

MARTIN MARIETTA

news

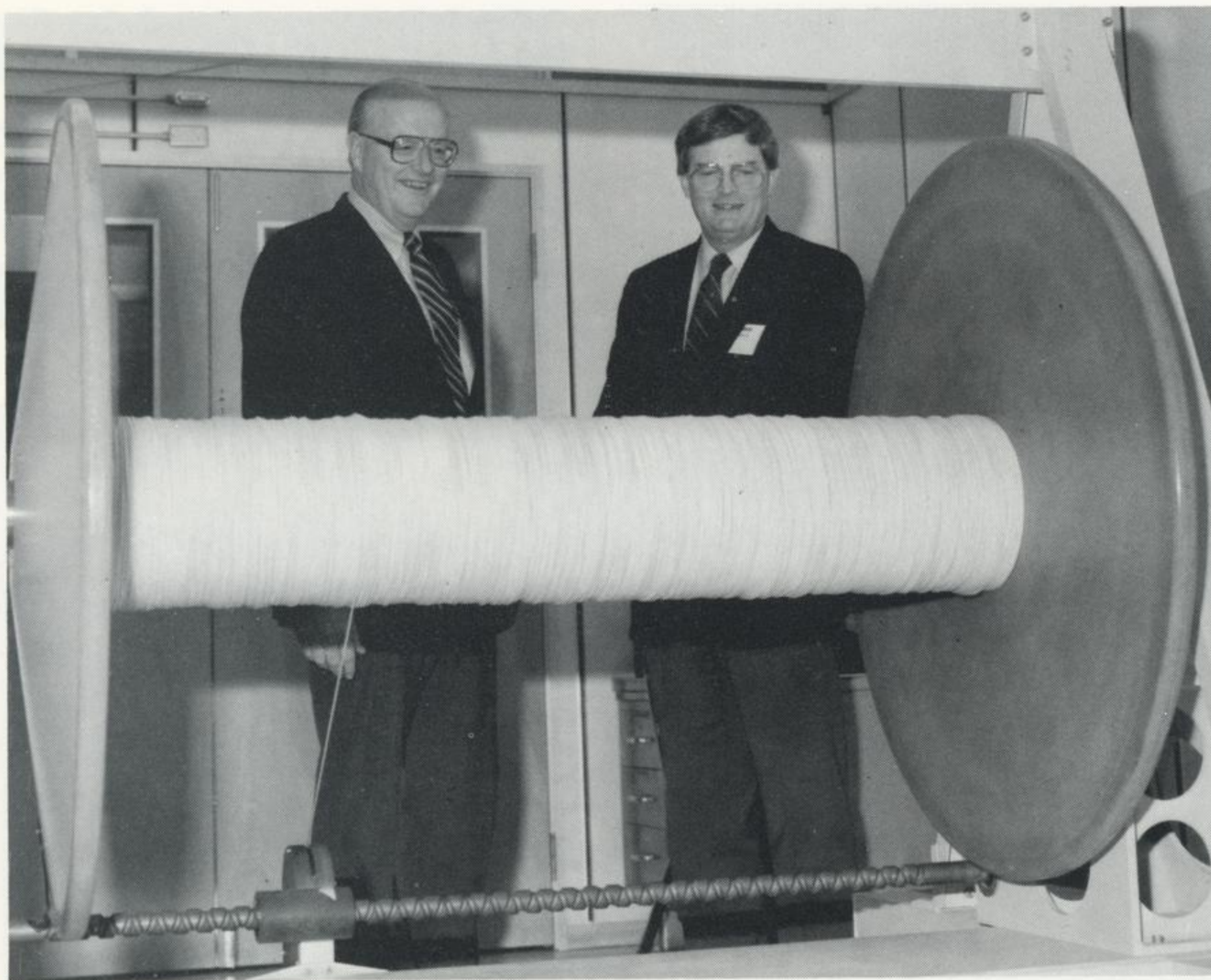
ASTRONAUTICS GROUP

September 22, 1989

Number 20

# Space-Based Interceptor work continues





### Teets and Lee meet

Jack Lee, director of the Marshall Space Flight Center, Huntsville, Ala., right, meets with Peter B. Teets, Astronautics Group president, at the Tethered Satellite System Simulation Test Bed. Lee visited the Astronautics Group to talk about the Tethered Satellite System and the Transfer Orbit Stage. The satellite is a reusable device designed to be deployed from and retrieved by the Space Shuttle orbiter using a tether up to 62 miles long.

