MARTIN MARIETTA

New Mean

ASTRONAUTICS GROUP

February 10, 1989 Number 3



COR leads give preparation tips

Company and segment leads have been busy preparing their areas for the coming Contractor Operations Review (COR).

COR is slated to begin Monday, Feb. 27, and will continue through Friday, March 10.

Most areas within Astronautics Group are making good progress.

Gary Hinds, lead for Manufacturing, said weekly walk-throughs are being used to reinforce the significance of self-audit in the workplace.

"Each person is important," he said. "We're accountable for each task we perform. They're our individual contributions to excellence."

To help people get ready for the COR, Manufacturing is making training opportunities available. Awareness of changes to command media is getting special emphasis.

Rick Malone, segment lead for Product Integrity, said, "The COR auditors will be looking to see whether we build quality in or try to inspect it in.

"That means we have to build it right the first time, and not rely on quality inspections to find defects. Pride in workmanship is the key."

John Bitzer, lead for Space Systems, said stockroom cabinets need to be improved. Some stockroom cabinets marked for quality-approved stock only have been found to contain non-quality-approved items as well.

"... we have to make sure we're not becoming 'string savers.' Now's a good time to clean out old files."

-Pete Schoonover

"Mixing non-quality-approved and qualityapproved stock is not the way we want to do business. It's like putting rat poison and instant coffee on the same self," Bitzer said. "We have to keep this from happening. I believe it's mostly a matter of attitude."

Pete Schoonover, lead for Strategic Systems, pointed out another item that can use some attention: purging files of obsolete material.

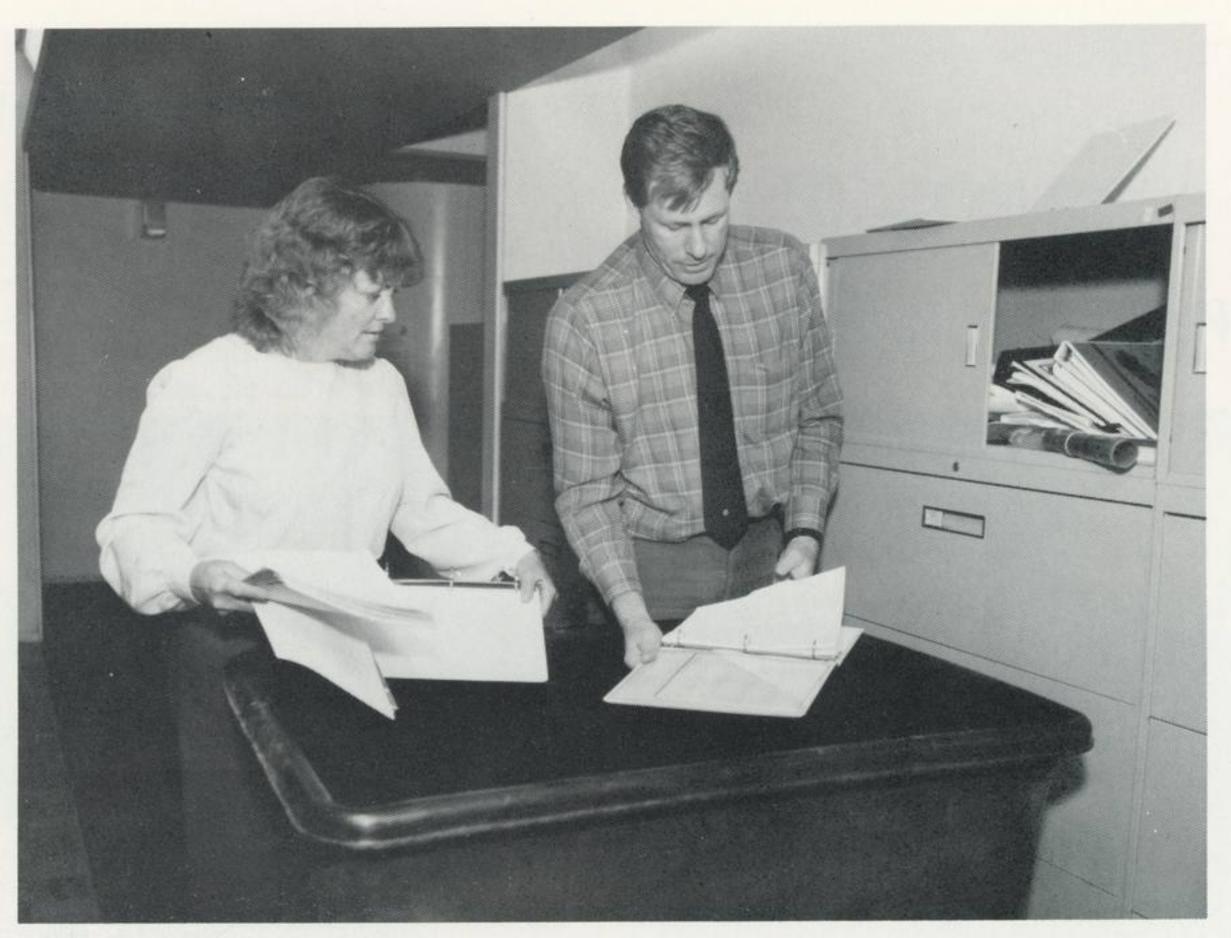
"We all keep personal reference files," Schoonover said. "But we have to make sure we're not becoming 'string savers.' Now's a good time to clean out old files."

