

June 14, 1985

Number 12



The ALV finishes its history-making demonstration run along a test track in Denver.

ALV demonstration sets milestone

The Autonomous Land Vehicle (ALV) set a major milestone for intelligent computer systems in demonstrations May 30 and 31 in Denver.

On May 30, the ALV ran 0.6 of a mile at an average speed of more than 3 mph along a winding, hilly test track at the Waterton site. The following day, in a demonstration for about 80 government, industry, and university representatives, the ALV repeated its autonomous performance.

No other vehicle of its kind has repeatedly traveled so far and so fast. Over a two-week period, the ALV has traversed the test track 15 times at an average speed over two mph.

In terms of speed and distance, accomplishments of the ALV represent a dramatic improvement over other autonomous land vehicle systems whose performance has been highly erratic and limited to much lower speeds and distances.

A national test bed for industry and university developments in artificial intelligence and advanced computer

architectures, the eight-wheeled ALV runs independently. An advanced vision processing system capable of processing a frame of imagery every 2.4 seconds, sends a picture of what is in front of the vehicle to computer systems that interpret the data and keep it in the center of the road.

The ALV is being developed by Martin Marietta under contract to the U.S. Army Engineer Topographic Laboratories at Fort Belvoir, Virginia, with joint funding by the Defense Advanced Research Projects Agency (DARPA). It is one of three major military applications projects being conducted by DARPA under its Strategic Computing Program.

The late May demonstrations were the first under a contract awarded in September 1984 that calls for yearly demonstrations of technology developments. In early demonstrations, the ALV will plan its course and avoid obstacles based on what it "sees." Later, it will be augmented by internally stored terrain data to plan long-

distance trips. As its artificial intelligence system develops, it will be able to replan trip segments as it encounters unforeseen features. It also will have off-road capability.

The systems being developed for the ALV are expected to have a variety of future applications. For example, a similar autonomous vehicle would be able to perform tasks in areas hazardous to human operators.

The Strategic Computing Program under DARPA is designed to develop a technology base for intelligent functional systems. In the ALV's next demonstration (November 1985) the vehicle will be able to make inferences about the road from sensor data, reasoning, for example, about the location of the road's center even though portions of the road might be obscured by dirt or gravel. It will produce a plan for reaching a specific destination through a road network based on sensor and other data, and will modify its speed and path in response to changing road conditions and goals. ■

Denver Aerospace excels in Air Force review

Martin Marietta Denver Aerospace has received notification from the Air Force Contract Management Division (AFCMD) that the recent Contractor Operations Review (COR) resulted in positive findings regarding the company's systems and practices.

Charles E. Carnahan, vice president of Operations and COR team leader, said that the outstanding showing by Denver Aerospace resulted from "extensive preparation on the part of all employees. Their actions reflected pride in their performance and in Martin Marietta."

The review by the 37-member AFCMD team was part of a program to conduct similar examinations at many of the major aerospace firms that serve the needs of the Air Force. The primary purpose of these reviews is an indepth analysis of a contractor's management systems, with particular emphasis placed on compliance with contract requirements and conformance to company published policies and procedures. Eight major functional areas throughout the company were extensively reviewed.

"Our people were impressed with the AFCMD team and felt that they did a good job," Carnahan said. "They were able to identify some areas that we need to address. We are now correcting those areas and that should be complete in the near future."

Peter B. Teets, president of Denver Aerospace, was equally pleased. "All of our employees are to be congratulated for a job well done."

Col. John Masson, the Air Force plant representative, said the importance of satisfactorily passing the COR cannot be overstated.

"Martin Marietta employees should take pride not only in this achievement, but also in the many good initiatives that were begun in anticipation of the review itself," Col. Masson said. "I am confident that the approach taken to correct the issues raised will result in long term benefits."

"However, completion of these actions should not be viewed as an end but as a beginning; the basis for setting new, higher standards of excellence that you have demonstrated can be met." ■

Benefits

Final payment will be made to 4650 active salaried employees in the Denver area who, as of April 22, 1985, have any money in their Flexible Spending Accounts (FSA). Total payments amount to \$1,502,561.

