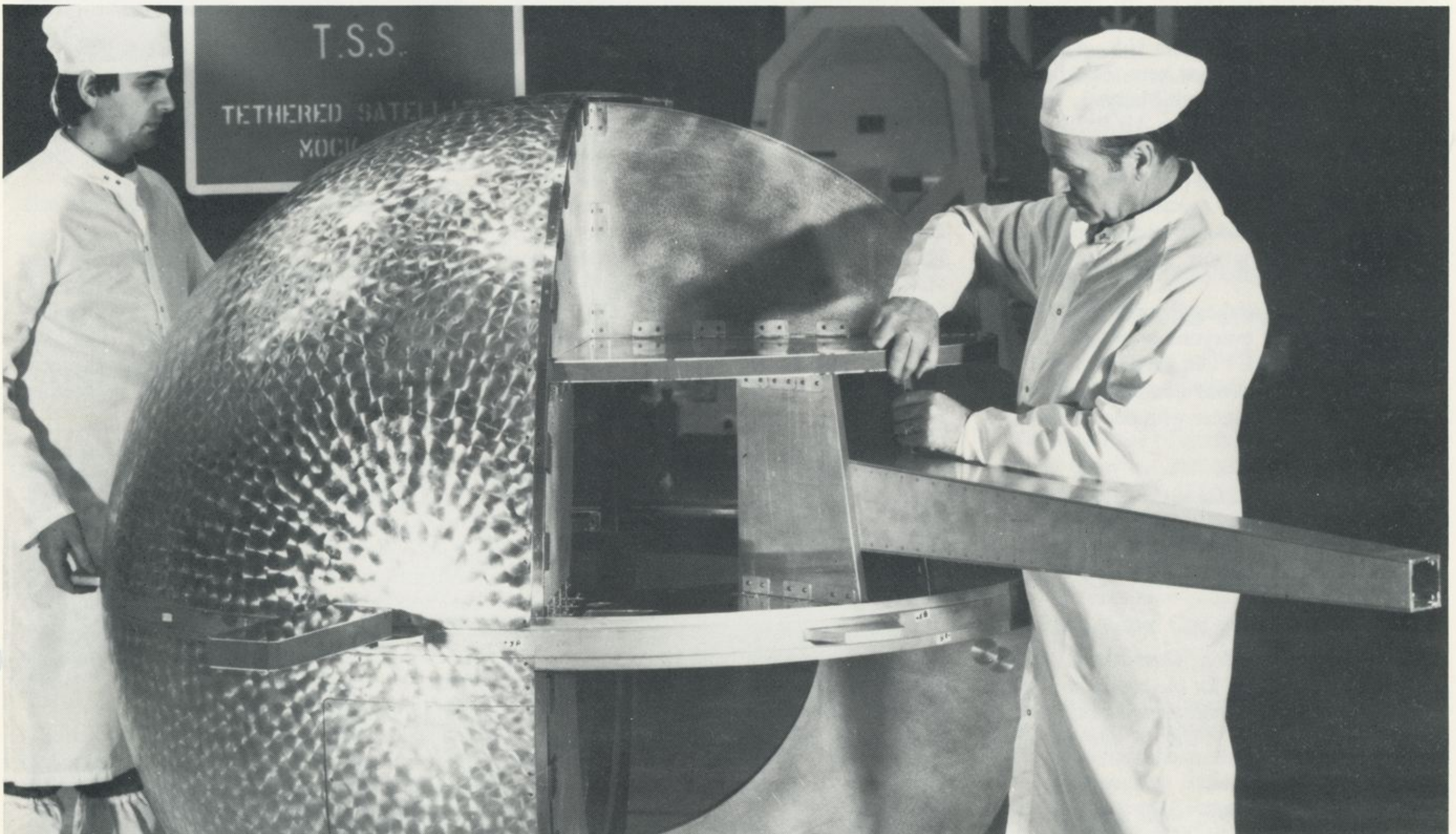


August 15, 1986 Number 16



Tethered satellite work progresses in Italy and the United States

Two Aeritalia workers in Turin, Italy, adjust a full-scale mockup of the tethered satellite their company is building for NASA. The reusable satellite, along with its tether and deployment mechanisms, is a joint project of the United States and Italy. Denver Aerospace, under contract to NASA, is designing, developing, and testing the tether deployer for the tethered satellite system, and will provide overall system integration

for NASA, while Aeritalia is building the satellite. The tethered satellite is designed for deployment from the space shuttle, with the first mission to use a conductive, insulated tether to deploy the satellite 20 kilometers above the shuttle. During the first mission, the tethered satellite system will be used to conduct electrodynamics research. Louis H. Ripp is program manager of the tethered satellite system.