One further item is unauthorized materials stuck on walls as though they were bulletin boards, Stanley F. Albrecht, vice president of Plant Operations, said.

"We need to get all these retirement party notices, newspaper clippings and so forth off the walls," Albrecht said.

"They not only look tacky, but they say to visitors that we are undisciplined.

"That's not the impression we want to convey to the COR auditors," he said. "We're a better company than that."



COR cleanout

Sharon Bond (left), a subcontract administrator, and Tom Stockham, a facilities representative, from Strategic Systems clean out old files on the second floor of the Deer Creek Facility in preparation for COR. Their work is part of an organized effort this week to clean up work areas.

Air Force COR terms and acronyms defined

You may have noticed a number of acronyms and new phrases in the vocabulary of your coworkers. They are all part of the COR audit being undertaken by the Air Force. The following short list of definitions is printed for the benefit of those employees who are new or not familiar with some of the acronyms and terms.

Contractor Operations Review (COR): This is a thorough audit of a defense contractor by a special Air Force team to ensure the contractor's management systems and production hardware are complying with the terms, conditions and procedures of the contract it holds with the government.

Air Force Contract Management Division (AFCMD): This division, located at Kirtland Air Force Base, Albuquerque, N. M, has COR as a responsibility.

Air Force Plant Representative Office (AFPRO): This office, located at each contractor's facility, provides daily surveillance of contractor performance. It is under the AFCMD command.

Ballistic Missile Office (BMO): This office, located at Norton Air Force Base, Riverside, Calif., will probably augment the review team.

Air Force Armament Division (AFAD): This division, located at Eglin Air Force Base, Fla., will also augment the review team.

Command media: Documentation outlining company principles, objectives, policies, responsibilities and standard work methods that comply with our contractual requirements.

Facilitators: Knowledgeable Martin Marietta individuals appointed by the leads of each functional segment to deal directly with respective AFCMD team members throughout the review.

Functional Focal Points: Individuals with expertise in the specific functional area being reviewed. The individuals are usually the first-line supervisors responsible for the performance of the function.

Finding: A nonconformance to or deficiency of written procedures or instructions. Findings are categorized as compliance, adequacy or existence.

Form 903: The form used by AFCMD team members to report findings not in compliance with the terms of the contract or operating policies and procedures.

P3: The policies, procedures and practices that form the basis of how Martin Marietta contracts guide our methods of operation and provide specific work instruction.

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 the Corporate Ethics office, 1-800-338-4427.

