

Martin Marietta

Number 2

November 9, 1990

## Group outlines environmental goals

Environmental concerns must be integrated into all aspects of the Astronautics Group's business if we are to become recognized as a leader in the environmental management arena, top management told 200 employees attending the Group's first environmental conference.

The conference, which had as its theme "A Commitment to Leadership," was designed to help develop a common view of environmental goals for the 1990s, and enhance awareness of environmental issues, organization, and responsibilities within the Group.

Astronautics President Peter B. Teets, Environmental Management Director Bob McMullen, and the managers of various

environmental program areas within the Group all stressed the importance of being a leader in environmental management, and outlined ways in which the Group is accomplishing that goal.

In addition, representatives of two public interest groups told attendees at the two-day conference what the public expects from Martin Marietta in the way of environmental performance.

"I think it's of real importance that we bring environmental management more and more into the mainstream of our business," Teets said in kicking off the conference. He said that means considering environmental impact in the Executive Planning Panel process, through which the company decides

what programs it's going to bid, and in executive compensation.

According to Teets, the Group has taken a number of proactive actions to protect the environment, including upgrading its wastewater treatment facility, and building facilities to intercept and treat contaminated groundwater.

Realizing there is still more to be done, Teets outlined four goals for the future, including:

- One hundred percent compliance with environmental regulations, 100 percent of the time, which he compared to

*See Environment on page 4*

## Magellan to resume mapping

Magellan is scheduled to resume Venus mapping operations Saturday after a two week hiatus caused by superior solar conjunction, the period of time in which the Earth and Venus are on opposite sides of the sun. The alignment was expected to block or seriously interfere with spacecraft radio communications, and hence the ability of the spacecraft to return image data to Earth.

Unexpectedly, solar conjunction did not interfere with signal quality as much as anticipated and the team was able to track the X-band engineering telemetry signal and the weaker S-band engineering telemetry signal. The mapping data, sent to Earth on X-band at a much higher rate, was not tracked.

*See Magellan on page 3*



**Magellan project scientist** Dr. Stephen Saunders of the Jet Propulsion Laboratory revealed the latest images of Venus to Martin Marietta's Magellan spacecraft team Oct. 24. Saunders said that once Magellan completes two and half months of mapping, "we'll have more data about Venus than has been provided by all the previous missions." The images have shown scientists staggeringly steep cliffs, mountains that dwarf Mount Everest, smooth rock and gravel plains, and impact craters like those shown in this photo. To date, only about 1.5 percent of the data Magellan has returned to Earth has been analyzed.

Saunders said that many of the features on Venus are similar to those found in the Himalayas, Iceland, Hawaii and California's Mojave desert and many have been generated by similar natural forces. However, even Saunders, who is the project expert, expressed awe at some of the unique geologic scars on Venus that are unlike anything on Earth. He said scientists expected to see mountains formed by crustal "folding" like the Appalachians, but have found evidence that they may be formed by a "pulling apart" of the surface crust.



## Third quarter financial results reported

Martin Marietta Corporation reported third quarter net income of \$108.8 million, a 25 percent increase from year-earlier net of \$87.3 million. Per-share income rose 31 percent to \$2.16 from \$1.65 in the corresponding 1989 quarter.

Sales for the quarter rose five percent to \$1.49 billion from \$1.42 billion a year earlier.

Backlog at September 30 was \$11.7 billion, compared with \$11.6 billion a year ago.

Third quarter earnings include a non-recurring gain on the sale of Florida real estate including a

shopping center, as well as the positive effect of a favorable ruling in a legal dispute related to the 1989 sale of a cement plant. Together, these items added 25 cents per share to results. Operating income in the quarter trailed year-ago figures principally because of an \$11 million provision for improvements to the Air Defense Anti-Tank System (ADATS). Prior to that charge, operating earnings were up about five percent over the third quarter of 1989.

Third quarter sales and earnings were higher in all operating groups except Electronics &

Missiles, where a small decline reflected completion of the Copperhead anti-tank projectile program and the tapering off of production of the Hellfire anti-armor missile in anticipation of completion of that program next year.

During the third quarter, the Corporation received contracts totaling nearly \$500 million to produce jet engine thrust reversers for General Electric and Pratt & Whitney and won a U.S. Postal Service contract for \$138 million, with a potential value of \$600 million, to produce automated mail-sorting machines

using high-speed bar coding technology.