## Titan II will launch SDI Midcourse Space Experiment

An enhanced U.S. Air Force Titan II space launch vehicle, modified from its original mission as an intercontinental ballistic missile, has been selected by the Strategic Defense Initiative Organization to launch an SDI experiment in 1992.

The Midcourse Space Experiment, designed to collect target detection and tracking data, will be launched on the Martin Marietta-built Titan II from Vandenberg Air Force Base, Calif. Eight strap-on motors will be added to the launcher's first stage. In addition, the amount of propellant for the attitude control system on stage two will be increased to provide higher orbit circularization.

The Titan II can launch payloads weighing between 4,200 and 7,500 pounds into polar low-Earth orbit. Payload capacity depends on the

number of strap-on solid rocket motors added to the basic two-stage vehicle.

Space Launch Systems was awarded a contract in January 1986 by the U.S. Air Force Space Systems Division to refurbish and launch 14 Titan IIs that had been decommissioned as ICBMs.

The first two Titan II space launch vehicles were launched successfully from Vandenberg on Sept. 5, 1988, and Sept. 5, 1989. Subsequent launches will continue into 1995.

Space Launch Systems is studying improvements to Titan II, including a lightweight composite forward skirt and payload adapter, a low-cost minimally refurbished configuration, upgraded avionics, offpad payload encapsulation, and a configuration to carry two or more lightweight satellites. ■

## Ethics reminder

Employees who have concerns about Martin Marietta business practices or who have questions regarding ethics should contact the Astronautics Group Ethics office, Ext. 7-4530 or 1-9959, or the Corporate Ethics office, 1-800-338-4427.

The Martin Marietta "Code of Ethics and Standards of Conduct" pamphlet states, "Martin Marietta Corporation will conduct

its business in strict compliance with applicable laws, rules, regulations, and Corporate and operating unit policies, procedures and guidelines, with honesty and integrity, and with a strong commitment to the highest standards of ethics. We have a duty to conduct our business affairs within both the letter and spirit of the law." ■

## Company store opens soon at Waterton

A large variety of goods, as well as items bearing the company logo, has been ordered for the Astronautics Group's first company store. Scheduled to be open soon, the store will be located in the Engineering Building's old executive dining room number two, adjacent to the first-floor cafeteria.

The store, which plans to expand on discount services similar to those the Employee/Services and Recreation office offers, will provide convenient, economical, on-site shopping for jewelry, shirts, movie rentals, sportswear, desk top accessories, hats, jackets, and items related to space programs and exploration from the earliest NASA missions to the present.

Employees will be able to shop at the store Monday through Friday, before or after work, and during lunch breaks.

A second company store soon will be opened at the Deer Creek Facility. ■

## On the cover

The Space-Based Interceptor (SBI), being studied as part of the Strategic Defense Initiative, will be able to intercept ballistic missiles and reentry vehicles without use of an explosive warhead. Instead, it will destroy the target with the force of impact at extremely high speed. Space Systems has a contract to define concepts for SBI. Under the contract, Space Systems, with the Electronics & Missiles Group in Orlando, is conducting a System Concept and Integrated Technology Study. A wide range of technologies is being researched as part of the interceptor program representing a space-based kinetic energy research effort.