COR review will include housekeeping

The "COR Audit Training Book" offers a variety of checklists to prepare for the upcoming audit. These include safety, housekeeping, nonconforming hardware, procedures, shelf life material, tool calibration, facilities, property management checklist (custodian equipment),

hand	dling and packaging of ma certification, and discipline ing is a sample checklist for	aterial, tre/attitude	aining s. Fol-		
Hou	usekeeping	Yes	No	XX.	
1.	Overall area appearance.	-		1	
2.	File cabinets/desk tops clean and orderly.				
3.	Operator work areas clean, organized, uncluttered.				CONTRACTOR OPERATIONS REV
4.	Wall clean, well- painted—clear of obsolete charts, inappropriate photos, other articles.				
5.	Adequate supply of trash containers; trash properly disposed of.			9.	Authorized stockrooms/ storage rooms clean, organized and material
6.	Floor clean—free of boxes, cigarette butts, trash, cups, etc.				properly stored and well-marked.
7.	Vending areas clean and neat.			10.	No pallets, machinery or production materials left in aisleways.
8.	Eating, drinking, smoking limited to restricted break areas; break areas clean and well-kept.			11.	Review air filters in area for proper changeout to meet cleanliness requirements.
B 4					

Management urges employees to keep work areas clean and safe for audits

One of the first items the Air Force COR auditors will check-consciously or subconsciously—is housekeeping.

"If it's clean, neat and orderly, it makes an impression—a good impression," said Ron Halcomb of Safety, who has been through both previous Air Force COR audits.

"Likewise, if it's not, that makes an impression, too—a negative impression. If it's a messy area, the impression is that it's probably not safe," he said.

Halcomb said that safety engineers have begun making checks of all areas, including office areas, for safety and fire hazards. These can be as simple as stacking things too high on shelves to having too many or the wrong type electrical extension cords.

Another common safety hazard is improperly stored chemicals.

"It's a real fire and safety problem when chemicals are stored improperly. There can be no common storage of certain flammable materials," Halcomb said.

"All chemicals must be stored in proper storage containers, must be identified properly, and be stored in designated storage areas."

If you have any questions about what can be stored where, the answers can be found in Safety Standards (M-61-58), Volumes I and II.

"Or, people can call Occupational Safety and Health," Halcomb said. "We'll provide guidance in keeping work areas clean, neat, safe and orderly."

The following Safety engineers for each area can be reached at Ext. 7-4444, 7-4447, or 7-4028.

- Manufacturing and Operations D. T. Rosco J. D. Rivera
 - K. S. Guthrie R. B. Cohan D. L. Wright
- Test Area J. D. Sutherland
- S. E. Lappi Offsite Facilities D. T. Rosco

R. B. Cohan

- Space Park/ Programs C. D. Rose W. E. Hill III R. D. Packard L. R. Keele P. A. Stephens
- S. M. Smetana Industrial Hygiene A. J. Thun

J. M. Virtue K. J. Kimmerle

'Employee guide to P3' gives specific guidelines

A pamphlet called "Employee Guide to P3" is available to employees who want one.

"It explains the organization of P3 (policies, procedures and practices), and how our contracts guide our methods of operation and provide specific work instructions," said Phil DeLeo, Command Media manager.

"P3 media are the basis upon which we conduct business.

"The documents assure that the company meets contractual commitments to customers and provides them with the highest quality products," DeLeo said.

Approximately 290 sets of the policies and standard procedures are maintained at locations throughout the company.

"Any employee who is not sure where the nearest command media library is should ask his or her supervisor," DeLeo said.

If you need a copy of "Employee Guide to P3," call DeLeo at Ext. 7-9091.

New property management brochure published for COR

One of the eight areas to be evaluated during the COR is property management.

To aid Astronautics Group employees in keeping up with property, a new Property Management brochure has been published.

"The new brochure covers the basic property management requirements from acquisition through disposition," said Curt Figler, COR lead for Industrial Materiel Management.

"A copy of the new brochure will be sent to all property control representatives," Figler said.

One copy will also be sent to each department, and additional copies can be obtained from Figler at Ext. 7-6713.

On the cover

Lee White, chairman of the bargaining committee of United Auto Workers Local 766 (center), spent time in the factory last week after a briefing for the union's leaders.