Denver Aerospace wins Phase I MLV

Martin Marietta Corporation has won a Phase I contract to perform preliminary design work on a medium launch vehicle (MLV) for the U.S. Air Force.

The Air Force plans to use the vehicle to launch Navstar global positioning system (GPS) satellites.

The \$5 million contract, which extends to February 1987, was one of four parallel contracts awarded Friday, Aug. 8, by the Air Force's Space Division, Los Angeles, Calif. Other winners included General Dynamics, McDonnell Douglas, and a Hughes-Boeing-Rocketdyne team.

In Phase II, one of the four companies will be selected to build the vehicles for an initial

launch date of January 1989.

Martin Marietta, which will do the work at its Denver Aerospace facilities, will propose a version of its Titan expendable space launch vehicle to launch the Navstar satellites.

The company expects to launch the satellites from Air Force facilities at Cape Canaveral, Fla. Martin Marietta also is conducting an independent analysis for launching commercial satellites with the same vehicle.

The GPS is a space-based navigation system designed to provide land, sea and air forces with worldwide, three-dimensional position and velocity information by the late 1980s. When fully operational, the system will include 18 satellites and three spares.

The Air Force has said candidate launch vehicles will be evaluated on their capability to meet the GPS satellite requirement and provide potential for commercial adaptability.

Martin Marietta has three Titan launch systems in various stages of production and development for the Air Force. They are the Titan IV, a powerful Titan vehicle that will be used to launch space shuttle equivalent or heavier payloads; the Titan III series; and the Titan II space launch vehicle, a low-cost vehicle being converted from decommissioned Titan II intercontinental ballistic missiles (ICBM).

The medium launch vehicle team is directed by Donald G. Gray. ■

COR calls for highest employee commitment

A team of Air Force representatives will conduct a contractor operations review (COR) in October.

Part of an extensive program by the Air Force Contract Management Division, the intensive review involves major aerospace firms that serve the needs of the U.S. Air Force. This is the second review here. The first was conducted Feb. 18 through March 1, 1985.

Actions to prepare for the Air Force review are guided by a team led by Stanley F. Albrecht, vice president of Production Operations. Reaching the exacting standards required by the review will require every employee's participation and cooperation, Albrecht said.

"We are giving highest priority to a comprehensive effort by everyone between now and October," he added. "Our performance on this review is crucial to our company, and it can favorably affect business with one of our most important customers."

"Each employee must examine work practices, and know and follow contractual requirements, as defined by our policy, procedures and practices (P³) command media," Albrecht said.

Dr. James D. Porter, director, computer sciences department, is the deputy lead for Denver Aerospace. Reid H. Clausen, vice president of Operations, is the lead for Denver Information & Communications Systems (I&CS).

The COR team roster consists of the following: Richard Hannum, quality assurance; Peter Schoonover, product integrity; Ron Halcomb, industrial safety and fire protection; Hatch Wroton, engineering and configuration management; Herbert Watkins, subcontracts; Gus Hubert, contracts; Milt Gray, industrial materiel management; Don Sutton, manufacturing; Dave Foran, administration; Patrick Hogan, legal; William Usher, personnel; Bob Cook, facilities; Frank McKenna, business; and Dennis Lape, planning. ■



Peterson

Flora

Peterson, Flora get key posts

Dan A. Peterson has been named senior vice president for Information Systems. Gareth D. Flora, vice president for Business Development at Denver Aerospace since 1984, has been promoted to vice president for Business Development for the corporation, succeeding Peterson.

Peterson, who has been a corporate vice president since April 1985, will have executive responsibility for Martin Marietta's Data Systems and Information & Communications Systems companies. He succeeds Norman R. Augustine, who retained that responsibility after becoming president and chief operating officer last April.

