



Merry Christmas

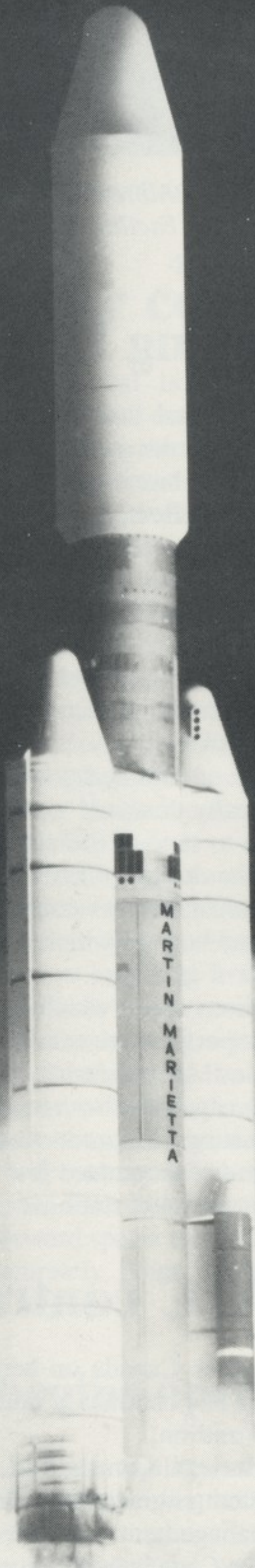
MARTIN MARIETTA

news

ASTRONAUTICS GROUP

December 23, 1988 Number 27

Commercial Titan to boost Hughes 601s





Peter B. Teets, President of the Astronautics Group, and Stanley F. Albrecht, Vice President of Plant Operations, officially opened the Electronics Manufacturing Facility III Dec. 16. In the foreground is James M. Ritz, manager of Electronics Manufacturing.

Electronics Manufacturing Building III opened

Martin Marietta's new \$5 million, 50,000 square-foot addition to the electronics manufacturing building officially opened Dec. 16.

The facility increases the capability of the Astronautics Group to manufacture highly specialized electronics hardware, a sizeable portion of which formerly had been produced by subcontractors—most of them out of state.

EMF III brings to 165,000 square feet the size of the Electronics Manufacturing Facility complex at Waterton. Approximately 250 people are employed at EMF III.

Electronic components for the Peacekeeper missile; Titan II, Titan III, and Titan IV space launch vehicles; Magellan spacecraft; Tethered Satellite; Transfer Orbit Stage; Galileo spacecraft; Space Shuttle; Small ICBM; SCA-THA satellite; Viking Mars Lander; Skylab; and various classified programs have been built and tested at Martin Marietta's Electronics Manufacturing Facility.

EMF III was designed for greater productivity and future growth. It has the capacity to increase production to 50 percent over the current level.

It epitomizes and incorporates the state of the art in electronics manufacturing technology. Its design is based on an efficient manufacturing process flow. Among the benefits of this design are:

- Improved material flow;
- Elevated floors;
- An automated storage and retrieval system;
- State-of-the-art temperature, humidity, and lighting controls;
- Collocation of commodity areas; and
- Ergonomically designed work stations.

In addition to state-of-the-art manufacturing equipment, the design of EMF III also incorporates statistical process control and experimental design, both of which will help to reduce the cost of quality.

The conditions under which electronic components must perform are extremely severe, so the Electronics Manufacturing Facility has developed the capability to simulate them in functional testing. In production testing, 10 different types of automated test systems support 20 automated test stations. ■

Corporation wins Canadian ATC contract

A Canadian team of companies headed by Martin Marietta Canada Ltd. has been selected to be the Systems Engineering and Integration Project contractor for the Canadian Airspace System Plan.

Martin Marietta Canada Ltd. is teamed with five other Canadian organizations in the comprehensive plan to modernize Canada's air navigation system. Under the contract, the team will assist Transport Canada, the department responsible for the Canadian air navigation system, in two ways: the modernization of a complete, fully integrated air traffic control and navigation system, and the transition to the new system.

The four-year contract was awarded by Sup-

ply and Services Canada on behalf of Transport Canada. The contract is valued at approximately \$30 million.

Martin Marietta Canada Ltd., which will perform system engineering, integration, and program management support services, is teamed with Canadian Marconi, Montreal; IMP Group, Ltd., Halifax, Nova Scotia; Lavalin, a Montreal consulting engineering firm; MacDonald Dettwiler & Associates, Ltd., Richmond, British Columbia; and Thompson-Hickling Aviation, Inc., Ottawa.