Talking with Local 766 member Jerry L. Bryant, a numerical control mill operator (right), and Joe David Rivera, safety engineer, about the upcoming Air Force COR, he said, "We have to work together on this. Cooperation will help keep the doors open.

"We're looking forward to an 'all green' final report," White said.

White, who also heads the union's Safety Committee, added, "We want a safe work environment.

"We'll do everything we can to make that happen. Working together, the union's Safety Committee and the company's Safety Committee have identified and corrected a number of problems.

"We will continue to do that," White said. He urged union members to call him if they have any unresolved safety concerns.



Trummer recognized

Richard O. Trummer (second from left) displays an environmental sealing plug idea that has potential as a useful aid for electrical connector use. Trummer received the top award of \$600 in the latest group of invention winners. Participating in the award presentation were G.T. Marsh (left), vice president Technical Operations, Space Systems; K. H. Schlichtemeier (second from right), manager, Electronics Engineering; and D. A. Morris (right), manager of Interface Design.

Corporate news

Company forms advanced development and technology unit

Martin Marietta Corporation has announced the formation of a new element for the pursuit of advanced development and technology and named Robert J. Whalen to be its president.

The new organization, Martin Marietta Advanced Development and Technology Operations, will be located at San Diego, from where it will pursue advanced technology developments across the broad spectrum of the corporation's interests, unconstrained by business line. Focusing primarily on new developments in defense electronics, missiles, astronautics and information systems, Advanced Development and Technology Operations will pursue new efforts through prototyping and advanced development.

Whalen, a former vice president of the corporation and head of its Florida operations from 1976 to 1982, has been vice president and general manager of Alcoa Defense Systems Inc. and its predecessor organization for the past six years.

Martin Marietta receives Hellfire missile production award

Martin Marietta received a \$113.8 million U.S. Army Missile Command contract for production of 4,200 Hellfire laser-guided antitank missiles, the primary armament of the Army's Apache helicopter.

The corporation's award represents 65 percent of the next production option. Martin Marietta and Rockwell International Corporation submit competitive bids for each production lot of Hell-fires, and the low bidder receives the contract to build the majority of the missiles.

Corporation chosen to develop undersea acoustic system

Production of the latest lot of missiles will begin in 1990.

The Defense Advanced Research Projects Agency (DARPA) has chosen Martin Marietta to develop an undersea acoustic system, the first mission package for an unmanned undersea vehicle prototype development program.

DARPA is developing unmanned undersea vehicles with mission-specific hardware to demonstrate high-priority submarine support missions.

Under terms of a \$14 million cost-plus-fixed-fee contract, Martin Marietta Aero & Naval Systems at Baltimore will develop a Tactical Acoustic System mission package, integrate it with an unmanned undersea vehicle, and demonstrate performance under simulated operational conditions.

MMU remembered five years later

It has been given many nicknames—space scooter, jet backpack, space bicycle and space buggy. Its proper name is Manned Maneuvering Unit, but call it an MMU. And it celebrated its fifth anniversary this month.

The first flight of this self-contained backpack propulsion device, built by Martin Marietta, took place on the 41B Shuttle mission launched Feb. 3, 1984. Astronauts Bruce McCandless II and Robert L. Stewart tested both flight MMUs, performed various maneuvers, and practiced techniques for the Solar Maximum satellite repair mission, which followed in April. That mission, 41C, successfully undertook the first on-orbit repair of a satellite by astronauts George "Pinky" Nelson and James D. van Hoften. Then, in an unanticipated third mission, the MMU was used in November 1984 to assist in the retrieval of the Palapa B-2 and Westar VI communication satellites that had failed to achieve proper orbits. Astronauts using the MMU on that mission were Joseph P. Allen, Anna L. Fisher, and Dale A. Gardner.

"It may have been one small step for Neil, but it's a heck of a big leap for me," said McCandless as he began the historic first flight of the MMU. Alluding to the words of Neil Armstrong as he became the first human to set foot on the moon, McCandless became the first human to fly untethered in space. The flight was as enjoyable for him as it was for an awed public.