Nine-month net income rose 16 percent for 1990 to \$270.4 million, or \$5.33 per share, from year-earlier net of \$233.4 million, or \$4.41 per share. Year-to-date sales increased to \$4.6 billion, a gain of more than 9 percent from \$4.2 billion a year ago.

Third quarter per-share earnings also reflect a year-to-year reduction of 2.7 million in average shares outstanding as a result of the Corporation's stock repurchase program.

## Martin Marietta acquires ATARS contract from Control Data Corporation



Martin Marietta Corporation has acquired the rights to complete development, testing, integration, and production of the Advanced Tactical Air Reconnaissance System (ATARS) from Control Data Corporation (CDC) of Minneapolis, the program's prime contractor.

The ATARS is an upgrade to Air Force tactical reconnaissance aircraft, using electro-optical sensor suites to replace existing camera and film systems. In 1988, the Air Force

awarded CDC a \$118.6 million contract to provide ATARS sensor integration and reconnaissance management systems to the service's Aeronautical Systems Division at Wright Patterson Air Force Base, Ohio.

The system includes low- and medium-altitude electro-optical sensors, an infrared line-scanner, a digital recorder, a jam-resistant data link, and a reconnaissance management system. It records video information on magnetic tape that can be directly transmitted from aircraft to ground stations using a data link. Aircraft crews can review and edit the video imagery.

The Corporation's Electronic Systems Company in Orlando, Fla., will integrate ATARS sensors into the Air Force's RF-16 reconnaissance pod, the Navy's RF-18 reconnaissance pallet, and the service's Medium Range Unmanned Air Vehicle.

## LETTERS

### In the dark

Why is it that news and information about past layoffs and impending layoffs are found in *The Denver Post*, *The Rocky Mountain News*, various news stations, and general gossip, and not in official company memos? The employees are always the last to know! Talk about lack of communication!

Signed,

In the dark as usual

P.S. What about people who have been told they will be laid off, but no official termination date? How rude!

*(Editor's note: While our guidelines say letters-to-the-editor absolutely will not be published unsigned, we are making an exception in this case because we feel this issue is so important. Employees were informed of the workforce reduction announcement at the same time—and in some*

*cases before—the news media with bulletins at all facilities. Deer Creek Facility employees also were informed via the Video Information System. We make every attempt to tell employees first, and expansion of the video system to all facilities will help us do that more quickly.) Employees have stated that they prefer being told of potential offloads or layoffs that affect them as soon as possible. When this communication occurs, it is common not to have specific dates. It is our intent to notify affected employees of an impending reduction in force as it affects them as soon as possible. Individuals may be identified for offload based on business/program requirements. This, however, may result in reassignment and does not necessarily equate to a layoff from the Group. All official layoff notices have specified employment separation date.*

# McCandless fascinates students with MMU stories



*Retired Navy Capt. Bruce McCandless, the first astronaut to fly the Manned Maneuvering Unit, delivered a presentation Oct. 25 on his experiences in space to 500 fascinated Cherry Hills Elementary students and teachers.*

*McCandless, who recently joined the Astronautics Group's Central Technical Operations staff, answered the students' questions and posed for photographs with the group. He was promoting the National Red Ribbon Campaign for a drug-free America.*

*McCandless is working in systems engineering.*



## Magellan from page 1

"We have surpassed all expectations," said Julie Webster, the Magellan lead telecommunications subsystem engineer. "We received telemetry on the S-band and X-band communication links. No spacecraft has ever done this before during superior conjunction."

**"We have surpassed all expectations."**

*Julie Webster*

Webster said that, although the spacecraft team still cannot confirm whether mapping during solar conjunction would have been possible, she no longer fears signal loss during future periods of solar conjunction. The next such event is expected in about 19 months.

The first opportunity to resume mapping operations was Nov. 7, but the sun continued to interfere with commands sent up to the spacecraft. Commands were either distorted by solar activity

or not received by the spacecraft.

The spacecraft's mapping radar was turned to standby Oct. 26, three days earlier than planned because the spacecraft team was concerned about vibration of the spacecraft's solar panels during the mapping portion of each orbit. According to Magellan Deputy Program Manager Ken Ledbetter, the additional time gave the spacecraft team the opportunity to develop a "fix" for the solar panel vibration.