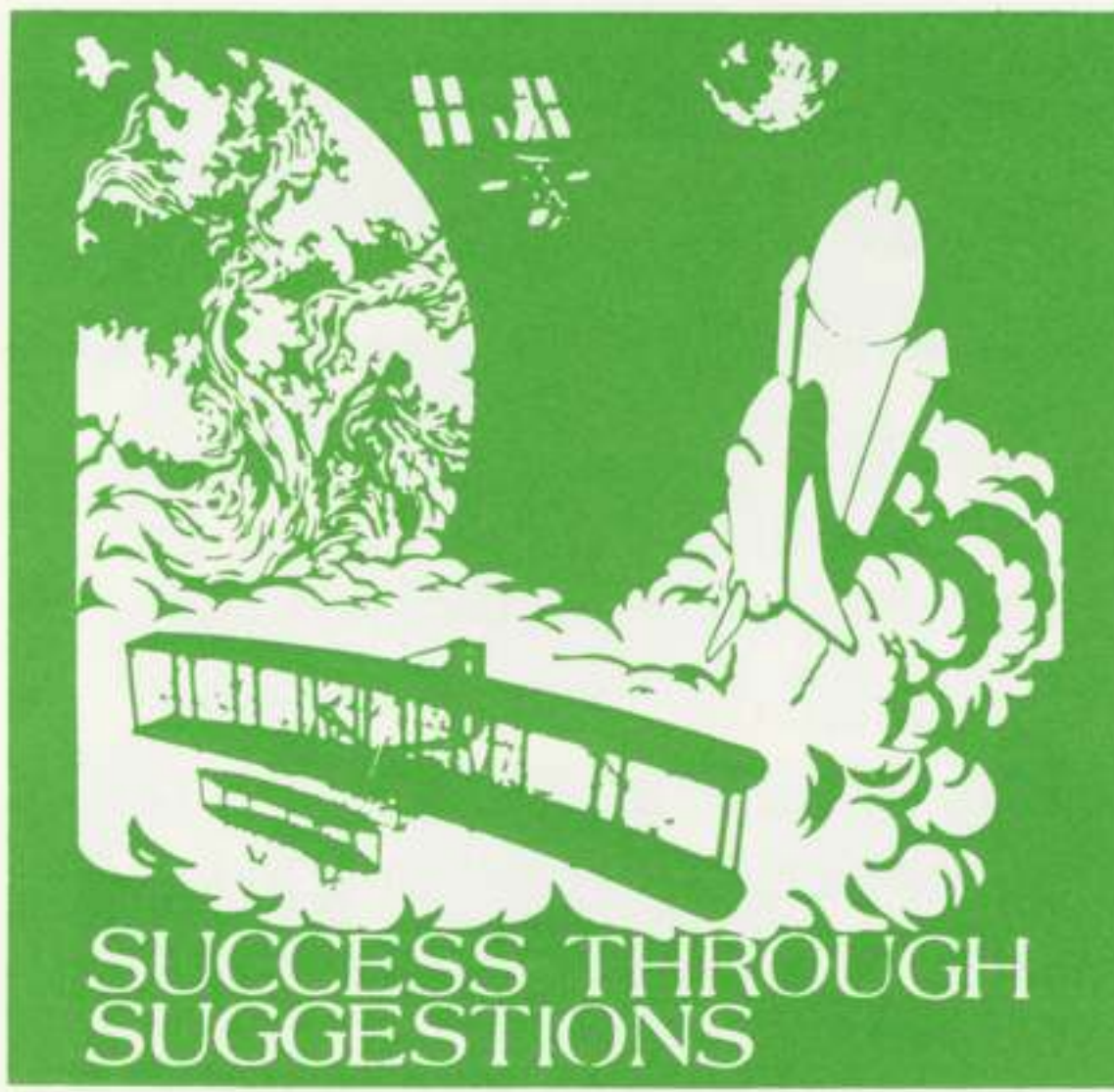
## Corporate news

### Business development VP named at Electronics & Missiles Group

The Electronics & Missiles Group has named Dr. James A. Tegnalia to be vice president of business development upon the planned retirement of Howard F. Keyser in December.

Dr. Tegnalia, who has been vice president of Advanced Tactical Missiles for the Missile Systems company, previously was vice president of engineering at corporate headquarters in Bethesda. He previously served 12 years with the Defense Advanced Research Projects Agency (DARPA) and from 1985 to 1987 was deputy director.

Keyser is completing 29 years of service with the company, having joined the corporation at Denver in 1960. ■



## Suggestion awards

The following employees recently received Success Through Suggestions awards:

- **Jo Ann McCurry and Christene Hefkin-Wall**, for a suggestion that calls for Teflon hold-down straps to be mounted to support the wires coming from the mother board, which would prevent the wires from moving during routing/termination on the Peacekeeper.
- **Davoud Ashouri**, for a suggestion for the creation of a tool titled "Pre-Status Information Sheet," which alleviates the problem of tracking the status of the engineering work in Space Launch Systems.
- **Philip M. Bastnagel**, for a suggestion to use a computerized stress analysis rather than a hand-written system at the "all defective barrel," on the second floor of the factory.
- **Jesse P. Boatman**, for a suggestion of a method to maintain the cleanliness and integrity of the breather sets used in shipping Titans from the factory to launch sites.
- **Preston B. Brewer, Jr.**, for a suggestion that prefabricated connectors/brackets be purchased, which would enable the Tool Fabrication department to identify and install the brackets. He also has suggested that wire harness tools for all Titans be procured at the 90-degree angle required for use before they get to the shop.
- **Tina Marie Casperson**, for a suggestion that magnetics be installed and wired before the "U"-shaped components at EMF III.
- **Terry L. Childs**, for a suggestion that the four fire extinguishers at GEPS I and II be more clearly identified.
- **Lowell D. Chisholm**, for a suggestion that the process of running lab tickets through quality control per procedure be eliminated to enhance the operation.
- **William J. Cronin**, for a suggestion that the 1/2-inch tooling holes be bored to 5/8-inch during the finish operation on the longeron aft skirt for Titan II.
- **Jerry L. DeHerrera**, for a suggestion that the halogen leak detector be used only on those parts that have areas of entrapment for cleaning areas related to Titan programs.
- **Karen L. Foos**, for a suggestion that a bar-code application be used for document control as well as for other areas requiring "state-of-the-art" equipment in Inventory Control. ■

## SAMTO consolidated

# Air Force streamlines launch operations

The Air Force is consolidating the Space and Missile Test Organization (SAMTO) headquarters at Vandenberg Air Force Base, Calif., with its parent organization, the Space Systems Division at Los Angeles Air Force Base, Calif., effective Oct. 1.

*"The growth in our launch operations is significant and we have a great need for people with space experience at our operational sites."*

—**Gen. Bernard P. Randolph**

"The consolidation of SAMTO Hqs will accomplish several things," Gen. Bernard P. Randolph, Air Force Systems Command, said. "First, it will reassign highly qualified and

valuable people where we need them, such as the Western Space and Missile Center at Vandenberg. The growth in our launch operations is significant and we have a great need for people with space experience at our operational sites. Second, this is in accord with Secretary Cheney's Defense Management Report to the President. That report calls for elimination of management layers, consolidation of related functions, and assignment of personnel to core functions at appropriate organizational levels."

The Eastern Space and Missile Center, Patrick Air Force Base, Fla., the Western Space and Missile Center, and the Consolidated Space Test Center at Onizuka Air Force Station, Calif., will now report directly to the Space Systems Division, rather than reporting through an intermediate headquarters. "This will increase the overall efficiency of our growing space launch operations," Randolph said.

The Space and Missile Organization was first established on Oct. 1, 1979. ■

## Science and technology offer attractive career opportunities

*(Editor's note: The following commentary by John G. Welles, executive director of the Denver Museum of Natural History, appears in this month's Bear Pause, a magazine published by the museum. Prior to his current position, Welles served as the regional administrator of the six-state U.S. Environmental Protection Agency office in Denver from 1983 to 1987. Also, he was vice president for Planning and Public Affairs for nine years at the Colorado School of Mines.)*



**Welles**

and graduate schools today to fill anticipated demand around the end of the century.

One of the reasons for the shortages is the temporary dip in college age population. A bigger reason is that women and minorities make up a growing share of the employed population while traditionally only a limited number of them have chosen careers in science and engineering. By the year 2000 it is estimated that they will constitute 80 percent of the people entering the labor market.

Where will the nation obtain the scientists and engineers it needs? Despite many public and private programs designed to raise the participation of women and minorities in science and engineering, the results are not

encouraging. Today they account for only 20 percent of our scientists and engineers. Thus America's chances of averting a serious shortage of scientists and engineers by the turn of the century do not seem bright, according to the NSF. Even less pessimistic authorities concede that the problems of recruiting women and minorities into scientific careers have not been surmounted.

This is where museums come in. With their rising popularity for visitors of all ages, there is hope that special museum programs and exhibits in informal learning settings will help to turn the tide by interesting young minds in scientific careers. For years the Denver Museum of Natural History had endeavored to do this by maintaining close working relationships with junior and senior high school teachers. Our Public Programs staff has sought to supplement classroom teaching with museum programs that show the excitement of discovery in the worlds of science and engineering.

A recent *Science* magazine article stated, "On one point, all are agreed: if a long-term shortage of scientists and engineers is to be averted, unprecedented numbers of women and minorities will have to be attracted to technical careers." Fortunately, the opportunities awaiting women and minorities who obtain college and graduate degrees in science and engineering are enormous. Employers want them and are willing to pay extra to get them. Clearly one of our tasks at the museum is to spread the word about these attractive opportunities. We want to help capture the imagination of young people early enough in their education to encourage them to channel their studies toward degrees in science, engineering and mathematics. ■

## 30 years of service



Employees with 30 years' service honored at a recent luncheon included, standing left to right: Donald Nickell, Reid Clausen, Mick Commerford, and Wallace Pitt; seated: Robert Golla, McKinley Lockett, Jr., Ernest Littler, and Robert Sanchez.