Peterson, 55, was born in Holton, Kan. He received a bachelor's degree in engineering psychology and a master's degree in experimental psychology and physiology, both from the University of New Mexico. He joined Martin Marietta at Orlando Aerospace in 1968 as marketing director.

Flora has led Denver Aerospace's business developments since 1984 and has held executive positions in many of the corporation's major programs, including the Titan IV program and the Titan III launch program at Vandenberg Air Force Base, Calif.

In his new position, Flora will have corporate-wide responsibility for developing domestic and international business, including program development, marketing, business planning and government affairs.

Flora, 47, is a native of Elgin, Ill. He received a mechanical engineering degree and a master's degree in business administration from the University of Denver. He joined Martin Marietta in Denver in 1960. ■

Q and A on COR . . .

(Editor's note: Stanley F. Albrecht, vice president, Production Operations, is the Martin Marietta lead for the contractor operations review (COR), and explains the purpose and importance of COR in the following article.)

Q: When we say COR, what are we talking about?

A: A contractor operations review, or COR, is a thorough systems review at the defense contractor's plant site. It is supervised by the Air Force Contract Management Division (AFCMD) at Kirtland Air Force Base, Albuquerque, N.M. The COR evaluates a contractor's management systems to determine if the contractor complies with contract requirements. The COR team will also inspect hardware and evaluate floor practices. This review exceeds the daily supervision provided by the Air Force Plant Representative Office (AFPRO) located at each plant.

Q: Who participates in a COR?

A: The COR team usually consists of members from AFCMD headquarters with specific expertise in quality assurance, engineering, manufacturing and industrial safety. The team is helped by auditors from other Air Force divisions and field detachments. We can expect anywhere from 40 to 60 auditors.

Q: Are we being singled out by the Air Force?

A: No. Every contractor facility administered by an AFPRO unit has been audited by a COR team, including Denver Aerospace in February 1985. More emphasis on conducting CORs has been a normal operating procedure since 1984.

Q: Is the COR strictly a management concern?

A: No. Management is responsible for assuring that we comply with the terms and conditions of our contracts in producing quality products. A top-grade performance, assuring quality products that are acceptable to the Air Force, requires that each employee know the job's policies and procedures.

"Think of COR as the window our customer sees us through Is our house in order?" Albrecht said.

Q: What is the effect of a poor review?

A: The immediate effect is that some of our policies and procedures will be disapproved and the cost of business will go up. The Air Force can also:

- Issue management deficiency reports to the contractor,
- Issue a letter of concern to the contractor identifying major problem areas,
- Issue a notice to the contractor that it intends to disapprove the contractor's management systems if the problems remain uncorrected,
- Disapprove the contractor's management systems because of non-compliance with the terms of a contract,
- Reduce or suspend progress payments because of non-compliance with contract requirements,
- Refuse to accept the hardware when it has not been produced to government specifications and standards.

Q: Why is the Air Force conducting CORs?

A: A COR is one method the Air Force can use to assure taxpayers that it is getting the best possible product from defense manufacturers.

Q: How are Martin Marietta employees expected to respond to COR questions?

A: Give direct, factual answers to the reviewers—clear, crisp responses and only the facts you know. No guessing! If you don't have the answer, ask your supervisor. ■



Richard E. Weber, vice president, personnel and facilities, presents Air Force Academy Cadet Tina Willers with the award, a bronze eagle and fledglings sculpture, and a certificate.

Company award recognizes outstanding Air Force cadet

Cadet First Class Tina M. Willers has been named the Outstanding Cadet in Air Force Academy space operations for the class of 1986.

The award is sponsored by Denver Aerospace in memory of Lt. Col. Robert C. Rounding. Rounding was a tenured associate professor of mathematics at the Academy during the 1950s and 1960s. He was killed in an air crash

in 1968 while on a sabbatical from the Academy to serve in Vietnam. The award recognizes the spirit of competition and desire for excellence in a cadet from the Academy.

Willers was one of 960 cadets who received a bachelor of science degree and an Air Force commission as a second lieutenant during the Academy's 28th graduation ceremony in May. ■

\$253.8 million contract signed for Peacekeeper IFSS equipment

Negotiations to produce 108 Peacekeeper instrumentation and flight safety system (IFSS) shipsets are complete. This fixed-price incentive contract is valued at \$253.8 million and becomes effective in late August.