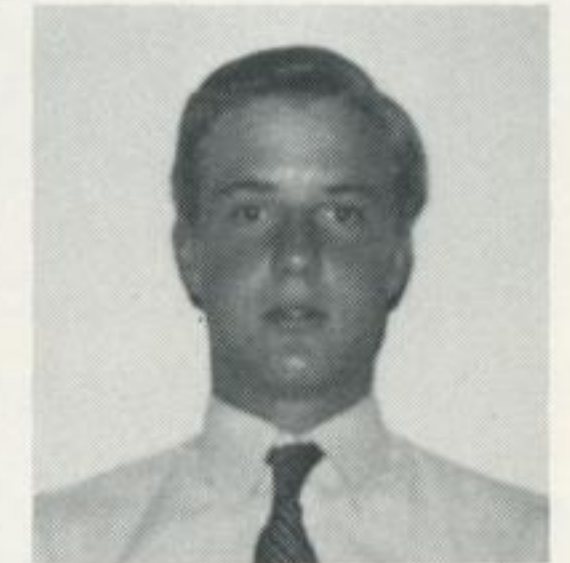
Employees entitled to a payment will receive a separate Martin Marietta check in conjunction with their regular payroll check on June 13 or 14. The checks will reflect withholdings of 20% federal income tax, appropriate state taxes, and FICA taxes.

Questions regarding payments should be directed to the Flexible Spending Account representative for Connecticut General at 1-800-242-2269.

Two more Corporate scholars named



Mosher



Layman

The sons of two Denver Aerospace employees were selected to receive a college scholarship by the Martin Marietta Corporation Foundation.

Gregor J. M. Layman, son of Lawrence Layman, a senior staff engineer, attended Heritage High School in Littleton, CO, and plans to pursue a doctorate in chemical engineering.

Todd Jon Mosher, son of Clifford H. Mosher, chemical technician, attended Columbine High School in Littleton, CO, and intends to major in aerospace engineering.

Both students will receive a scholarship at an accredited college of their choice, payable at \$3000 per year for up to four years, depending on academic achievement while in undergraduate school. Scholarships are awarded each year to high school seniors who are children of Martin Marietta employees on active status.

The two were selected to receive the scholarships when two of the original 15 students accepted other awards. ■



Its history-making test run complete, the ALV got a close inspection by some of the 80-plus government, industry, and university representatives on hand for the demonstration on May 31.



Steven Humphrey, second from left, I&CS marketing manager, explains STOF II display to convention attendee, far left, as another waits to enter display.

STOF II featured at international convention

The Standard Tactical Operations Facility (STOF II) was featured in the Martin Marietta exhibit at this year's Armed Forces Communications and Electronics Association (AFCEA) International Convention and Exposition, June 4-6, in Washington, D.C.

STOF II is a multipurpose communications system designed to accelerate message processing and reduce personnel and equipment.

The display also featured a nine-projector, three-screen multi-image slide show, describing the systems and

capabilities of Martin Marietta's Information & Communications Systems (I&CS). The multi-image presentation was eight feet above the ground in a circular projection theater, with a computer driving the presentation.

Other products and systems displayed at the exposition included ASAS/ENSCE, Navy Plotter, Air Traffic Control, MILSTAR, Small ICBM Launch Control System, CNCE, Operational Intercom System-Digital, MSR, and Strategic Defense Initiative. ■

Corporate news

Oak Ridge researchers to assess acid rain effects

Under a 4-year, \$8.2M contract with the Electric Power Research Institute of Palo Alto, CA, environmental researchers from Martin Marietta's Oak Ridge National Laboratory will manage a national project to assess effects of atmospheric deposition, including acid rain, on forest systems.

The project will involve field research at nine forest sites in New York, North Carolina, Tennessee, and Washington state.

Corporation awarded \$32M Data Systems contract

Martin Marietta Corporation has received a \$32M contract from the U.S. Department of Interior's Mineral Management Service for installation and management of an advanced data processing system. Under the five-year contract, Data Systems will facilitate collection and distribution of revenues from mineral leases offshore and on federal and Indian lands.

