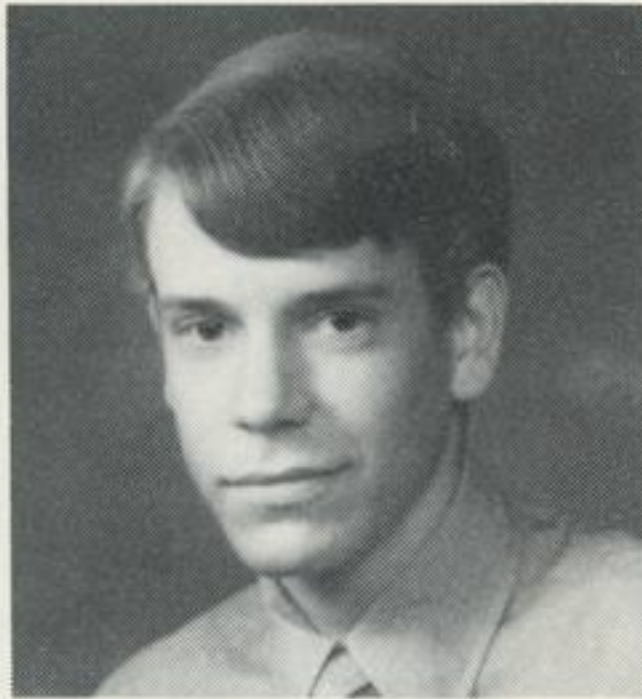
We have a reputation for reliability and it is that reputation and ability that makes us, we believe, a logical producer of solar energy products," Wroton said.

"Our challenge is to learn to produce these reliable products in high quantities at commercial prices."

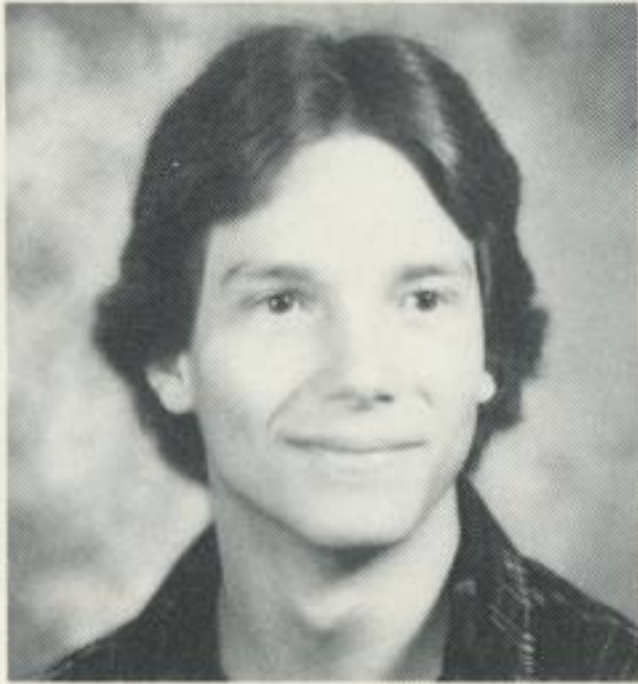
Seven earn Martin Marietta scholarships



Samuel J. Dennis



Ernest L. Edgar



Douglas A. Gerecht



Laura A. Hershey



Douglas N. Krening



Mary C. Patchett



Shari L. Yablonski

Seven of the 1979 Martin Marietta Foundation academic scholarships have been awarded to sons and daughters of division employees.

Those selected are Samuel J. Dennis, Ernest L. Edgar, Douglas A. Gerecht, Laura A. Hershey, Douglas N. Krening, Mary C. Patchett, and Shari L. Yablonski.

The scholarships, initially for one year and renewable for three more years based on academic achievement, are for \$2,000 each year.

Selections were made by a three-member committee not associated with the Martin Marietta Corporation.

