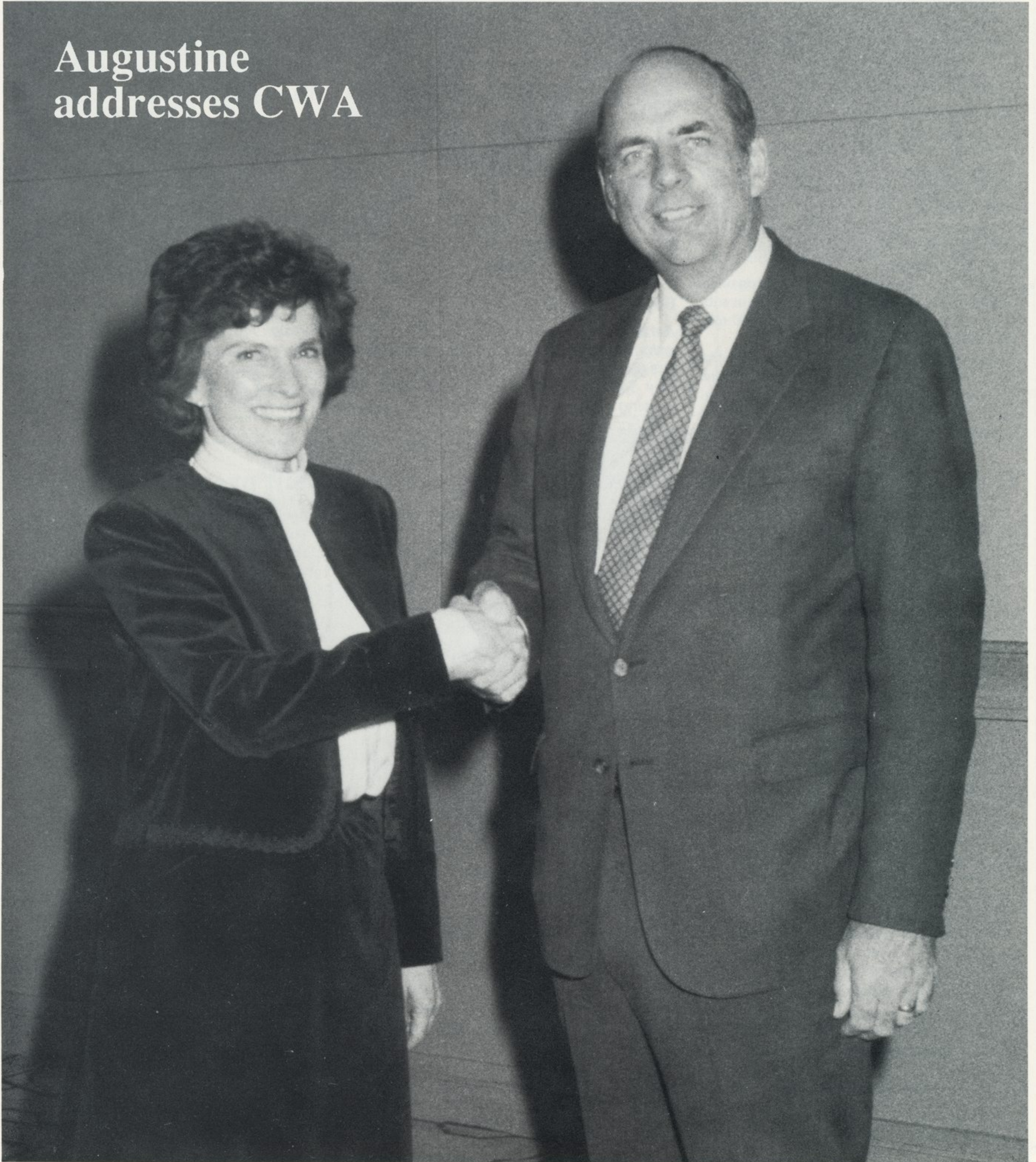


March 23, 1990 Number 6

Augustine
addresses CWA



Astronautics Group honored for small business efforts

The U.S. Small Business Administration in Washington, D.C., has selected the Astronautics Group as the Small Business Administration's 1990 Distinguished Prime Contractor of the Year for Region VIII.

In a letter to James A. Sterhardt, vice president of Production Operations, Robert J. Moffitt, associate administrator of procurement assistance for the Administration, said, "This award provides recognition of the exemplary efforts of large federal prime contractors on behalf of small business subcontractors."