Peacekeeper marks 8th successful test flight

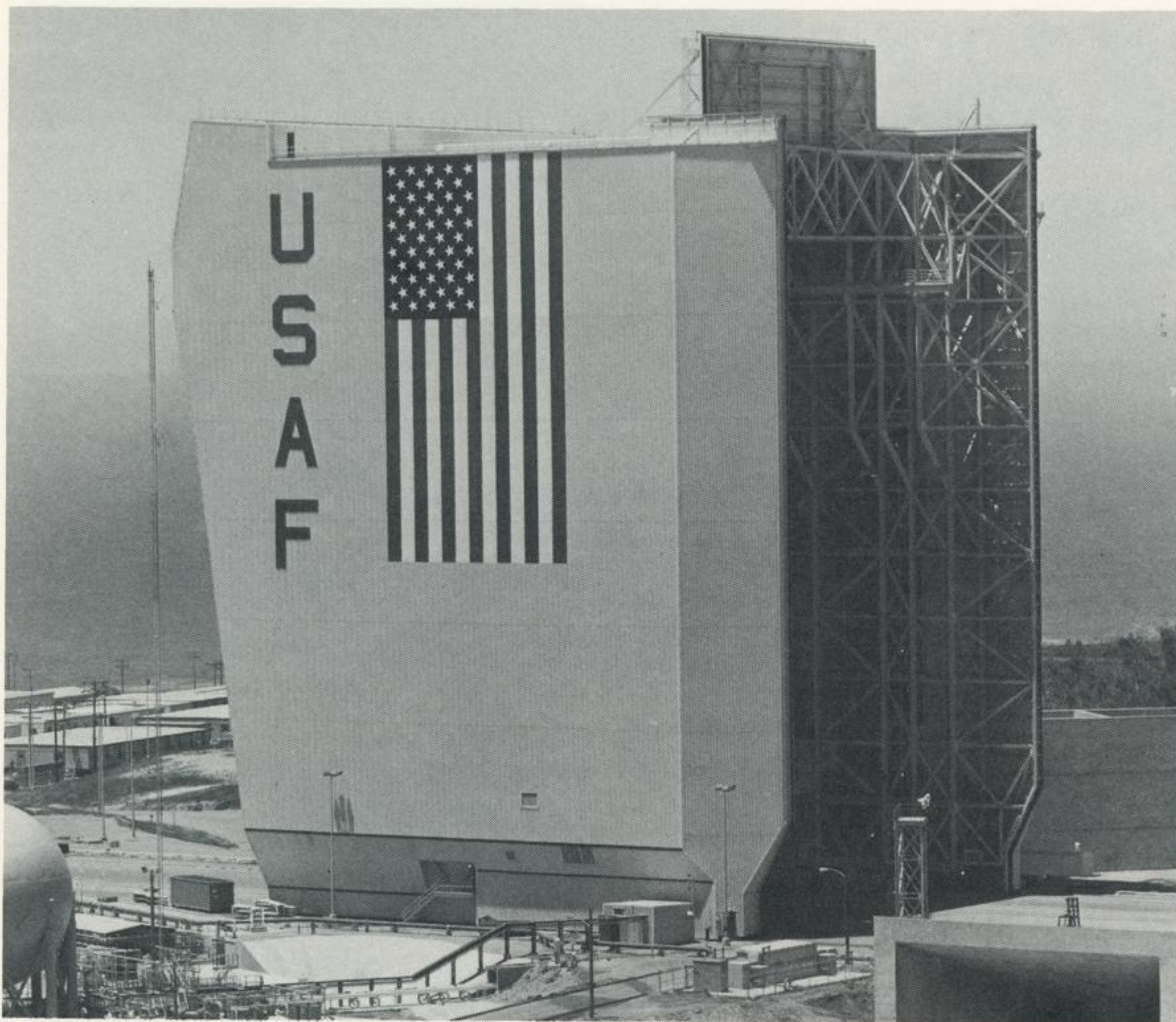
A Peacekeeper ICBM recorded its eighth successful test flight June 3 from Vandenberg Air Force Base in California to the Kwajalein Missile Test Range in the Pacific Ocean, the U.S. Air Force announced.