Samuel J. Dennis is the son of Mr. and Mrs. Jackson Dennis, His father is an engineer at the division. A senior at Wheat Ridge High School, Samuel has applied at Harvard University where he plans to major in social science and Russian. He has participated in Student Government in high school and is a scuba diver and competitive swimmer. Samuel lists photography and autos as hobbies.

Ernest L. Edgar is a senior at Douglas County High School in Castle Rock. He is the son of Mr. and Mrs. John M. Edgar. His father is an engineer. Ernest plans to attend the Massachusetts Institute of Technology and major in electrical engineering and computer science. He is a member of the National Honor Society and is captain of the chess team. He has done an in-depth study of piezoelectricity and has designed and built several electronics projects.

Douglas A. Gerecht expects to attend the University of Colorado to study astronomy, physics, and astrophysics. A senior at Thornton High School, he is the son of Mr. and Mrs. John A. Gerecht. His father is a Denver Division foreman. He plays in

the school's jazz and concert bands as well as a church band and orchestra. Douglas includes writing computer programs in his special interests and taught himself BASIC, a computer language, in an independent study program.

Laura A. Hershey plans to major in political science and journalism at Stanford University when she is graduated from Littleton's Heritage High School. She is the daughter of Mr. and Mrs. Richard H. Hershey. Her father is an engineer at the division. High school interests have included debating and journalism because, as Laura says, they include research, analysis, and communication.

Douglas N. Krening, a senior at Littleton's Arapahoe High School, expects to attend the University of Colorado to major in either aerospace engineering or engineering physics. He is the son of Mr. and Mrs. Malcolm E. Krening. His father is a division staff engineer. He has a wide range of interests, including astronomy, music, reading, backpacking, and tuning cars.

Mary C. Patchett is the daughter of Mr. and Mrs. Robert A. Patchett. Her father is a division senior staff engineer. A senior at Lewis-Palmer High School at Monument, Mary has been accepted at the University of Northern Colorado where she expects to major in musical theater. She is senior class president and is active in a variety of school organizations. She has performed in musical and dramatic productions.

Shari L. Yablonski expects to major in chemical engineering at the University of Colorado. The daughter of Mr. and Mrs. James R. Yablonski, Shari is a senior at Denver's Abraham Lincoln High School. Her father is an electronics technician. She is active in sports and musical groups and likes to read science fiction.

Focal plane assembly program moves into follow-on production

The hybrid focal plane assembly program that began in 1976 with the design and production of three prototype units is completing one production contract and beginning a limited follow-on production of the unit.

Virgil Young, manager of the program, says the device is technology outgrowth of the photo sensor array (camera) used on the Viking camera.

The Viking photo sensor array had 12 photo sites—individual sensing elements.

The new product has 10,368 individual sensing elements, providing greater resolution and the capability for much higher scanning speeds.

"We have taken a commercially developed sensor designed for facsimile page readers and upgraded it to aerospace specifications and reliability," Young said.

The heart of the focal plane assembly is the linear image sensing array (LISA). The LISA has six charged coupled device chips measuring one inch (2.5 centimeters) by 60/1000ths of an inch (1.5 millimeters). Each chip has 1728 photo elements and the chips are aligned within 15 microns (600 millionths of an inch) in the same plane.

"Our microelectronics lab has developed the technology for this extremely precise assembly," Young said. "Based on the technology available when the program began, the tooling and packaging design seemed impractical. However, it was successfully designed and developed under the technical leadership of Lee Johnson.

"The problems encountered along the way brought many division support groups and facilities into the program with specialized analysis, testing, and material support. This cooperation helped us succeed.

"More than 100 people, either at Martin Marietta or a supplier facilities, made significant contributions to the program," Young said.

Inside vehicle, Paramedic Kief and Tomlin check radiotelephone and electrocardiograph equipment.