Standing, left to right: Norman Vaughan, Harlan Nassen, and Vic Patton. Seated: Ralph Westerman, Perry Thornton, Ovid Bloom, and Kent Paser.

## Company sponsors supplier forum

More than 30 firms from Colorado and throughout the country will gather from 8:30 a.m. to 2 p.m. Sept. 28 at the Deer Creek Facility for the fourth Minority Supplier High-Technology Business Exposition. The Astronautics Group is sponsoring the event.

The exposition will provide a forum for Martin Marietta engineers, buyers, subcontract administrators, and other interested parties to meet and discuss potential business opportunities with representatives from high-technology minority business firms, J. E. Kimpton, director of materiel operations, said.

"The firms that have been invited are excellent sources capable of providing some of our current and future procurement and subcontracting requirements," Kimpton said.

"Also, this is an opportunity to demonstrate our corporate and business commitment to maximize opportunities for the minority business community," he said.

Attendance at the business exposition is open to interested representatives from the business community. ■

### Astronautics Group helps sponsor "Volksmarch"

The American Red Cross is conducting a fundraising "Volksmarch" up the Colorado Trail from 9 to 11 a.m. Oct. 7. The term "Volksmarch" originated in Germany as a scenic, recreational activity for local townfolk. The Astronautics Group is a sponsor of the event.

The 6.2-mile walk begins at the Waterton Canyon trailhead. Parking and bus transportation to the trailhead will be provided from the Astronautics Group's Recreation Area, near the Antenna Test Facility. Following the march, from noon to 2 p.m., an Oktoberfest celebration will take place at the Kassler Water Treatment plant—located adjacent to the trailhead.

For a \$5 donation, participants receive an official "Volksmarch" pin and refreshments at the Oktoberfest.

For more information, contact Rose Gaspar of the American Red Cross at 781-5511.

### Health screenings available at Wellness Center

Employees may call the Deer Creek Wellness Center to schedule free weight loss and fitness consultations, a free body composition analysis test, and \$3 cholesterol screenings. Free blood pressure checks are performed on a drop-in basis.

HealthMark exercise physiologists are available from 11:30 a.m. to 5:30 p.m., Monday through Friday. Call Ext. 7-7575 or 7-7576 to schedule appointments. ■



Mile High  
**United  
way**



### Boattail high-performance work team

The boattail High-Performance Work Team in Space Launch Systems' commodities shop has cut the actual hours required to build a Titan IV boattail from 2,500 to 1,200. "Our goal is to get our build time down to 700 hours," says senior mechanic Gene Cozart. The boattail is a skirt-like assembly at the aft end of the launch vehicle that protects the core from the hot gases of the strap-on boosters during launch. Team members suggested tooling changes that helped improve their performance. The team members are (left to right): Earl Loseke, Tom Robinette (kneeling), Doug Haas, Kurt Worthley, Gilbert Gallegos, Mark Early, Rudy Martinez (first step), Dan Bender, and Gene Cozart (top step).

## High-performance teams making a difference

Committed Space Launch Systems employees are making a difference in factory operations.

"The efforts of hundreds of High-Performance Work Team members in SLS have allowed us to book more than \$6 million in savings since we began in February with the first high-performance work team," John Adamoli, vice president of SLS production operations, told senior managers from Ball Aerospace last week.

Adamoli also told the visitors that this is just the beginning.

One of the groups Adamoli told the Ball executives about is the Commodity Shop Boattail Team, which has cut the hours required to build a Titan IV boattail assembly from 2,500 to 1,200.

The boattail is a skirt-like assembly at the aft end of the launch vehicle. It protects the core vehicle from the hot exhaust gases generated by the strap-on boosters during launch.

Team member Dan Bender suggested lowering the tooling fixture on which the boattail is built.

This change alone is helping save countless movements on and off scaffolding around the fixture.

"You couldn't get your toolbox up there before," said Bob Pomeroy, the elected team leader for the Commodities and Small Parts work group. The added efficiency and convenience are saving time and energy.