The launch, at 11:20 a.m. MDT, marked the end of aboveground canister launches. The next 12 test flights will be conducted from modified Minuteman test silos at Vandenberg. For those tests, the Emplacer system built by Denver Aerospace will be used to insert and align the Peacekeeper stages in the silos.

Denver Aerospace is responsible for assembly and flight testing of Peacekeeper missiles at Vandenberg under contract to the Air Force Ballistic Missile Office. ■



Project Referral winner heads for space shuttle launch—Janet M. Hollingshead, status accounting associate in Contracts, won the May Project Referral drawing and a 4-day trip to Florida this month to view the next space shuttle launch. Hollingshead's referral, a manufacturing engineer, was hired recently.



Giant American Flag adorns side of Shuttle Assembly Building.

Stars and stripes forever...

Martin Marietta Corporation recently purchased, in the company's name, a star and a stripe on one of the two American flags displayed on the Shuttle Assembly Building (SAB) at California's Vandenberg Air Force Base. The Titan Boosters and Friends, a group of 15 Martin Marietta Titan and Common Support employees, also purchased a star, as did 41 Site Quality employees. Individual Martin Marietta employees or couples purchasing stars included Augustin Aguilar, Virginia A. Andis, John and Anne Banerian, L.R. Clock, Gary L. Guerrero, Colin Harrison, Jack L. Macy, Arthur and Charlotte Nielsen, George and Yoko Pestik, and Robert and Pat Scolari.

As a special memorial, the Friends of Dave Baxter (a group of contractors and Air Force personnel organized in Vandenberg) purchased a stripe and three stars. Baxter was principal director of Shuttle Activation and operations directorate for Aerospace Corporation (AC) from 1981 until his death in December 1984.

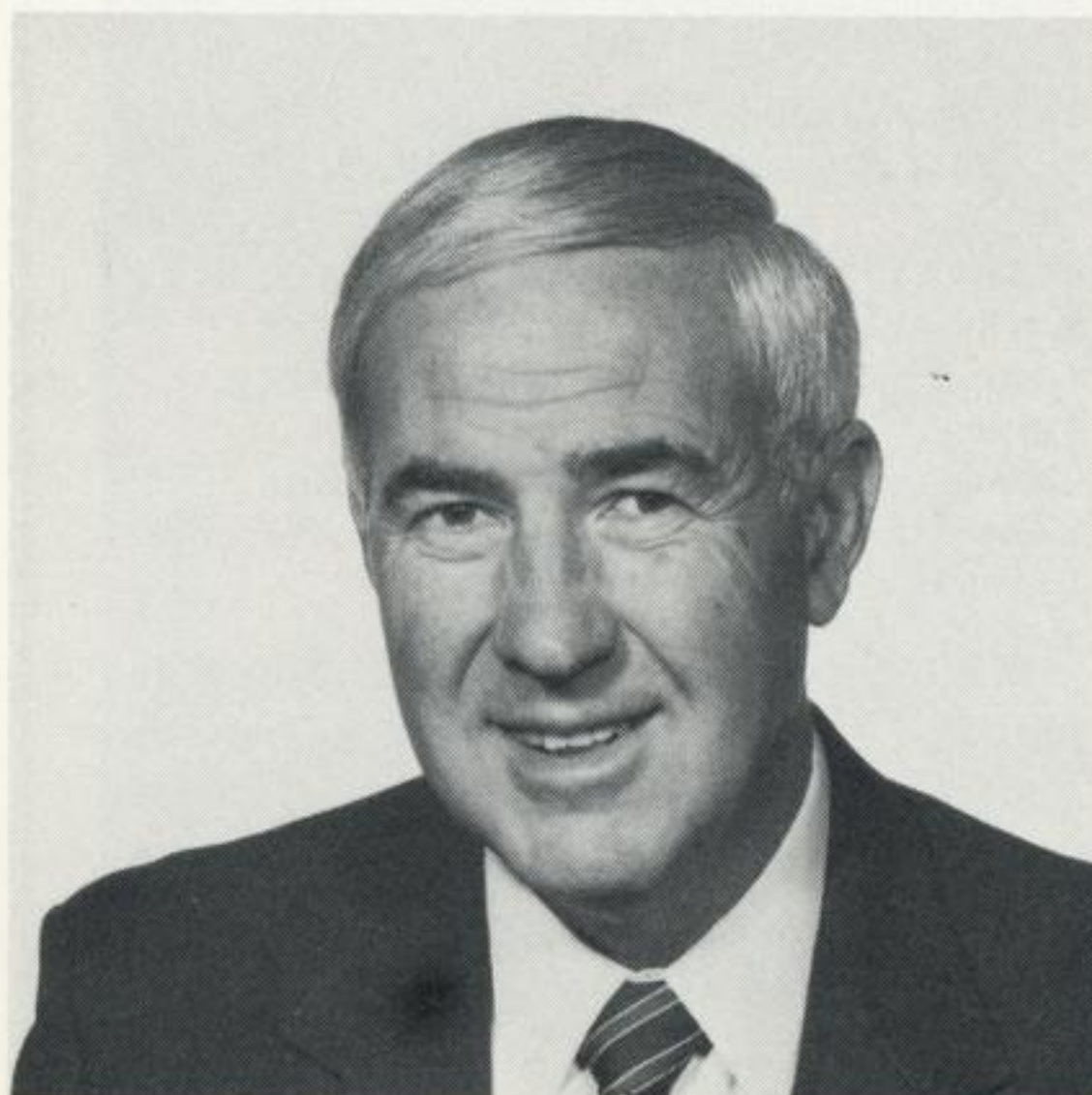
The stripes and blue fields of the 155x61-ft flags are painted on the north and south faces of the SAB at Space Launch Complex 6 (SLC-6). The stars, each five feet in diameter, are fabricated singly of steel and attached to the fields. ■