Commands will be sent to the spacecraft today to bring the synthetic aperture radar back to its operational state. Subsequent commands—which will turn off the solar panel control system that uses feedback from the sun sensors and set the panels at a fixed position—will temporarily correct the solar panel wobble. A long-term solution, involving a change in the computer algorithms that keep the solar panels aimed toward the sun, is being tested in the Magellan simulations laboratory and is expected to be transmitted to the spacecraft Nov. 12.

## Space Systems scores victories with 100% award fees for key programs

Space Systems scored big victories last week with 100 percent award fees for three of its programs.

The Company earned a 100 percent award fee for its perform-

ance on the Magellan program, and the latest phase of Space Systems' Independent Verification and Validation of IUS software. Defense Systems also won a 100 percent award.

## Rocket Ranch



*Do you have anything named after a John Wayne movie?*



**John J. Walker**, a Space Launch Systems investigative engineer, accepts the first Employee Award for Environmental Advancement for his contributions in the advancement of environmental management at the Astronautics Group. Walker, who was presented the award at the Group's first environmental conference Oct. 24 was praised for showing consistent dedication to the Group's goal of recognized leadership in environmental protection and resource conservation.

Walker, a 30-year Martin Marietta employee, will retire in January.

## Astronautics Institute offered to minority, women suppliers

The Astronautics Group—working in partnership with the Minority and Women's chambers of commerce—is offering Astronautics Institute college courses to minority- and women-owned businesses who supply the Group.

The Group's decision to offer this educational opportunity, formerly known as the Evening Institute, has received tremendous response from minority representatives, according to Dick Creasey, manager of career development in Human Resources. More than 65 minorities and women have registered to

participate in the pilot program this fall semester at state colleges and universities, and that number is expected to double in the spring.

The entire management team of one supplier is registered in classes ranging from stress management to electron microscopy. Other businesses are following suit.

Around 5,000 employees currently take advantage of the Astronautics Institute each year; tuition, books, and expenses are Corporation-funded at any Colorado state school (some out-of-state schools are accepted).

About 100 to 130 courses, taught by employees, are offered each semester in engineering, computer science, business management, technical management, and other diverse subjects, such as stress management, speed reading, and personal management skills.

More than 50 percent of the 1,500 degrees being sought this semester are graduate level.

Herb Watkins, manager of materiel support operations, and Dave Hunter, chief of small business development, initiated the drive to include minority suppliers in the institute program.

"We realized how critical education is to these businesses and looked for a way to offer them an advantage while improving our relationship," Watkins said. "The program was already in place."

Watkins and Hunter then proposed the plan to Creasey, who said he immediately was sold on the idea.

"We're very interested in serving our employees and improving our relationship with our suppliers so we can do business better together," Creasey said.

### Environment from page 1

achieving 100 percent mission success in our space programs.

- Pollution prevention and waste minimization, which he said is "right" from an ethical and moral point of view, but also from a business standpoint.
- Employee awareness. "We need to preach the conservation ethic," Teets said. "We need open communication of our goals."
- The need to measure our programs in the environmental management area.

McMullen said the Group has

good environmental systems and management in place, and is in the top 15 percent of companies in the country in the way it manages the environment.

"Now we need to move off into innovative areas," McMullen said, which means eliminating use of hazardous chemicals wherever possible, changing processes to reduce environmental impact, and minimizing the impact of our products and programs through recycling, conservation, and risk management.