The basic contract to produce items for the Peacekeeper flight test program calls for 60

shipsets to be delivered by November 1990. Option 1, to be exercised in July 1987, calls for 24 shipsets to be delivered between December 1990 and November 1991. Option 2, to be exercised in July 1988, calls for 24 shipsets to be delivered between December 1991 and November 1992. ■

School night set for scouting recruitment

The annual School Night for Scouting recruiting program, sponsored by the Denver Area Council of Boy Scouts of America, invites boys and their parents to its program on Thursday, Sept. 18.

Beginning at 7 p.m., every elementary school in the Denver-metropolitan area will conduct a school night program for those interested in learning about scouting. Trained volunteers will be available to answer questions and assist with registration.

Scouting's programs of "fun with a purpose" are, according to John Groman, director of public relations for the Denver Area Council, designed to teach citizenship, develop character and provide fitness through personal and group activities.

"Scouting offers a youth-centered activity that enhances families and imparts values that build stronger individuals and a better community," Groman said. ■

Tank studied as space probe

A contract to study the possibility of outfitting an external tank as a space-based gamma ray imaging telescope has been awarded by NASA's Marshall Space Flight Center, Huntsville, Ala. The telescope would probe the source of gamma rays in the universe.

The study will be performed by Michoud Aerospace. Studies have determined that spent tanks, 154-feet long and 27.6-feet in diameter, could be carried into orbit rather than discarded just before the shuttle achieves orbit.

Once in space, any residual propellants could be expelled from the tank. Astronauts then could assemble telescope components within the aft section, a 96.7-foot long liquid hydrogen tank. The tank would then be pressurized to provide the needed environment for the gamma ray detection system. To reduce costs, components of the gamma ray imaging telescope, or GRIT, could be carried in the shuttle's cargo bay along with other payloads.

Dr. David Koch of the Smithsonian Institution Astrophysical Observatory, Cambridge, Mass., developed the concept of the gamma ray telescope using the external tank, and will provide the scientific requirements for the telescope's components.

The study of gamma rays opens a new window to the astrophysical processes occurring throughout the universe, according to Koch. Processes that can be only examined using gamma rays include nuclear interactions of energetic nuclei, electromagnetic processes, gamma ray line producing processes and matter-antimatter annihilation.

NASA plans to conduct a separate gamma ray survey in the late 1980s using an orbiting gamma ray observatory. The proposed gamma ray imaging telescope would follow up the work of the gamma ray observatory with more accurate pointing studies, according to Richard Barlow, a senior engineer in Michoud's advanced programs shuttle applications group, who is leading the study. ■

MARTIN MARIETTA NEWS

Published by Public Relations

Editor Jan P. Timmons

MARTIN MARIETTA

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Prepared and produced by the publications department

DENVER AEROSPACE

P.O. BOX 179—Denver, CO

August 15, 1986



Harrison

Harrison wins Littleton crown

Michelle M. Harrison, 21, was crowned Miss Littleton 1987 on Saturday, Aug. 2. She will reign as Littleton's queen for the next year at community functions and will represent the area in the Miss Colorado Pageant next June.

Harrison, the daughter of Russell and Laurie Harrison of Conifer, joined Denver Aerospace as a quality documentation clerk specialist in quality engineering 2 and 1/2 years ago. Her father is a systems engineer in special programs at Denver Aerospace.

With the \$2,250 scholarship from the pageant, Harrison will continue pursuing a business administration degree, and then will work toward a master's degree in international business with a minor in French. She is attending Loretto Heights College and Arapahoe Community College simultaneously. She also won diamond earrings and luggage.

Martin Marietta has been well-represented in recent Miss Littleton scholarship pageants, Harrison said. La Tonya Hall, whose parents, William and Sarah Hall are employees, and Cindy Lebel, the daughter of employees Tom and Marianne Lebel, were previous Miss Littleton scholarship winners. This year, Susan Fain won the talent contest; her father, Douglas Fain, also works for Denver Aerospace. ■

Signing classes set

Sign language classes, designed for individuals who want to communicate with hearing-impaired persons, will be offered at the Center for Hearing, Speech and Language.