William Bollendonk, the MMU program manager five years ago and now director of the Tethered Satellite project, said the three missions were, "a culmination of many years of planned activities and the focus of energies of a lot of people."

Improvements initiated for Deer Creek mail

An improved mail and distribution system has been implemented at the Deer Creek Facility because of the growth in population, Jack Macy, manager of Materiel Operations, said.

Last month, Stanley F. Albrecht, vice president of Plant Operations, and Macy introduced the new distribution system for mail, priority packages and data, to Peter B. Teets, Astronautics Group president.

Currently in its trial stage, the system resolves many of the old problems, Macy said.

For instance:

- Before the system was implemented, employees were required to pick up office supplies at a specific time and place each week.
 Now, the supplies are delivered directly to the requesting department.
- And now, the mail at Deer Creek is delivered and picked up three times a day at designated minisort stations.

The changes and implementation began last month, and secretaries were briefed on the changes Jan. 9.

After the initial 60- to 90-day trial period, the system will be evaluated and consideration will be given to expanding the system to Waterton and Littleton Systems Center, Macy said.



Romer proclaims "Engineers Week"

Paul C. Cheng, a staff engineer for Space Launch Systems (backrow, center), meets with Governor Roy Romer (seated), Orville Stoddard (left), and Richard Weingardt (right) as the governor signs a proclamation designating Feb. 19-25 as "Engineers Week." Cheng is the president of the Colorado Engineering Council, which is helping to sponsor the week. Locally, the Astronautics Group is sponsoring a visit by astronaut Vance Brand to Denver.

SCATHA celebrates ten-year anniversary

An Air Force satellite built by Space Systems to investigate a "shocking" space mystery is still operating 10 years after launch—seven years longer than its expected lifetime.

The satellite, called Spacecraft Charging at High Altitudes, or SCATHA, was launched Jan. 30, 1979, to study the cause of an electrical phenomenon that had plagued satellites in the 1970s. For years, spacecraft orbiting at or near geosynchronous altitude (22,300 miles) had experienced unexpected equipment malfunctions. One theory was that satellites picked up high-voltage electrical charges on the shell of the spacecraft during periods of high solar radiation. Space Systems was awarded a contract in 1976 to build SCATHA to "solve" the mystery.

Packed with 13 experiments, SCATHA began beaming back information indicating that spacecraft did indeed pick up static electric charges at or near geosynchronous orbit, the orbit at which communications satellites send television and telephone signals. While satellites orbiting at near-Earth altitudes are surrounded by an ion plasma field that protects them from charging, satellites at the higher geosynchronous altitudes don't have that benefit. According to the Air Force, SCATHA has also aided other programs.

"SCATHA was designed to gather information associated with this phenomenon, which was then used to design future satellites," said Lt. Mark Kochanski, manager of SCATHA mission operations planning for the Air Force Space Division in Los Angeles. "This data has been used by operational programs in their spacecraft design." One future beneficiary will be the Air Force's Combined Release and Radiation Effects Satellite scheduled for launch in June 1990.

In addition to Space Division, the Office of Naval Research, National Aeronautics and Space Administration and the Air Force Materials Laboratory all use SCATHA to study spacecraft aging and to design future space systems.

The Air Force, through its Consolidated Space Test Center in Sunnyvale, Calif., still monitors the spacecraft daily and reviews data during periods of high charging or solar flares. Nine of SCATHA's original 13 instruments, as well as all major spacecraft systems, are still operating. In 1987, the Air Force maneuvered the spacecraft to increase its lifespan and to obtain new data. This maneuver will enable the spacecraft to operate well into the 1990s.

Ken Richardson, now technical operations manager for Space Systems' Zenith Star program, was Martin Marietta technical director for the SCATHA program.

Richardson said that at peak, about 150 employees worked on the program through the proposal, design, launch and flight operations. "I'm proud of that fact that SCATHA is still operating," Richardson said. "It shows that we did a good job."

-by Jeff Fister

Construction notes

Integrated Robotics Facility (IRF)—This new facility, currently under construction near the Advanced Computer Lab, is designed to support the Flight Telerobotic Servicer (FTS). When complete, at the end of February, the facility will feature large office spaces, computer rooms and a combination highbay/cleanroom.