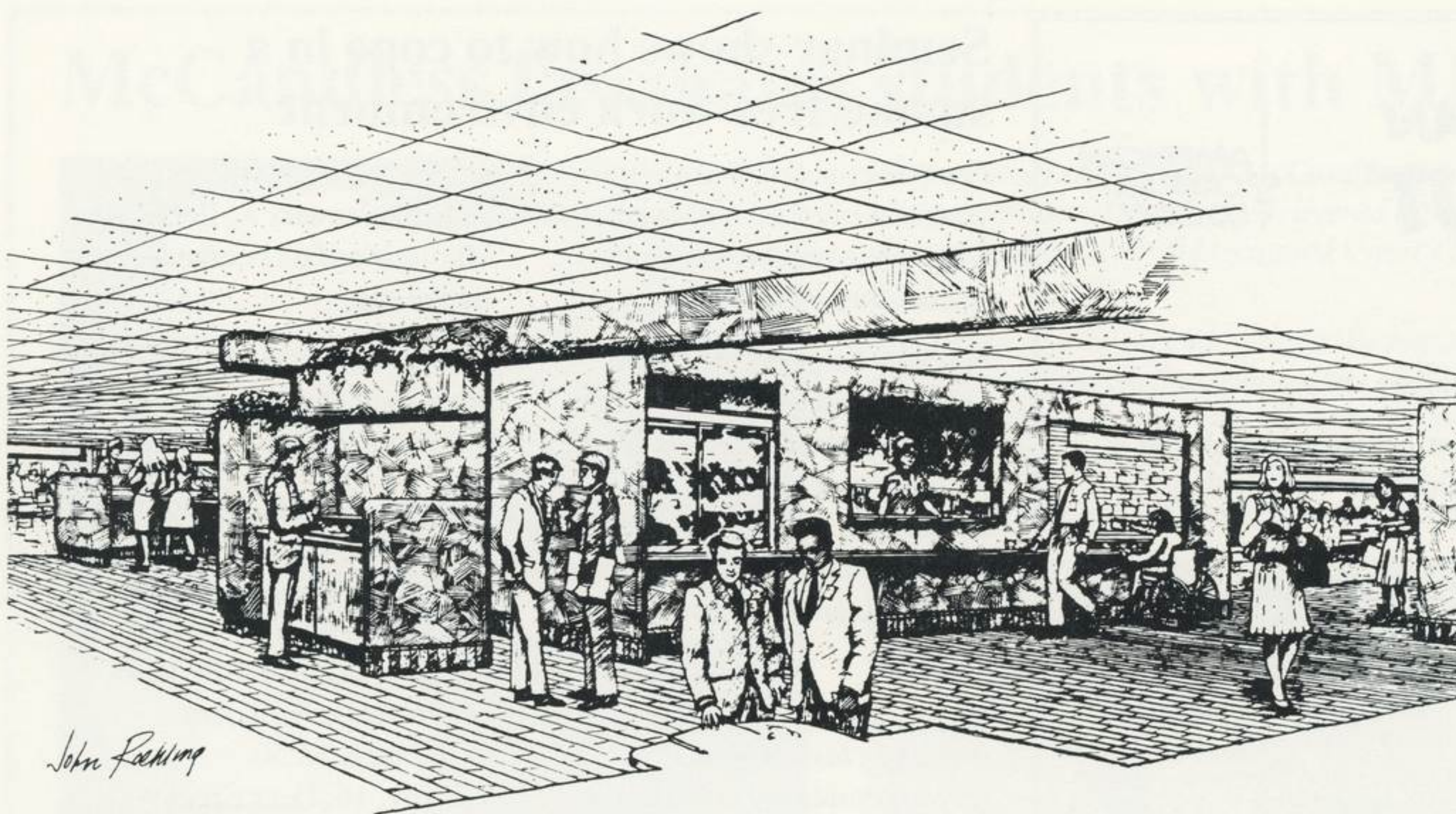
He said good environmental management is not just the responsibility of the Environmental Management department, but of all employees.

"Environmental Management as a department can be a facilitator, but we can't make it happen," he said.

Anne Willhardt of the Sierra Club and Mary Hess of the League of Women Voters of Colorado offered several suggestions on how Martin Marietta can become a leader in environmental management. They included raising the personal awareness of environmental issues among employees, conducting a broad conservation program, working on joint environmental projects with universities, and being more open with the public when there are environmental problems.



Employees recently honored for 30 years of service include, standing, left to right: Ken Richardson, Larry Fink, Leon Ackerman, Bill Stoakes, George Diamond, Dick Schall, Ted Kiefer, Frank Harn, Jack Bird, Paul Rader, Ronnie Messinger, and Walt Gross. Seated, left to right: Dick Greunke, Lon Capps, Betty Hence, Merla White, Bette Wooster, and Wayne Willard.