The center will offer all skill levels. Classes will meet one night a week for 10 weeks, from 7:30-9:30 p.m., at 4280 Hale Parkway in Denver.

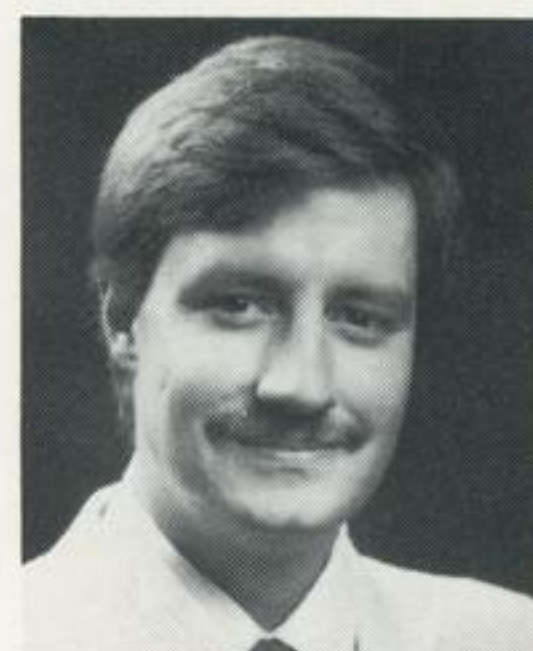
Those interested may send their name, address, and home and work telephone numbers to the center, or call 322-1871. Registration must be completed by Aug. 29. The fee to the non-profit organization is \$35.

Inventions, new technology noted

Denver Aerospace employees were recognized for their creativity in documenting significant ideas that support new business endeavors, contribute to the company's technology base and fulfill contractual obligations.

The Denver Intellectual Property Review Board granted awards to the following inventors:

- Guy R. Anderson/Engineering Mechanics—"Standard Attach Mechanism for Space Station."
- William J. Bailey/Engineering Mechanics—"Orbiter Propellant Scavenging Using Cryogenic Fluid Management Facility (CFMF) Hardware."
- Steven G. Ring/Engineering Mechanics—"Form Factor Calculation by Flooding."
- Dr. Robert T. Anselmi/Engineering Mechanics and Eldon E. Constable/Electronics—"Distillation in Zero Gravity."
- Russell D. Boblitt and Glen J. Lesnick/Electronics—"Electrical Isolation of Metal Fasteners."
- John S. Hoover/Electronics—"Convenient Antenna Reflector Distortion Calculation Algorithm."
- Dr. Benton C. Clark and B. Judith Cook/Electronics—"AZXRF Program for X-Ray Fluorescence Data Analysis."
- Brent A. Cullimore, Curt B. Sorensen and Lothar H. Methner/Engineering Mechanics—"Integral Pump/Flowmeter: Measurement and Control."
- Dr. Benton C. Clark and Ruth J. Amundsen/Electronics—"Ultra Compression of Gamma Ray Spectrometer Data."



Thermophysics employees Brent Cullimore, left, and Steve Ring submitted award-winning computer algorithms for thermal analysis of spacecraft systems.

- Patrick S. Thompson/Electronics—"Bonding/Hermetically Sealing at Room Temperature."

Employees receiving awards granted by the New Technology Evaluation Committee for disclosures submitted under NASA contracts are:

- Brent A. Cullimore/Engineering Mechanics—"FLUINT: Solution Algorithm for Arbitrary Fluid Networks."
- David J. Fleming and Terence A. Makdad/Electronics—"High-Power 4-Quadrant Brushless DC Motor Controller."
- Richard M. Willett and Ronald V. Geiger/Electronics, and Michael J. Carroll/Computer Sciences—"Computer-Based System for Torque Control of Large DC Motors."

For more information on the invention and new technology programs, call the patent office, Ext. 7-6500 or 7-6501. ■

Corporate news

Canadian vertical launching system contract awarded

A contract to produce vertical launching systems (VLS) for four Canadian destroyers marks the first foreign sale of the U.S. Navy system. Martin Marietta was awarded the contract recently for the system, which can launch missiles from surface ships.