At a May 10 awards ceremony in Washington, D.C., a national award winner will be selected from the top firms in each of the Administration's ten regions.

Herbert L. Watkins, manager of Materiel Support Operations, said, "Small and minority businesses play a major role in the overall Colorado economy, and various departments throughout the Astronautics Group are actively pursuing business opportunities with small and minority businesses."

Last year, Watkins said, the Astronautics Group awarded more than \$95 million in subcontracts to Colorado firms. Of that, \$40 million went to small businesses.

Jack Kimpton, director of Materiel Operations, said, "This coveted award represents the culmination of efforts by many people throughout the Astronautics Group to improve business opportunities."



Boy Scouts raise money

Astronaut Bruce McCandless II, right, signs autographs for some of the more than 700 community leaders who recently attended a Boy Scouts breakfast chaired by Astronautics Group President Peter B. Teets. The annual event raised more than \$100,000 for the Boy Scouts. McCandless was on hand and addressed the audience and presented a viewing of "A Nice Flying Machine." Martin Marietta co-sponsored the event along with the Boy Scouts.

Cultural Diversity training continues to help management prepare for future

(Editor's note: The following piece was written by John F. Hallen, director of Organizational Effectiveness for the Astronautics Group.)

Since September 1989, the Astronautics Group has trained 528 executives and managers in Cultural Diversity. The Cultural Diversity training is one and one half days long and focuses on creating an awareness of how our socialization, whatever our peer group (white males, African-American, women, or Hispanic), may have resulted in unconscious biases toward people who are different. The training facilitates an introspective journey to explore whether the greater comfort level that we may enjoy with people like ourselves unintentionally impedes communication, trust, teamwork, and acceptance of others who may be of different gender or ethnic origin. Since the training has been conducted for senior managers first, the great majority of participants have been white males.

The training has identified a core question for the participants, namely, what is the purpose of Cultural Diversity training? There are two viewpoints that influence a Cultural Diversity effort.

The first viewpoint is that of assimilation. The assimilation view holds that American institutions are obligated to hire women and minorities based on human rights, but that women and minorities are obligated to learn and adjust to the current organizational norms that have evolved over many years under white

male institutional leadership. If an organization dominantly values rationality versus intuition, thinking versus feeling, and competitiveness versus cooperation, then it is expected that women and minorities will learn and follow the same unwritten rules. Many women and minorities would argue that the assimilation viewpoint is the dominant view and model of American institutions today.

The second view is a cultural integration viewpoint. The cultural integration approach assumes that the involvement and representation of women and minorities in organizations will change and enrich organizational norms and culture. This view is based on the belief that women and minorities will improve and enrich our organizational processes. Thus, organizations will discover and value intuition as well as rationality, feeling and its expression as well as thinking, and greater degrees of cooperation and teamwork. Women, African-Americans, and Hispanics tend to be socialized more toward the above values than white males. As they enjoy more representation at higher organizational levels, their behavior will impact and modify current cultural norms and values. The underlying belief is that if the appropriate attitudes and norms are modified, an organization will achieve a higher level of performance and mission success.

If people believe in the cultural integration view, they will value Cultural Diversity differently than those who accept only the assimilation view. Cultural integrationists will perceive

an ongoing enrichment of their own lives. They are more likely to be intrinsically motivated by their beliefs and in turn support and welcome a process resulting in greater workforce diversity. The assimilationist does not share the belief that a more diverse workforce will contribute to organizational effectiveness. He or she understands that society may require it but does not believe that a more diverse workforce will be personally or professionally enriching. These viewpoints are underlying themes of discussions during the Cultural Diversity Training Workshops. The assimilation view supports Equal Employment Opportunity goals. The cultural integration view goes beyond the support of EEO goals to supporting a cultural change process that is valued as beneficial to all employees.

The Astronautics Group is committed to an integrative view. This implies many subtle changes to our current culture. White males, particularly, must be sensitized to valuing differences. The change will take place over a long period through day-to-day interaction in the workplace. As more women and minorities participate in the training, they will also be confronted with their own cultural biases. Cultural integration requires a blending of all groups, and where minorities and women hold unconscious biases, these biases must also be discarded in the enrichment process. Whatever the rhetoric of the organization may be, the ultimate questions can only be answered in the minds and hearts of each of us.

Albrecht talks about the importance of investing in U.S. bonds

(Editor's note: The Martin Marietta News last week spent some time with Stanley F. Albrecht, vice president of Human Resources and U.S. Savings Bonds campaign chairman for the Astronautics Group, discussing the upcoming campaign. In the following text, Albrecht candidly speaks about savings bonds and how they work to benefit both employees and the Astronautics Group.)