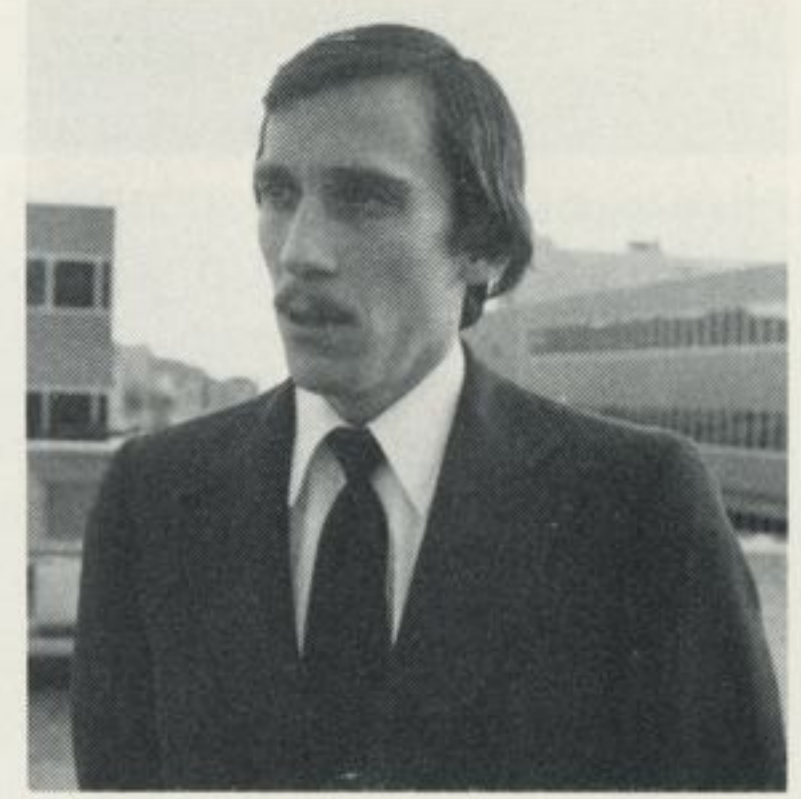
Advanced life support vehicle, below, is fully-equipped to handle all medical emergencies.



R. N. Lazzari



L. B. Clark



R. A. Genochio



M. A. Tomlin



J. S. Kief



R. A. Mack

Paramedics added to upgrade emergency medical services

"The Denver Division's main plant is in many ways like a small city, with all the requirements for citizen service of such a city," says James E. Greichen, director of security.

"We have our own fire department, police protection, and street maintenance, for example. Now we have significantly upgraded our emergency medical service."

Licensed paramedics have been added to the plant protection staff and a new ambulance—technically an advanced life support vehicle—is in service. Paramedics are on duty 24 hours a day, seven days a week to provide the best available emergency medical service for employees.

In addition to the paramedics, at least one other plant protection employee certified in advanced first aid is on duty at all times. The paramedic and the first aid expert respond to all medical emergencies and accompany the division's fire department on all its calls.

Response time at the main division facilities is five minutes or less. In the past, only elementary first aid was available on-site and it took about 17 minutes for outside help to arrive.

Paramedics on staff are L. B. Clark, R. A. Genochio, J. S. Kief, R. N. Lazzari Jr., R. A. Mack, and M. A. Tomlin. Each is li-

censed and has had a minimum of 1500 hours of formal and in-service training. To maintain their licenses, each must obtain a minimum of 150 hours of continuing education credits each year.

The division's paramedics have from two to five years' experience with community emergency medical services.

The work of the paramedics is supervised by Dr. David Ashmon, the division medical director, and Dr. Warren L. Williams, coordinator of emergency medical service at Swedish Medical Center. Dr. Williams also supervises the work of other paramedics in communities served by Swedish.

"While television may glamorize the work of paramedics," Greichen says, "the programs have made people aware of the value of the service."

"Our advanced life support vehicle is equipped much like those seen on television," he reported. "We have equipment to handle all types of emergencies, including the radiotelephone and the electrocardiogram transmitting device that play such a prominent role on the TV programs."