Under the contract from Litton Systems Canada Limited, prime contractor to the Canadian government to upgrade and modernize the Tribal-class destroyers, Baltimore Aerospace will build and deliver hardware and provide field service engineering, shipboard integration and integrated logistics support. The contract is expected to be more than \$40 million.

Benso named International Business Development VP

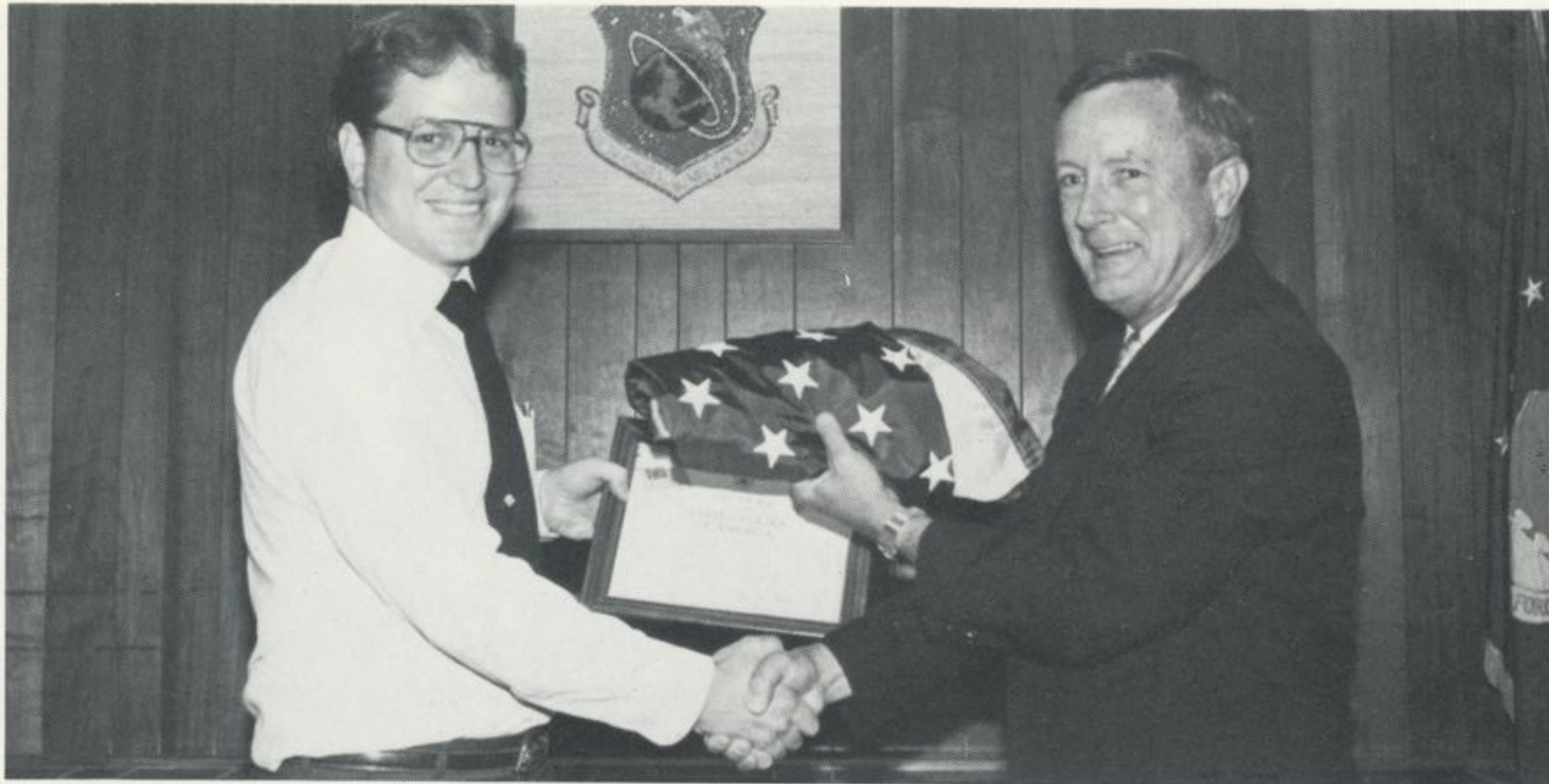
The corporation has appointed William E. Benso as vice president of International Business Development. Benso will be responsible for all international new business, strategic planning activities and for directing Martin Marietta's international field offices.