Although most of the work will be performed in Ottawa, some will be carried out at Transport Canada field locations across the country. ■

Commercial Titan signs with Hughes

Commercial Titan, Inc. today announced it has signed a contract with the Hughes Aircraft Company to launch two new Hughes HS 601-class communications satellites on Commercial Titan launch vehicles.

Richard E. Brackeen, president of Commercial Titan, Inc. said the Hughes contract brings to six the number of satellites slated for launch on Commercial Titan.

"We expect this new Hughes satellite will see extensive application in a wide range of space communications programs and are delighted that Commercial Titan has been selected for early launches of the new HS 601 satellite," Brackeen said.

Terms of the contract were not disclosed.

The Hughes HS 601 has been selected for the U.S. Navy's next generation ultra-high frequency communications satellite program and, in the early 1990s, will be used to provide direct broadcast satellite capability for Hughes' subsidiary, Hughes Communications, Inc.

The first launch of a Commercial Titan is scheduled for late next summer from Cape Canaveral, Florida. Aboard the first launcher will be communications satellites for the Japan Communication Satellite Company and the British Ministry of Defence.

Commercial Titans also will launch two Hughes-built INTELSAT VI satellites for the International Telecommunications Satellite Organization in late 1989 and 1990.

The Commercial Titan is a derivative of the U.S. Air Force's highly successful Titan III series of space boosters, which have a 20-year operational success rate of better than 96 percent in nearly 140 launches. The launcher can place in excess of 31,000 pounds into low-Earth orbit and up to 11,000 pounds into a geosynchronous transfer orbit. ■