Paramedics are trained to immediately proceed with treatment that will stabilize the patient. After initial treatment, they consult with the emergency medical staff at Swedish Medical Center by radiotelephone to report the patient's condition and receive, if necessary, instructions for further treatment.

Greichen said employees should never hesitate to call for help. "We would much

rather arrive on the scene and find we are not needed than to be called too late and be unable to provide treatment that could save a life. Minutes are important."

To report an emergency from the main division facility dial 3333.

Emergency medical service at division locations away from the main plant is provided by community paramedics. However, the division emergency telephone numbers should be used. They are:

From Denver Systems Center	81-3333
From West Point	81-3333
From CCMS (Federal Boulevard)	8-3333
From Greenwood Plaza	973-3333

Division artist wins award in poster contest

Charles L. White, an artist in the division's graphic services, has been awarded third place in the 1979 National Small Business Week poster contest.

The contest was conducted in an effort to publicize Small Business Week, May 13-19.

White's poster will be displayed at the Small Business conference May 15 in Washington, DC.

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Denver Division
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April 1979

Intern applications are being accepted

Applications are being accepted for a one-year technical operations internship at Martin Marietta Aerospace headquarters.

The intern will be selected from outstanding engineers in all Aerospace divisions and will begin the internship in August or September. Serving on the staff of Normam R. Augustine, vice president for technical operations at Aerospace headquarters, the intern will gain experience in technical and management functions throughout the Aerospace company.

Applicants should have a minimum of three years' experience as a Martin Marietta Aerospace employee.

Denver Division employees who want to apply for the internship should contact Roy Yamahiro, professional and industrial relations, for information. Applications should be submitted to W. O. Lowrie, division vice president for technical operations.

Selection will be made May 15.

HELP telephone rings often for assistance



Betty Purkey

Denver Division employees call for HELP about 75 times a day, according to R. H. Snodgrass, manager of plant operations, maintenance & acquisition department. Snodgrass' department is responsible for all calls for HELP, and satisfying the calls. HELP is spelled whenever extension 4357 is dialed requesting maintenance assistance. The calls are received by Betty Purkey or Sol Trujillo from 6:30 am until 4:00 pm.

The needs of an organization as large as the Denver Division make the scope of HELP far ranging. Fortunately, true emergencies are rare but when they occur they get top priority. Production stoppages, testing interruptions, and broken pipes are typical of this category. Purkey and Trujillo are trained to quiz callers as to the severity of their problems so the proper skill can be assigned to the request. Although each caller understandably believes his or her request to be the most important, HELP personnel are obligated to establish reasonable priorities. "While employees may initially tend to resent the questioning," Snodgrass said "they all would agree that rewiring a production machine is more critical than replacing a single office light. Generally, employees are very understanding, once we explain the situation."

There is an average of 100 employees for every maintenance craftsman. During 1978, these craftsmen received and completed 20,000 HELP requests. Through February of this year 3,800 requests have been received, indicating that 1979's calls will equal 1978's. It is understandable that HELP personnel at the end of a busy day could use some!

On the cover

Technician Kirk Scroggy works on the hybrid focal plane assembly.

Recreation Calendar

Softball League

An organizational meeting for men's, women's, and coed softball leagues will be held Thursday, April 19 at 4:30 pm in the engineering building second floor presentations room. Team captains and all interested in playing should attend. Rules, night(s) of play, and the selection of a commissioner will be discussed.

Hunter Safety

The Skyline Hunting and Fishing club is offering a series of hunter safety training classes. The next series will be held April 17 to 19 and April 24 to 26 at the Denver Systems Center on Wadsworth. Classes meet from 7 to 9 pm and cost \$4.50. Classes are also being planned for October and November. Cost of the fall classes will be \$7.50. For information on classes, call James Spaulding, ext 3249, or Richard Benson after 5 pm at 985-3728.

Golf Lessons

Lessons by Greg Thibault, golf professional at Arrowhead Country Club, are being offered for \$25 for a five-lesson series, twice a week for five weeks. Contact the recreation office for information.