Before joining the corporation, Benso spent 24 years with Rockwell International, most recently as vice president, Ship Systems-International. He will report to Gareth D. Flora, vice president of Business Development.

Wonderling named public relations director

Martin Marietta Corporation has appointed J. David Wonderling as director of public relations for Information & Communications Systems (I&CS). He will report to Robert J. Polutchko, I&CS president.

Before joining Martin Marietta, Wonderling was manager of public relations for the Stromberg-Carlson Corporation, Orlando, Fla., with responsibility for media relations, customer publications and marketing communications. A native of Columbus, Ohio, Wonderling received a bachelor's degree in journalism from Ohio University in 1969 and a master's degree in personnel management from Central Michigan University in 1977.



Savings bond participant recognized

William Murphy, right, director, Defense Systems, Sunnyvale Operations, presents a certificate and United States flag to Dave Allen for his participation in the savings bond program. The flag was flown over the U.S. Capitol building for one day to honor Allen after his name was selected during a drawing for those who participated in the savings bond payroll deduction program. Allen is a senior engineer for Sunnyvale Operations. Personnel at Sunnyvale had a 92-percent participation rate in the bond payroll deduction program. Flags can be flown for one day over the U.S. Capitol building if approved by a congressional representative.



Richard Morgan, far right, displays his suggestion program commendation and check. Supervisor Larry Bartlett, far left; Ray Schwindt, director of manufacturing; and Stanley F. Albrecht, vice president of Production Operations, participated in the check presentation.

Suggestion program sees tangible results

Richard Morgan, a precision mechanic in Production Operations, recently suggested a way to save time and labor and, at the same time, net the company \$8,844.

Morgan earned a cash award by using the Success Through Suggestions program to initiate a better method to form a vacuum seal on pressurization acceptance tests for the Titan III fuel pogo. The new method saves the high cost of vacuum grease by using a rubber o-ring to create a clean and efficient vacuum seal.

Carol Romero, the suggestion program's ad-

ministrator, said the quality of suggestions is flourishing since the program began a year ago.

Tangible, or cost-savings suggestions such as Richard Morgan's, occur when a return-on investment is realized. "The number is growing," Romero said. "These tangible suggestions reflect employees who not only take their ideas seriously but take them to the point of manufacturing methods and equipment improvements." ■

News briefs

Metropolitan State College offers astronomy course

Metropolitan State College (MSC) will offer an astronomy course, Rockets and Stars—A Space Trek, this fall.

Howard Paynter, professor of mechanical engineering technology, and formerly section chief for thermal dynamics and fluid mechanics at Denver Aerospace, will teach the course. Paynter said 80 percent of the course will be taught by space experts, including Ralph N. Eberhardt and Sidney L. Russak of Denver Aerospace.

For information, call Paynter at MSC, 556-2977. ■

Computer purchases aided by Red Rocks credit union

Apple Computer will offer a purchase program for Martin Marietta employees in late September.

The Red Rocks Federal Credit Union has a special financing package for this program. The credit union will finance 75 percent of the computer purchase price at 12-percent annual percentage rate for a term of 24 months.

Employees interested in receiving details about the computer program should write to: Bob Roth, Apple Computer, Inc., 7100 East Belleview Ave., No. 210, Englewood, CO 80111.

If interested in acquiring a loan for the computer program, employees must be preapproved. Contact the credit union in Room 120 of the Engineering Building, or Room 120 at Littleton Systems Center. For more information, call Ext. 7-6000 or 7-0589. ■

JA Advisors needed

Enthusiastic employees with business savvy are needed as Junior Achievement (JA) advisers.

The organization seeks eight persons with expertise to become executive, finance, production or marketing advisers to high school students. JA companies will meet once a week from 6:30-9 p.m. Oct. 27, 1986, to Feb. 26, 1987. Junior Achievement will provide a full day of training in September to advisers.

Call Lori Sharp, Ext. 7-6605 or 7-6750, by Friday, Aug. 22, to help teenagers learn about private enterprise. ■

Home loans offered

The Red Rocks Federal Credit Union has added first mortgages to its growing list of services. For more information, call Ext. 7-6000 or 7-0589.