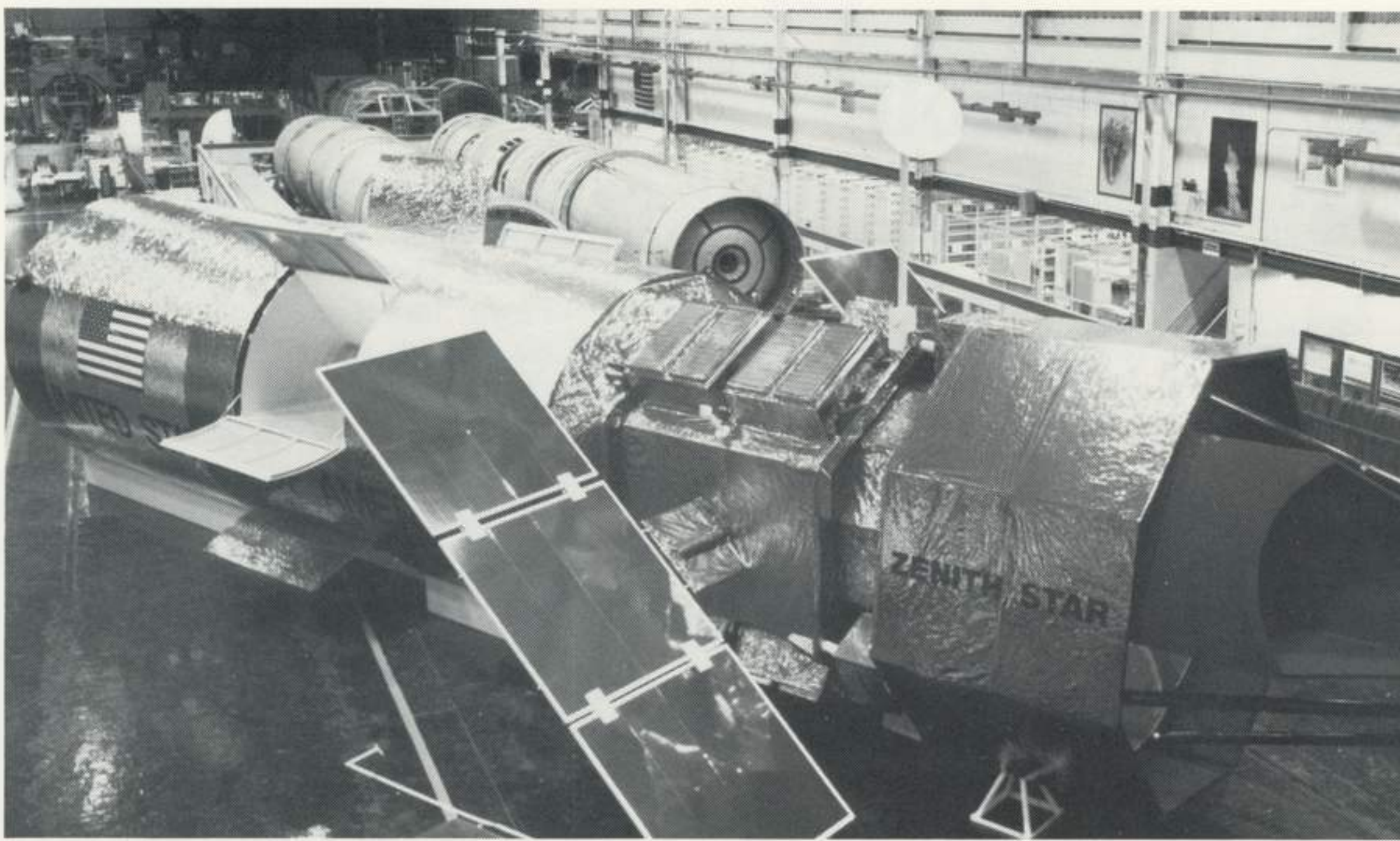
Small missile sent for 1st flight test

On Dec. 5, Strategic Systems shipped the first flight unit of the Small Intercontinental Ballistic Missile (Small ICBM) postboost vehicle (PBV) and payload shroud from the main plant to Vandenberg Air Force Base, Calif.

The PBV and shroud will be processed along with the Small ICBM's three propulsion stages in preparation for the first flight test of the Small ICBM at Vandenberg next year. The Small ICBM is the nation's newest intercontinental ballistic missile.

The PBV sits atop the 52-foot high missile and carries the single-warhead payload. The shroud covers the postboost vehicle. Martin Marietta currently is under contract to the U.S. Air Force Ballistic Missile Office to provide two more PBVs and shrouds for future flight tests.

Strategic Systems also is under contract to the Air Force to provide assembly, test, and system support for the Small ICBM. This includes conducting the flight tests at Vandenberg. ■



This full-scale mock-up of Zenith Star was shown when President Reagan visited the company

Employees invited to TQM seminar

Three Department of Defense officials will be keynote speakers at a Total Quality Management (TQM) seminar at the Denver Marriott Southeast Hotel on Jan. 19. Martin Marietta employees are invited to attend.

The Colorado/Wyoming chapter of the American Defense Preparedness Association (ADPA), a non-profit professional society that fosters a closer working relationship between the military, industrial and scientific communities, is hosting the seminar.

Improving defense systems will be the broad topic of the half-day technical seminar, which also will be open to military and other defense contractor personnel in the area.

Total Quality Management is a concept developed by government and professional organizations to improve defense productivity. The Department of Defense has made the concept mandatory for all of its new programs.

The scheduled speakers are:

- Brig. Gen. Frank Goddell, USAF, special assistant for Force Reliability and Maintainability, Office of the Secretary of the Air Force;
- Darold Griffin, deputy chief of staff for Production, U.S. Army Materiel Command; and
- Douglas O. Patterson, technical director, Reliability, Maintainability and Quality Assurance Directorate, office of the assistant secretary of the Navy for shipbuilding and logistics.

Those interested in attending the seminar should arrange to do so through their management. The registration fee is \$35 and includes coffee and lunch.

Jack Parmentier, Ext. 7-4453, an officer of the Colorado/Wyoming ADPA chapter, is handling reservations for the conference. Registration checks, payable to ADPA Colorado-Wyoming Chapter, must be in by Jan. 12.

Reservations and checks should be mailed to: ADPA Colorado-Wyoming Chapter, 8908 W. Glasgow Place, Littleton, CO, 80123. ■

Phones, FAX to shut down during holiday

During the holiday shutdown, Martin Marietta's telephone switchboard will not be manned from 5 p.m. Friday, Dec. 23, through 7 a.m. Tuesday, Jan. 3. In case of an emergency, the phones will be programmed with a voice message that includes the phone number to security headquarters (977-4646).

The facsimile communications centers also will be shut down during the vacation period with the exception of Dec. 29. On that day, the "FAX" centers will be opened as follows: Deer Creek Facility, noon-4 p.m.; Greenwood Commons Facilities, 8 a.m.-noon; and the Waterton main plant facilities, 8 a.m.-noon.