"The fixture change also makes it easier to get the boattail out of the fixture without damaging it. Now there's plenty of crane clearance," Pomeroy added.

The tool fixture changes were made possible by the Herculean efforts of a high-performance work group in tool design and fabrication. They cut what normally is a four- to six-week time span to redesign and build a fixture to just six days—and they worked over a Titan IV team picnic weekend to do it.

"The significance of what these folks did is profound," said Joe Marcus, director of manufacturing operations for SLS.

"Our goal is to get our build time down to 700 hours," said Gene Cozart, senior mechanic on the boattail team. "We believe we can do it."

## Astronautics Group supports others

Several universities and local organizations have recently benefited from the Astronautics Group's surplus goods and the charitable contributions program.

In keeping with its commitment to assist all phases of education, Martin Marietta has donated several items that no longer are useful to the company.

The University of Colorado at Denver recently received a milling machine, while New Mexico State University obtained a pierce-all punch hole machine.

Throughout the year the Colorado School of Mines has been given a wide variety of instruments and goods for use in classrooms and testing. Some of these items included an amplifier, pulse generator, digital multimeter, oscilloscope, and helium indicator.

Arapahoe Community College also has received several computer-related items to enhance their ability to teach students.

In addition to donating surplus items, the Astronautics Group continues to support a wide variety of organizations with financial contributions.

For instance, the Neighborhood Housing Services of Denver, Inc., received \$1,000 for their efforts to empower Denver residents to better their neighborhoods. Specifically, the money was used to help the people of two low-income neighborhoods build safe, decent communities.

Also, the Denver Audubon Society used a \$1,000 gift for their Urban Education Project. The project helps the society bring the excitement of the outdoors to more than 2,000 children. The money also helped the society train additional volunteers to deliver the news of the program.

Last summer, the Astronautics Group donated \$4,000 to the Frontiers of Science organization. The program provides an intensive science and math curriculum for six weeks at the University of Northern Colorado for exceptionally bright high school students. That group of students also toured the Waterton facilities to get a first-hand look at the company's work.

Porter Memorial Hospital received \$3,000 to help establish a Cancer Care Center to provide both inpatient and outpatient services and to address the medical treatment and emotional support systems of cancer patients and their families.

Also, \$20,000 was donated to Regis College to help join all the libraries at all of its campuses to a statewide computerized card catalog system.

The Children's Hospital's Jimmy Loper Memorial Fund received \$5,000 for a cooperative effort to create a nationwide bulletin board system for disabled children, their families, and the professionals who support them. The network will provide information regarding referrals for used wheelchairs/equipment, baby sitting services, home care, calendars and schedules, communications, and a variety of miscellaneous services. ■

## Robinson and Mills to perform concert



Robinson



Mills

office will distribute tickets only through department representatives.

*Smokey Robinson and Stephanie Mills will entertain employees at the company-sponsored Family Event concert Saturday, Oct. 7, at 2:30 p.m. and 8 p.m. at McNichols Sports Arena. Employees who reserved tickets will soon receive them from department administrators or secretaries. Employees who did not reserve tickets, but would like to attend, can request 2:30 p.m. tickets only from their department representative. The Employee Services*

### SIP

Unit values for the Savings and Investment Plan (SIP) for United Aerospace Workers (UAW) and United Plan Guard Workers of America (UPGWA) represented employees in August 1989 (July 1989 values in parentheses) are:

Fund A	1.2757698696
Indexed Equity	(1.12530686967)
Fund B	1.1532015819
Fixed Income	(1.1460769518)
Fund C	1.0625631326
Company Stock	(0.9878462625)

### PSP

Unit values for the Performance Shareings Plan (PSP) for Salaried Employees in August 1989 (July 1989 values in parentheses) are:

Fund A	6.1504029400
Indexed Equity	(6.0343254190)
Fund B	3.3286541544
Fixed Income	(3.3031161390)
Fund C	5.6474977762
Company Stock	(5.2416550900)

## PROFS training continues

Employees who need training on the fundamental uses of PROFS should attend one of the scheduled classes from 8 a.m. to noon on Sept. 29 or Oct. 6, 13, or 20, at the Data Systems Inverness training department, IPF116.

Also, special on-site, one-on-one training is available for users unable to attend the scheduled classes.

Contact Linda Sasse, 790-3622, to sign up for a class or to obtain more information.