Bowling Leagues

If you missed the organizational meeting and want to bowl in a league, contact the recreation office. League play will begin in late May at Belleview Lanes.

Dance Classes

Classes in exercise dancing and belly dancing will be offered if a minimum of 15 sign up for each class. The hour and a half classes will meet once a week for six weeks. Cost is \$15.

Discount Tickets

Elitch Gardens opens for the season May 4. Discount coupons—\$5.50 for a \$7 ticket—will be available at the recreation office in late April.

General Cinema Theater discounts of \$1.85 are available for all general theaters in the United States. The \$2.15 tickets may be used in Denver area theaters: Cherry Creek I and II; Villa Italia; Southglenn I, II, and III; Aurora I, II, and III; Cinderella City I and II; North Valley I and II; and Westland I and II. Tickets are valid for one year.

Mann Theaters discount tickets (\$2 for \$3.50 tickets) valid through June 26 may be used at Century 21; Tamarac Six; Aladdin; Lakeridge Twin; Centre; and Esquire.

(Checks for theater tickets should be made payable to Martin Marietta Aerospace.)

Walt Disney's Magic Kingdom club discount tickets are available at the recreation office.

Group Travel Program

Las Vegas, Reno/Tahoe, Jamaica, Caribbean cruises, Mazatlan, Hawaii-Waikiki; contact the recreation office for information.



Jack L. Withrow has been named manager of materiel at Vandenberg operations. He had the same position at Canaveral operations. At Canaveral, Eddie Lee Roberts will be acting manager of materiel.

Pathfinder external tank at Kennedy Space Center

The pathfinder external tank, formerly the ground vibration test article, arrived at Kennedy Space Center for a series of tests in preparation for handling the first flight Space Shuttle vehicle later this year.

Pathfinder will be used to check and verify the systems and procedures to be used for movement and stacking the three main components of Space Shuttle—the orbiter, external tank, and solid rocket motors. It will also be used for training personnel in various operations on the huge mobile launch platform that will transport the Shuttle to the launch pad.

A planned series of fit checks will also determine that handling equipment and transport procedures have been properly designed and built.

Following successful completion of the ground vibration tests at the Marshall Space Flight Center, Huntsville, AL, earlier this year, the pathfinder was transported by barge to Florida, an 11-day trip down the Mississippi River and through the Gulf of Mexico.

Later the pathfinder will return to Michoud for evaluation, refurbishment, and use on a Space Shuttle flight in the early 1980s.



The first Space Shuttle external tank delivered to Kennedy Space Center was recently moved to the vehicle assembly building. The tank is not a flight version but is a ground vibration test article used at Marshall Space Flight Center.



Walter Hood explains the antique engine to one of the seven complete train sets he recently donated to the New Orleans Goodwill Rehabilitation Center.

Employee donates model train sets to rehabilitation center

"Collecting trains is a lot more than plain fun," Michoud's Walter Hood explains. "Trains are also educational. They're a link to our history; a way to learn about lobbies, unionization, and more."

Recently Mr. Hood donated nearly \$3,000 worth of model train sets to the New Orleans Goodwill Rehabilitation Center. His work calls for frequent relocating and he was concerned that the sets might be damaged. However, he has already begun another collection with smaller trains that are easier to move.

Hood, who is a finance estimator at Michoud operations, says his love of collecting trains is simply continuing his boyhood dreams about the railroad.

Hood's donation included seven complete train sets with power packs, layouts, trees, trucks, buses and tables. One of his favorite sets, a most enviable item among train buffs, is a replica of the famed Crescent City Limited.

When Hood isn't buying and selling trains in his spare time, he's learning about them. "I keep in touch with train buffs throughout the country and regularly read six national and international train publications," said Hood.

Why should a grown man be interested in collecting trains as a hobby? "This is the type of hobby that changes constantly and can always grow," Hood said. "I've been collecting trains for nearly ten years and probably always will."

A native of Orlando, FL, Hood has been with Martin Marietta at Michoud for two years.