Any questions regarding these shutdowns can be directed to Telecommunications, Ext. 7-3525. ■

Space Systems lands Zenith Star contract

If all goes according to plan, in the spring of 1994, a Titan IV will roar off the launch pad in Florida carrying the first part of the two-segment Zenith Star spacecraft. Several months later, another Titan IV will launch the second segment and the two will be joined in orbit, preparing for the first-ever experiment of a chemical laser in space.

That goal took a step closer to reality Dec. 5 when the Strategic Defense Initiative Organization awarded Martin Marietta a \$347 million contract for Phase IIIA of the Zenith Star program. The 30-month award covers the development of the final design of the experiment and laboratory tests of critical components of the chemical laser and the optical and tracking systems.

Following this phase, two others are planned. Phase IIIB, according to SDIO, will begin in the summer of 1991, and will deal with fabrication and ground testing. Phase IIIC, scheduled for the spring of 1994, will involve integration, launch operations, and experiment operations.

"We're excited to get on with the next phase of the program," said Robert Molloy, Zenith Star program director. "Zenith Star will be a critical experiment in determining the feasibility

of using chemical lasers for strategic defense—you can't do it on Earth."

The Zenith Star program incorporates laser and optics technologies under development for more than 25 years. Space Systems was named prime contractor for Zenith Star in October 1987 and is responsible for the spacecraft, experiment planning, system engineering, and mission operations. Lockheed, a major subcontractor, is developing high-precision optics and control components. TRW, another major subcontractor, is developing the laser components based on Alpha, a chemical laser device that is now being ground-tested and adapted for use in Zenith Star.

For the experiment, the forward or telescope section will be launched first and will perform experiments on its own, collecting data on simulated boosters launched from the United States. Once the laser segment is launched and joined with the forward segment, a series of experiments is planned using the laser, test objects located some distance from the spacecraft, and sensors to observe the beam. The experiments will evaluate the ability to control the quality of the laser beam in the vacuum of space. The forward spacecraft will evaluate the ability to accurately point the beam and to track the test objects. ■

Unique water treatment facility begins operation

The new "interim polishing" building, a waste water treatment facility at Waterton, has been put into operation, thus ensuring that treated water discharged from Martin Marietta is within Colorado's health standards.

Kevin Dykema of Environmental Management said the facility is the only one of its size in Colorado that can hold and analyze its treated water prior to discharge. If the water does not meet Colorado Department of Health standards, it can be re-circulated through the company's extensive treatment system to be treated.

The \$1.4 million facility, which includes three 500,000-gallon holding tanks, took more than 10 months to complete. It will be used primarily to treat industrial waste water that has been pre-treated.

Bill Miller of Facilities Engineering said there are a dozen or so different waste water treatment operations at Waterton.

"There's been a number of treatment process upgrades built over the last 30-35 years," he said, and a second-phase polishing building will be added in 1989 to provide "state-of-the-art" waste water treatment. ■

Employee services/recreation

Bowling Tournament—The Martin Marietta Masters and Corporate Games qualifying bowling tournament will be Jan. 7, 8, and 14, at Fun Plex Super Bowl, 6970 W. Coal Mine Avenue in Littleton. The tournament is open to all Astronautics, Data Systems, and Information & Communications Systems employees, Air Force personnel, and dependent family members and spouses. All entry forms, accompanied by a \$15 entry fee, must be received by the Recreation office in the Deer Creek Facility by noon, Dec. 23. The entry fee must be by check, payable to Martin Marietta. Forms are in the Employee Services/Recreation racks.

Fitness Classes—Registration forms are in the Employee Services/Recreation racks for six-week fitness classes beginning Jan. 16. The registration deadline is Jan. 8. The classes include three levels of aerobics, fat burners, body shapers, and stretch/flex sessions. Classes will be held at the Deer Creek fitness center. Fees are \$20 for classes that meet Monday, Wednesday, and Friday, and \$13 for Tuesday and Thursday classes.

Junior Achievement Bowlathon—Employees, families, and their friends are encouraged to form five-member teams and register to bowl Feb. 4 or 5 in this annual fund-raising event. Money raised will benefit JA business education programs.

Saddle Club—Ridgeriders Club members will meet at 7 p.m., Tuesday, Jan. 3, in the clubhouse at the recreation

area. For information, contact Mary Smith Ext. 1-8154, or Joe Carroll, Ext. 1-7800.

Radio Club—Waterton Amateur Radio Society Club members will meet at 5 p.m., Tuesday, Jan. 3, at the Hamshack in the recreation area.