*Engineering and Design, formerly Facilities Engineering, designed the remodeled LSC cafeteria.*

## LSC cafeteria gets a face lift

As you may have noticed, the Littleton Systems Center's cafeteria has been under construction. However, the remodeled cafeteria should be completed by mid-January. Inconveniences should be minor until Friday, Nov. 16, when the cafeteria will be shut down until early January.

Beginning Nov. 19, a temporary food service will accommodate employees in the back open area corridor. A continental breakfast

will be available, while two minicafeteria stations will provide lunch. Some coffee services will be available.

After remodeling, LSC employees may look forward to an enlarged cafeteria and kitchen with the following improvements:

- enlarged seating capacity
- additional room for special functions/luncheons and meetings

- expanded kitchen with more hot food tables for a greater variety
- conversion to china and silverware service with an enlarged dish room and updated dishwashing equipment
- relocation of the deli bar to create a fast food "grab and go" concept to speed up service and reduce crowding
- space for a 900-square-foot employee store.

## Command Media gets a new look

The Command Media department unveiled its "new look" binders at the industry-wide Command Media Symposium recently held at Deer Creek.

Besides being thinner and easier to handle, the new mauve binders—coupled with a new format—make locating and using documents easier. The new command media manual includes information on the Corporation's seven major functional areas: Administrative Services, Asset Management, Business Management, Engineering Operations, Human Resources, Production Operations, and Quality. The non-organizational approach enables the structure of command media to remain static regardless of changes within the organization.

With one manual for each of these functional areas, readers can find the information they need quickly. Corresponding policies and standard procedures are in the same manual so readers no longer have to look in two locations for information on one topic.

Phil DeLeo, manager of Command Media, said he hopes all readers will be excited to see the documents redesigned, rewritten, and reorganized. However, restructuring and reformatting take time, he said.

Command Media's goal is to have all documents in the new binders by the end of next year, which means some areas may not be completely rewritten yet.

## PSP contributions adjusted to meet tax regulations

To meet tax regulations, Performance Sharing Plan (PSP) contributions for highly-compensated employees will be reduced for November and December of 1990.

Effective the first pay period ending this month, the permissible before-tax contribution percentage for highly-compensated employees will be reduced from 10 to 9 percent and the maximum total election percentage for before-tax and after-tax contributions combined will be reduced from 15 to 10 percent.

The reduction in total contributions is caused by the short period of time left in the year to correct the amounts to pass a tax discrimination test, which is conducted periodically. In compliance with federal regulations, the test ensures that preferential treatment is not given to higher-paid employees.

The contribution restrictions will begin Nov. 9 and end Jan. 4, 1991. New requirements in January may allow an increase in contribution levels.



*In proclaiming October as National Quality Month, Gov. Roy Romer and members of the American Society of Quality Control (ASQC) honored Nicholas VanDewerker as the 1990 ASQC Quality Professional of the Year. VanDewerker, Astro-nautics Group director of Product Assurance, earned the award for his commitment to TQM. Pictured with Gov. Romer at the Capitol Building are ASQC members, standing from left, VanDewerker, Robert Wahrle, Henry LeFevre, Paul Thomas, Jad Jadunath.*

# GREAT AMERICAN SMOKEOUT



It's one holiday no one has to spend alone.

The American Cancer Society's Great American Smokeout is celebrated each year by millions of smokers who try to quit smoking for just 24 hours.

Millions of non-smokers join in by giving their support. If you're thinking about quitting smoking, you don't have to go it alone. Make November 15, the day of the Great American Smokeout, a big holiday in your life!

Smoking is related to 390,000 deaths each year. Become one of the 40 million ex-smokers in the country today.

## Seminar shows how to cope in a smoke-free work environment

Are you concerned about how you, as a smoker, will cope when the company becomes smoke-free on January 1?

Attend a helpful, 50-minute seminar, and find out how employees who smoke, and work for companies such as Blue Cross/Blue Shield, U.S. West, and Manville Corporation, have learned to adapt to a smoke-free worksite.

*The seminar is not a stop-smoking class.* It is an opportunity for employees to develop effective strategies and prepare

themselves mentally and physically for January 1, 1991, when Martin Marietta becomes smoke-free.