50,000 Square Feet Additional Vaulted Space, (LSC)—This new vaulted space located at the Littleton Systems Center was completed last November.

Upgrade Reverberant Acoustic Laboratory (RAL)—The purpose of this recently completed project was to upgrade the floor stiffness of the acoustic chamber used for flight acoustic test simulations. Paramount to this upgrade was the installation of a 400-cubic-yard concrete mass below the floor that connects with the bedrock below.

Interim Final Polishing Building, Waste Treatment Plant—This newly completed facility was designed to provide increased capability to treat wastewater to meet Environmental Protection Agency standards.

Tool Refurbishing Facility—This new facility, currently under construction, is located south of the Inventory Building. When complete in March, this facility will support sandblasting operations in the I Building facility.

SSB Elevators—Dover Electric Company has completed a major rehabilitation of the SSB elevators. Both elevators are now in operation with improved controllers to speed service.

Deer Creek Pedestrian Tunnel and Covered Walkway—The tunnel connecting the south end of the Deer Creek Facility with the south parking lot is complete and in service. The covered walkway to the lower lot will be completed this month.

Brackeen resigns

Richard E. Brackeen resigned as president of Commercial Titan, Inc., Jan. 30.

Subsequently, he has been elected president and chief executive officer of MATRA DE-FENSE-SPACE United States unit, MATRA Aerospace Inc. The MATRA Group is a French aerospace manufacturer of missiles, satellites and electronics.

Income tax forms available

Internal Revenue Service and Colorado state income tax forms for 1988 are available at the following work locations: Waterton—Orb Building (between Administration and Engineering), room 200; Deer Creek Facility—Employee Services/Recreation office, room 3B314; Viewpoint I (building east of LSC)—room 206; I&CS—Benefits office; and South Lincoln Facility—personnel representative's office.

Tax form order sheets for Greenwood Commons are available in the information racks. Requests for forms will be filled via company mail.

Employee services/recreation

Fitness Classes—Registration forms are in the Employee Services/Recreation racks for 6-week fitness classes beginning Feb. 27. The registration deadline is Feb. 20. The classes include three levels of aerobics, fat burners, body shapers, and stretch sessions. Classes are at the Deer Creek fitness center. Fees are \$20 for Monday, Wednesday, and Friday classes, and \$13 for Tuesday and Thursday classes. Early registration is advised.

Ski Discounts—Coupons redeemable for a \$22 adult lift ticket at Crested Butte are available from the Employee Services/Recreation office at Deer Creek, the Waterton branch office in the Orb building (between Administration and Engineering), room 200 (open Monday and Friday, noon-4 p.m.), and from recreation representatives at SSB, LSC, Viewpoint, South Park III, South Lincoln and Greenwood Commons. To locate the representative nearest you, call Ext. 7-6750. Discount lift tickets for the Front Range ski areas can be obtained as follows: Vail-\$30 at King Soopers; Keystone—\$24 at 7-Eleven and King Soopers; Copper Mountain-\$24 at Safeway and Vickers; Breckenridge-\$22 at Albertsons and Safeway; Arapahoe Basin—\$20 at 7-Eleven; Winter Park—\$23 at Safeway; Loveland—\$17 at Safeway; and, Eldora—\$18 at Breeze Ski Rentals. Except for Vail, Breeze Ski Rentals and Gart Brothers/Dave Cook stores sell most of the Front Range area lift tickets at these discount prices as well.

Discount Movie Tickets—Employees can purchase movie tickets for \$3 for Mann, United Artists (formerly Commonwealth), and AMC movie theatres from the Employee Services/Recreation locations listed above. The tickets are redeemable 7 days 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.

Scuba Club—Fathom Dive Club members, guests and prospective members will meet at 6 p.m., Friday, Feb. 10, at the A-1 Scuba Center, one block west of Santa Fe at 1800 W.

Oxford Ave. Upcoming dive trips include Cozumel, March 26-April 2, and May 19-26; and Bonne Terre Mine, St. Louis, Mo., April 28-30. For details, contact Bob Rowe, Ext. 7-6589, or Carol Claypool, Ext. 7-4194.