Since Aug. 7, the credit union is open at four sites one hour earlier. The new hours are: Academy Systems Center: 8-8:45 a.m.; Denver Systems Center (lobby): 9-10:30 a.m.; Greenwood Commons (Bldg. 6050): 8-9:30 a.m.; Inverness (personnel) by request only: 9:45-10 a.m. ■

Controlled burn helps sheep area

A controlled 1,000-acre burn was set Aug. 7 to improve the habitat for a herd of Rocky Mountain bighorn sheep in Waterton Canyon.

The burn, a cooperative effort between state and federal agencies and Martin Marietta, was set on property adjoining the Waterton facility.

The land includes 400 acres owned by Martin Marietta, 500 acres owned by the Denver Water Board and 100 acres of national forest land.

The fire was set by a helicopter using a helitorch, a drip torch technique developed by the Forest Service that enables faster and more controlled burning of an area. The joint effort was undertaken by the U.S. Forest Service, the Denver Water Department, the Colorado State Forest Service, the Colorado Division of Wildlife, the Foundation for North American Wild Sheep and Martin Marietta. Martin Marietta firefighters and other personnel assisted during the burn. ■

U.S. forest service officials monitor the start of the controlled burn by helicopter, which was set to improve the habitat for the resident herd of bighorn sheep.



Employee services/recreation

Belle Bonfils Blood Bank—A mobile unit will be at LSC Thursday, Aug. 28, in Room 107. Employees at the Ground Electronics Production System (GEPS) facilities can schedule an appointment by calling Lucy Winka, Ext. 7-2818. Employees at SouthPark I and II should call Linda Shupe, Ext. 1-6009. Employees at LSC can contact the employee services office, Ext. 7-6750 or 7-6605, to make an appointment.

Bowling—The mixed bowling league will start its second year at 6 p.m. Monday, Aug. 25, at Superbowl, Kipling Street and Coal Mine Road. A meeting for all bowlers will be at 6 p.m. Aug. 18 at Superbowl's conference room. Five persons will make up the teams—three men and two women or two men and three women. Turn in a signup sheet (available from the recreation racks) to the recreation office, Engineering Building, Room 124G, or send it to Mail Stop No. 1344 by noon, Aug. 18. Contact Ray Furman, Ext. 7-5567, or 781-0652, after 5 p.m. for more information.

Toastmasters—The club meets at noon every Thursday in Room 103, at Littleton Systems Center (LSC).

Weight Watchers—The group meets 1 hour a week. The 8-week series is \$56, prepaid. The next series begins 4:30-5:30 p.m. Tuesday, Sept. 9, in executive dining room No.2 of the Engineering Building. Obtain a registration form from the recreation racks and register by Tuesday, Aug. 19.

Bowling—The men's bowling league will meet at 7:30 p.m. Wednesday, Aug. 20, in the conference room at Green Mountain Bowling Center, Kipling Street and Mississippi Avenue, for a league organizational meeting and free bowling. The league consists of 10 five-man teams, handicap bowling and ABC sanction. The season runs from Aug. 27 through May 7, 1987. The league plays at 8:30 p.m. Wednesdays. Call Dave Patterson, Ext. 7-7666, for more information.

Commodore Users Group—The club will meet at 5 p.m. Tuesday, Aug. 19, in the recreation area clubhouse. This group meets the third Tuesday of every month. For information, contact Chuck Barton, Ext. 7-7433 or Joe Presta, 7-4220.

Skyline Hunting and Fishing Club (SH&FC)—Hunter education classes for August and September will cover principles of wildlife management and black powder and muzzle loading. Dates: Aug. 19, 20, 21, 22 and 25, at Wadsworth Building, Denver Systems Center I (DSC), and Aug. 23 at SH&FC Range; Sept. 16, 17, 18, 19 and 22 at Wadsworth Building, DSC I, and Sept. 20 at SH&FC Range. The cost is \$7. Instructor Dick Benson is available at Ext. 7-5241, or call Ext. 7-6605 or 7-6750. Preregistration is not necessary, but 10 students are needed at the first class to continue the course. The course is also required now for all trappers.