People

Employee elected president of national organization

Robert Gammill, chief of staffing support and college relations for Denver Aerospace, recently was elected president of the Rocky Mountain College Placement Association (RMCPA).

The association is composed of employers and directors of college and university career planning and placement. Gammill was also appointed chairman of the seven regional associations that make up the national organization by the College Placement Council. Gammill has been associated with the college relations program for more than eight years. ■



Gammill

Five share space station logo award



The contest to design a logo for the Phase B space station study ended June 7 with five awards for winning concepts.

Those selected by Jim W. McCown, space station vice president, and members of his staff were picked from 89 entries submitted by 49 participants. Winners were Jim L. Roberts, Philip H. Hayward, Ronald B. Murphy, Hugh C. Webb (Michoud), and Thomas W. Burns.

"We received many good designs," McCown said, "and it wasn't easy to make selections. We selected various aspects from the designs to combine into one concept." ■



Quality Circle improves job request form

In September, 1984, the Facilities Control Quality Circles group planned and received management approval for a new request-for-job (RFJ) form, now available from office supplies.

"We wanted to enable personnel and facilities organizations to respond more efficiently to requests for facilities support," said Kathryn M. Fisher, facilities administrator and team leader in 1984. "This new form requires more information and gives more complete instructions to help avoid delays in processing." ■

Trek improved her work and goals, Everest climber says



Kalkowski reaches base camp

Climbing Mount Everest last month has given Robin I. Kalkowski confidence to set ever-increasing goals.

"Even though I've never been very physical, I decided last year to climb every 14,000-ft peak in Colorado," she said. "I discovered that my persistence and increasing stamina, as I set goals

and take new risks, carry over into all aspects of my life."

Kalkowski said her perspective changed after attending Martin Marietta's Managing Personal Growth course, followed by the Outward Bound program. When she learned one of her Outward Bound instructors was planning a 30-day expedition to Mount Everest, she added another accomplishment to her growing list last month: she climbed to the peak's base camp at 17,800 ft, a 22-day trek.

"It was not just a physical experience. We learned the simple yet fascinating life of Nepal, and our group became very cohesive as we solved problems together. 'No' is not an alternative in the Outward Bound program, and I feel as though the entire experience gave me new insights and confidence," she said.

Kalkowski, a budget and data control coordinator for the computerized sort and retrieval (CSAR) system, has worked for Martin Marietta for five years.

"You learn to face fears up there... and not to back down. Once you're up there, it's exhilarating. But I have come to appreciate simple things like showers."