Hunting and Fishing Club—The group will meet at 5 p.m., Monday, Jan. 9, in the clubhouse at the recreation area. For more information, contact Mel Smith, Ext. 1-8655, or Roger Guinn, Ext. 7-3161.

Archery Club—The Red Rock Bowmen will meet at 4:45 p.m., Tuesday, Jan 10, in the clubhouse at the recreation area.

Toastmasters Clubs—Effective Jan. 11, the Deer Creek club meets at 4:15 p.m. every Wednesday in the Center Bridge Conference Room on the second floor. Contact Pat Roybal, Ext. 1-5762, for more information. LSC Toastmasters meets at 4:30 p.m. Wednesdays, in room 209G of Littleton Systems Center. The contacts are Jim Harrer, Ext. 7-4588, or Alex Hubert, Ext. 7-6527. Titan Toastmasters meets at 6 p.m. Mondays, at Mission Trujillo Restaurant, 181 Ridge Road (Broadway and Ridge Road). Contact Mark Willey, Ext. 1-6183.

Racquetball Tournament—Thirty-seven people participated in the 3rd Annual Martin Marietta Racquetball Tournament on Nov. 19 and 20. The winners and runners up in the five divisions were: Men's "A"—Robert Brainard and

Don Nolta; Men's "B"—Scott Norris and Frank Silva; Men's "C"—Luke Mitchell and Denise Mitchell; Men's "D"—Floyd Teiffel and John Heath; Women's "C/D"—Sue Taigman and Dianne Cooley. There will be a spring tournament to select two participants for the Colorado Corporate Games.

Denver Symphony Discount—Two-for-one coupons for any Denver Symphony Orchestra classical or pops concert are available in the Employee Services office at Deer Creek; the Waterton branch office in the ORB building, room 200 (open Monday and Friday, noon—4 p.m.); and from the volunteer recreation representatives at Space Support Building, Littleton Systems Center, South Park III, South Lincoln, and Greenwood Commons facilities. To find the representative closest to you, call Ext. 7-6750.

Discount Movie Tickets—Employees can purchase movie tickets for \$3.00 for Mann, Commonwealth, and AMC movie theatres from the Employee Services locations listed above. The tickets are redeemable seven days/nights a week. Some restrictions apply to films designated as special engagements. Payment is by check only, payable to Martin Marietta. Tickets bear a Sept. 30, 1989, expiration date, or later, and are non-refundable.

Mile High L5 Space Society—Invites employees, family and friends to join the society at 7 p.m., Friday, Jan. 13, at South Park I. A speaker is scheduled and refreshments will be provided. For more information and to register guests, call president Barry Tuell, Ext. 7-8137 or 973-7874 (home).

The Waterton Computer Bulletin Board—Is open to all Martin Marietta employees in Denver. The board has shareware and public domain programs available for downloading, allows users to send messages to other users, and has a want ad section. Set your communications program to eight data bits (no parity), one stop bit, 1200 or 2400 baud and dial 977-7353. WX-modem, X-modem, Y-modem, Z-modem, Kermit, and SEALink file transfer protocols are supported. Call the SysOp, Ken Beaudrie, at Ext. 7-7584 if you have difficulty.

PSP to be matched by company stock

Salaried employees' performance sharing plan (PSP) matching contributions earned during 1989 and later years will be made in the form of Martin Marietta common stock. The first stock matches will be credited to accounts beginning in January 1990.

The corporation's board of directors in early December approved the change. Although the change is contingent upon shareholders' approval in April 1989, it is expected to pass, according to Bobby F. Leonard, corporate vice president of Personnel.

In a letter sent to employees, Leonard explained the reasoning behind the change:

"This means that the Corporate match for 1989, as paid in 1990 and in later years, will represent ownership in the Corporation, further strengthening the relationship between long-term Martin Marietta performance and the value of the PSP account."

In addition to the match change, the invest-

ment percentage and vesting requirement for the PSP will be changed at the beginning of the year. After five years of service with the corporation, employees will be 100 percent vested in all previous and future contributions made by the corporation to a participant's account.

The maximum investment in PSP will increase from 14 percent to 15 percent of the employee's salary. The pre-tax portion of the contribution still will be limited by tax regulations, and the corporation's matching percentage will continue to be applied only to the first six percent of the employee's PSP contribution.

The corporate match of common stock (fund C) will not be transferable to any other fund during the PSP participant's active employment prior to reaching the age of 59 1/2.

A prospectus explaining the plan has been sent to all salaried employees. ■

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