Employees are encouraged to bring their lunch to any of the following places:

- Nov. 13, LSC—Room 107 12:00—12:50
- Nov. 14, Eng. Bldg. Presentation Room 11:00—11:50
- Nov. 14, SSB—Sixth Fl. Presentation Room 12:00—12:50
- Nov. 16, Deer Creek—Skylab Room 12:00—12:50

# EMPLOYEE Services and Recreation

**Career Women's Association**—CWA is sponsoring a holiday Sunday brunch at the Ascot Theatre, featuring "Camelet," on Sunday, Dec. 9. Tickets are \$16 for CWA members, \$20 for non-members and guests, and \$12 for children 12-years old and under. Anyone interested in attending the brunch should contact Carol Mowery at Ext. 7-8991. Paid reservations are due to Carol at mail stop S9880 by Wednesday, Nov. 14.

**Hunting and Fishing**—The group will meet at 5 p.m. Monday, Nov. 12, in the clubhouse at the recreation area. For more information, call Mel Smith at Ext. 1-8682.

**Fathom Dive Club**—Members and guests will meet at 6 p.m. for a potluck dinner followed by a meeting and program Monday, Nov. 12, at Greenwood Point Clubhouse, 5324 S. Broadway Circle, Englewood. Christmas party and 1991 trip plans will be discussed. For more information, call Wayne Cox at Ext. 7-6800 or Kristy Allison at Ext. 1-2265. Scuba diving lessons are available at a discount to employees and their families by contacting Kristy.

**Red Rock Bowmen**—Interested employees and club members will meet at 4:45 p.m. Tuesday,

Nov. 13, in the recreation area clubhouse. Prospective members are encouraged to attend and join the club. For more information, call Dave Unruh at Ext. 7-0477 or Mark Lyons at Ext. 7-5722.



**Photography Club**—Club members, guests, and interested employees can attend a meeting at 7 p.m. Monday, Nov. 26, at the Public Service Building, 10001 W. Hampden Ave. Club members will show slides of Crested Butte and the Albuquerque Balloon Festival. Also, bring any photographic equipment you wish to sell or trade. Call Bill Privratsky at Ext. 7-4969 for more information.

**Basketball Leagues Forming**—Team captains must have completed rosters with payment of \$10 per player into the recrea-

tion office at Deer Creek by Wednesday, Nov. 14. Entries sent by mail should be mailed no later than Nov. 12. Team rosters and information sheets, describing nights and locations of league play, are in the recreation racks.

**Preseason Basketball Tournament**—A double-elimination tournament is planned for Saturday and Sunday, Dec. 1 and 2, at Sheridan Middle School, 4107 So. Federal Blvd. A roster and \$100 registration fee are due by 4 p.m. Nov. 28 in the Deer Creek recreation office, third floor, room 3C307. (If mailing roster, send to Recreation, mail stop DC1344, by Nov. 26). Rosters and information sheets are in the recreation information racks.

**Commodore Users Group**—Members and interested employees will meet at 5 p.m. Tuesday, Nov. 20, in the clubhouse on the west side of the recreation area. Meetings of the C-64/128 and Amiga SIG's follow the group session. The MMCUG has a large C-64/128 and Amiga software library and Commodore computer hardware is available to club members. For further details, call Stan Lindholm at Ext. 7-3618 or Roy Kannady at Ext. 1-8569.

**Parapsychology Club**—The group will meet from 5 to 7 p.m. Thursday, Nov. 15, in a new location at Southbridge, 1101 W. Mineral Ave. The room is on the first floor, second door to the left. The speaker, David Beall, will discuss reincarnation. All employees and guests are welcome. Badges are not required to enter the building. Call Madeline Fountain at Ext. 1-6867 for more information.

**Ada Working Group—Ada/Software Engineering**—Interested employees will meet at 5 p.m. Wednesday, Nov. 28, in the Littleton Systems Center Presentation Room. The group will not meet in December. Call Robert Lewis at Ext. 1-6731 for more information.

**Your Employees Store**—YES has started a hidden badge number promotion on its monthly calendar. Random employee badge numbers will appear on each monthly calendar. Owner's of the badge numbers may go to any of the stores to receive a gift. Also, beginning in November, special vendor sales will be held at major store locations. More detailed information is available in the recreation racks and in the stores.

# Around Astronautics



Theresa Daus-Weber

## Local runner helps pace U.S. team

Group employee Theresa Daus-Weber, a member of the 1990 U.S. National Ultradistance team, competed in the 100-kilometer Edmund Fitzgerald Ultramarathon road race Oct. 27 in Duluth, Minn.