## Employee services/recreation

**Fall Fitness Classes**—Openings exist in the eight-week fall sessions that started Sept. 11 at the Deer Creek Wellness Center. Whether you are just beginning an exercise program or are an avid athlete, there is a class to fit your needs. Choose from low-impact aerobics, ski fitness and body toners. Daytime and evening classes are offered at a modest cost. Class fees can be pro-rated for late enrollees. Registration forms are in the information racks. Call the Wellness Center, Ext. 7-7575, for more information.

**Rifle Sight-In**—For Martin Marietta employees and their guests on Saturdays, Sept. 23 and Oct. 7, and Sunday, Oct. 8, from 8 a.m. to 2 p.m. at the rifle range. The fee is \$1 per rifle and there is a 30-minute limit for each rifle. There must be at least one Martin Marietta employee in each car and you must inform the guard at the gate of your intentions to sight-in. Proceed directly to the range (no tours). Children under age 16 cannot be admitted without a hunter safety card. Do not bring loaded rifles to the range.

**Photography Club**—Platte Canyon Photography Club members will meet at 7 p.m., Monday, Sept. 25, at the Public Service building, 10001 W. Hampden Ave. Contact Bill Privratsky, Ext. 7-4969, for details.

**Running Club**—Runners of all levels are invited to participate in the Shepherders Running Club fall series. Race dates are on Thursdays, Sept. 28, and Oct. 12 and 26, and races begin between 4:45 and 5 p.m. at the Waterton Canyon parking lot. For further details, contact Corrina Perrone, Ext. 7-4162.

**Soccer Club**—A men's soccer team is being formed for the fall (September through November) season of the Mile High League. There will be eight games, played on

Sundays, at various locations throughout the Denver area. For information, please contact Darrell Schmidt, Ext. 1-7604, or Peter Bowman, Ext. 1-2439.

**Saddle Club**—Ridge Riders club members will meet at 7 p.m., Tuesday, Oct. 3, in the recreation area clubhouse. For details, contact Mary Smith, Ext. 1-8154, or Irene Woodzell at 688-9676.

**Motorcycle Club**—Aerorider club members will meet at 5 p.m., Thursday, Oct. 5, in the clubhouse at the recreation area. All interested employees, their spouses and dependents are welcome. For more information, call Jeff Hutchinson, Ext. 1-7877.

**Parapsychology Club**—The group will meet at 5 p.m., Thursday, Oct. 12, at South Park West I, MIC room. The subject is "Dowsing," with professional dowser Greg Storozuk. All employees and guests, age 16 and older, are welcome. To reserve a guest badge or for more information, please call Helen Davis, Ext. 1-6887.

**Smoking Cessation Classes**—Enjoy a breath of fresh air. The American Cancer Society's "Fresh Start" program is available free to all Martin Marietta personnel, their spouses and dependents. Classes consist of four meetings from 5 to 6:30 p.m., Oct. 9, 12, 16 and 19, at Goddard Middle School, Room 211. Those who have not sent in a registration form, but would like to attend, should call the Employee Services office at Ext. 7-6605.

**Computer Bulletin Board**—The Waterton Canyon computerized Remote Bulletin Board System is back online after a series of disruptions resulting from hardware problems. The RBBS has two 40-megabyte hard disks packed with public domain and shareware games, utilities, word processors

and source code for Turbo pascal, Turbo and Microsoft C, Turbo and Quick BASIC, DBase, 80-86 Assembler, code published in PC Magazine, and others. There also is a want ad section where employees may advertise. The system runs continuously and can communicate at 1200 or 2400 baud. Call 977-7353. Set your modem to eight data bits (no parity) and one stop bit. Most common communications protocols are supported. If you have difficulty logging on, call the systems operator, Ken Beaudrie, at Ext. 1-5462.

**Mile High L5 Space Society**—The group will meet at 7 p.m., Oct. 2, at the Public Service Building (northwest corner of Kipling and Hampden). For more information, call Mark Schloesslin at Ext. 1-9057.

**Martin Marietta Open Golf Results**—The low gross winners from the Martin Marietta Open, held Aug. 19 at Raccoon Creek Golf Course, were: men's first place, Dave MacAdam; second place, Chip Woods; and third place, Brett Hegarty. The low gross women were: first place, Kathryn Leigh; second place, Beth Mielke; and third place, Cindy Athey. Awards also were presented to top finishers in the seniors division and for low net scores.

### MARTIN MARIETTA NEWS

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