Running Club—The Waterton Sheepherders running club will begin its spring race series in Waterton Canyon March 30. For information, contact Brad Eckhoff, Ext. 7-7102. Ski Club—Cross-country ski trips include—Feb. 11, Montezuma, contact Dan Hawkins, Ext. 7-0818; Feb. 18, Eldora, contact Frank Farrell, Ext. 1-1576; and March 4, a winter camping trip, contact Steve Ahmann, Ext. 7-4397. The club has a bus trip to Taos planned March 17-19. The cost is \$90 and includes transportation and two nights' lodging. Lift tickets are extra. Contact Steve Atterberg, Ext. 1-1349.

Hunting and Fishing Club—The group will meet at 5 p.m., Monday, Feb. 13, 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, Feb. 14, in the clubhouse at the recreation area. Contact Rich McNutt, Ext. 7-3324, or Dave Unruh, Ext. 7-0477.

Parapsychology Club—The group will meet from 5-7 p.m. on Thursday, Feb. 16, in the Littleton Systems Center cafeteria. The guest speaker is Sue Ware, physical anthropologist/research associate/forensic Egyptologist with the Denver Museum of Natural History. Non-employees are welcome to attend, but corporate policy requires a minimum age of 16. Employees must provide escorts for their guests and give names of guests to Helen Hussander, Ext. 1-6887, prior to the meeting.

Commodore Users Group—The club will meet at 5 p.m., Tuesday Feb. 21, in the recreation area clubhouse. Amiga users are welcome. Contact Dan Whittemore, Ext. 7-6324, or Chuck Barton, Ext. 7-9950.

Photography Club—Platte Canyon Photography Club members will meet at 7 p.m., Monday, Feb. 27, at the Public Service

Building, 10001 W. Hampden. Prospective members are welcome. For information, contact Bill Privratsky, Ext. 7-4969.

Bowling Tournament Results—The Martin Marietta Masters/Corporate Games Qualifying Bowling Tournament was held at Fun Plex on Jan. 7, 8 and 14. Ron Young and Terry Delp won the tournament and represented Martin Marietta in the Denver Masters Bowling Tournament on Feb. 4, 5, 11, and 12. Employees who will compete on the Colorado Corporate Games team in June are Earl Layton, Tom Renz, Terry Delp, Wendy Warren and Kathy Johnson.

Career Women's Association—The annual dinner meeting of the Career Women's Association (CWA) is Wednesday, Feb. 15, at Chateau Pyrenees restaurant. The featured speaker is Barbara Grogan, president and CEO of Western Industrial Contractors. The cost is \$17 for members and nonmembers. Employees interested in attending should fill out reservation flyers (located in the Employee Services/Recreation racks) today by 3 p.m.

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 December 1988 (November 1988 values in parentheses) are:

m paremateres, a.c.	
Fund A	0.99751056607
Indexed Equity	(0.9816182985)
Fund B	1.0974725658
Fixed Income	(1.0909887825)
Fund C	0.8206849749
Company Stock	(0.8508598333)

PSP

Unit values for the Performance Sharing Plan (PSP) for salaried employees in December 1988 (November 1988 values

in parentheses) are:	
Fund A	4.7400647629
Indexed Equity	(4.6521971379)
Fund B	3.1244874994
Fixed Income	(3.0997493125)
Fund C	4.3210757499
Company Stock	(4.4725103700)

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MARTIN MARIETTA
Chris Talley Editor

Call Ext. 7-5364 with information for articles.

Prepared and produced by the publications department.

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1989 holiday schedule

Over the next twelve months the following holidays will be observed by the Astronautics Group:

March 24	Friday	Good Friday
	Monday	
	Monday	
	Tuesday	
	Monday	
	Thursday	
	Friday	
PARTY STATE OF THE	Monday	
Table 1 de la Carlo	Tuesday	
CARL CONTRACTOR CONTRA	Wednesday	
December 28	Thursday	Christmas Week Holiday
	Friday	
	Monday	