The U.S. team placed second to Germany, which was united for the first time in sports history. Daus-Weber had the fourth best time on the U.S. team.

Teams from Britain, Spain, Switzerland, Greece, New Zealand, and Australia also competed in the event, which was the first ultramarathon in America.

Daus-Weber, who works as lead technical writer for Materiel, Policies, and Procedures, said she hopes to obtain sponsorship to continue running in local races. Her ultimate goal is to qualify for the 1992 Olympics in Barcelona, where ultradistance running will debut as an exhibition sport. She currently has the second-fastest time in the U.S.

## CWA Bowl-a-thon raises thousands to fight child abuse

Martin Marietta's Career Women's Association (CWA) cosponsored an annual bowl-a-thon that raised more than \$14,000 for the prevention of child abuse.

CWA's special projects committee helped recruit and organize nearly 300 bowlers for the Oct. 6 event, which was held in conjunction with Family Focus, Inc., a metro area, non-profit group dedicated to the prevention of child abuse and neglect for the past 15 years.

Astronautics employees captained most of the bowling teams, while the Corporation donated \$300.

Membership in CWA is open to all interested employees, regardless of gender, age, or labor grade. For more information, call Tricia Buttel at Ext. 1-1163.

## Electronic Recap System courses offered by SLS

Space Launch Systems has announced the completion of work on its Electronic Recap System (ECAP). The system, which is part of the SLS Process Improvement Initiative, transfers records and documents from a paper to an electronic system for the Titan IV program. Training courses are now available. ECAP will be in production Nov. 26. For more information, call Brenda Gammill at Ext. 7-9381.

## New Macintoshes now on display

The Deer Creek Facility Computer Library will have the new line of Macintosh computers on display for a limited time this month.

Library hours are 7:30 a.m. to 3:30 p.m., Monday through Friday.

For more information, call Marilyn Huber at Ext. 7-6716.

## Make a difference with Big Sisters

Big Sisters of Colorado is in great need of volunteers. Fewer women have volunteered during the past six months, resulting in an expanding waiting list, which has grown from 130 to 180 girls.



If you would enjoy being friends with a girl between the ages of eight and 15, call Big Sisters at 744-3323. Committing to the program is a challenge, but with a little help, a Big Sister can be found for every girl waiting.



Bob Fosse and Gwen Verdon

## Fosse encore is tonight on Great Performances

Director-choreographer-dancer Bob Fosse is profiled in a *Dance in America* encore presentation tonight on Great Performances (check local PBS listings). The Emmy-winning "Bob Fosse: Steam Heat" features reminiscences by Fosse's wife Gwen

Verdon (shown with him in the film "Damn Yankees").

Great Performances, which is funded in part by the Corporation, continues Nov. 16 with "Sir Norbert Smith: A Life"—a send-up of British TV retrospectives of beloved actors.

## Group donates computer system

The Astronautics Group—in conjunction with Computervision, Inc.—has donated and installed a computer system valued at \$350,000 at Montbello High School as part of the Group's Computer Aided Design program.

Additionally, Corporation and Computervision employees are providing the expertise to maintain the system and the training necessary in implementing a top-notch computer system at Montbello.

ASTRONAUTICS GROUP

## NEWS


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Story ideas, letters to the editor, and questions are welcome and may be submitted to Public Relations.

Martin Marietta  
Astronautics Group  
P.O. Box 179,  
Mail Stop DC1020  
Denver, Colorado 80201  
(303) 977-5364

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# *From the Massive... to the Molecular*

Central Labs, an organization within the Astronautics Group, provides specialized research, design, fabrication, and analysis services. Ten laboratories work together in operations spanning more than 30 years and cover a wide spectrum of technology and engineering, supporting such programs as Magellan, Titan IV Space Launch Vehicle, and Space Shuttle programs.

Central Labs include Engineering Propulsion, Composites, Electrical Services, Mechanical Design & Fabrication, Microelectronics, Parts Evaluation, Data Services, Failure Analysis, Structures Test, and Materials Technology.

Call John McCorkle  
at Ext. 7-2588, or  
Michael Boex at  
Ext. 7-3788 for  
more information.



# **CENTRAL LABS**