Recreation/employee services

Discounts—\$4.50 and \$3 tickets to the Denver Zephyrs versus Oklahoma City game and concurrent July 4 fireworks are available from the recreation office, Engineering Building 124G, or by mail order forms found on recreation racks.

Tickets are also on sale now at the Turn of the Century box office to see Gladys Knight and the Pips on Monday, June 24 and Tuesday, June 25, for a two-for-one price of \$17.95 plus a \$1 select-a-seat charge for employees.

Radio—Waterton Amateur Radio Society plans Field Day 1985 on June 22 and 23, with at least two stations plus a novice station on the air. The society needs operators for the planned 24-hour air time. Call Dave Cowden, ext 7-6961 or Hal Beaver, ext 1109.

Music—The 21st Annual International Ragtime and Traditional Jazz Festival will be held July 2-7 in Heritage Square in Golden, CO. Ticket order forms can be found in

recreation racks, offering special employee prices.

Golf—Results of the recent Martin Marietta Best Ball Golf Tournament are:

Partner best ball (est hdcp) - Jess Deal/Henry Wilmot - 58

Partner best ball (Peoria hdcp) - Frank Fillipp/John Gavin - 43

Men:

Low gross (medalist) - Tom Jaron - 76

Low net (est hdcp) - Brady Nichols - 62

Low net (Peoria hdcp) - J.R. Corbitt - 53

Ladies:

Low gross (medalist) - Kathryn Leigh - 97

Low net (Peoria hdcp) - Marilyn Richter - 69

Closest to pin No. 5 - Robert Sandstrom, Kathryn Leigh

Long drive No. 7 - Tom Jaron, Kathryn Leigh

Closest to pin No. 11 - Sam Mannino

Long drive No. 13 - Chip Barrett, Susan Syroski

Golf—Reserve August 10 for the Martin Marietta Open at Raccoon Creek Golf Course, with a 7:30 a.m. and 1:00 p.m. shotgun start. Watch bulletin boards for early July announcement and entry blanks.

PSP values

Unit values for the Performance Sharing Plan (PSP) for April follow:

—Fund A (indexed equity) 2.6678626590

—Fund B (fixed income) 2.1198285825

—Fund C (company stock fund) 3.3997649351

—Fund D (TRASOP) 1.3357030512

News briefs

Association to discuss fitness

Melanie DeBenedet will discuss physical fitness at the June 19 meeting of the Career Women's Association at the Padre Restaurant. Fruit and vegetable hors d'oeuvres will be served at 5:00 p.m. prior to a business meeting and the fitness presentation.

Paid reservations are due by 4:00 p.m. on June 17. Call Anne Rackowski, ext. 7-4447, for a contact in your area. The cost is \$2 for members, \$5 for non-members.

New travel agency begins operating at new location

Ask Mr. Foster travel agency began operations in their new facility on June 10.

The full-service office for Martin Marietta is located at 7901 South Park Plaza, suite 106, Littleton, CO.

The new phone numbers are:

—reservations: 794-8444

—inquiries: 794-8555

Rattlesnake danger a reality

On warm days, the rattlesnake hazard becomes high at the main plant.

Warning signs are posted where rattlesnakes are most often present.

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MARTIN MARIETTA AEROSPACE

Call Ext. 5364 with information or suggestions for articles, or call one of the following coordinators.

Technical Operations:	Floyd R. Teiffel Jr. 6872
Operations:	Steven L. Cohen 3369
Business Development:	E. W. Andrews 4619
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Photography by:	Pat Corkery

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

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Corporate games

More than 3000 athletes competed in the fifth annual Denver Corporate Games June 8, to benefit the Colorado Special Olympics.

The games featured 30 local corporations. Organizers hope to raise more than \$15,000 to benefit physically disabled and mentally retarded children and adults.

Martin Marietta came in a strong third with an overall point total of 200 behind Mountain Bell's score of 202 and Public Service's total of 226 points. The company's team took several firsts—in swimming and volleyball—and tied Public Service for first place in racquetball. Employees placed third in track, tennis, and bowling; ran fifth in the 5-kilometer race; and tied AT&T Consumer Products for fifth place in golf.