News: Each year the Astronautics Group places heavy emphasis on the U.S. Savings Bonds campaign and the Mile High United Way campaign. In the specific case of savings bonds, what kinds of feedback do we use to back up our support?

Albrecht: It's no secret that we place high value in savings bonds and the Mile High United Way. I feel the savings bonds program is important because our involvement serves our customers, country, and ourselves. Moreover, we simply are providing our employees an opportunity to make a wise investment. Because we care for our employees, and their well-being, it's very easy to feel comfortable about this safe investment. In terms of feedback, the corporation is recognized annually by the country for our successful efforts.

News: If we are so successful, can you give us an idea of how big this campaign is?

Albrecht: Martin Marietta is in the top ten, of corporations of more than 5,000 employees throughout the country, in terms of employee participation. We also have the highest employee participation percentage of any major Colorado company. Last year, 83 percent of Martin Marietta employees participated,

including 89 percent from the Astronautics Group.

News: Given the size of our campaign, would there be any truth to the rumor that we support the savings bonds program because our primary customer across the board is the U.S. Government?

Albrecht: That's a tricky question. No doubt we are here to serve our customer. But in the minds of senior management, this is a great situation because the employee is the ultimate beneficiary of the program. The fact that this also aids our country is just an added bonus. I think it's a great situation for everyone involved—a win-win situation.

News: In that past, some of the primary benefits of savings bonds have been state and local tax exemptions and a good return on investment. Is there anything new this year?

Albrecht: In addition to the usual benefits that have been communicated a number of times, this year interest earned on bonds purchased after Jan. 1 is tax exempt if it is used for college tuition. This provides employees with an added incentive to invest in bonds and continue their education.

News: What about bonds for children and grandchildren. Can an employee purchase bonds for grandchildren in the name of their children?

Albrecht: Bonds can be purchased in the parents name. They then may cash them for the children's (grandchildren's) education. I have three grandchildren, and I am assisting in their future college education with my savings bond deductions set aside in their parents' names.

News: What is the current annual interest rate for bonds?

Albrecht: 6.98 percent.

News: Every year the main thrust of the savings bonds campaign seems to revolve around the ease of purchasing bonds and the return on investment. Please explain these claims.

Albrecht: Thousands of companies, including the Astronautics Group, offer a payroll deduction plan. It's simple, painless, and a great way to save. The interest earned on a bond is payable when the bond is cashed. The redemption value reflects the amount paid to purchase the bond plus interest accrued.

News: Once employees begin purchasing bonds, how do they keep their records current if their address or beneficiary changes?

Albrecht: Most department secretaries have official authorization change cards. Also for more details, employees can call Ext. 1-5200 or communicate through interoffice mail to Mail Stop DC 2517.

News: How long will the campaign last, and what are your goals for this year?

Albrecht: The Astronautics Group's campaign, with the help of Jim Schaefer, Sandi Thomas, and several volunteers, begins April 2 and continues through the end of April. We have a goal to obtain 92 percent employee participation, and I see no reason why we can't reach that goal. Investing in savings bonds is a patriotic and safe decision that every employee should take advantage of for their own safe investment portfolios and for the good of our nation. ■



Wirth visits factory

Sen. Timothy E. Wirth, D-Colo., left, meets with Joseph P. Marcus, director of Manufacturing Operations for Space Launch Systems, center, and C.T. "Buck" Reynolds, manager of Detail Manufacturing, during a visit last month at the Main Plant. Wirth toured the Titan manufacturing facility, met with employees, and received program reviews.

Stress management class added

Due to the demand for the Stress Management class offered in January and February through the Martin Marietta Institute, a second class is being offered from 5 to 7 p.m. starting Wednesday, April 4, at the Deer Creek Facility. The class will be offered for four consecutive weeks, and openings are still available. Employees interested in attending this class should call Diane Nolly at the Wellness Center at Ext. 7-7576. ■

Your Employee Store continues to expand services

Watch for grand opening celebrations this spring for Your Employee Store at Deer Creek, Space Support Building, and Southpark West. Also, plant sales will soon begin at the Electronic Manufacturing Facility on Mondays and Greenwood Commons on Thursdays. Coming in April to Your Employee Stores are Easter hams and chocolates. NCAA Final Four sweat-shirts, t-shirts, and hats are available now at prices lower than at other outlets.

Store hours are from 7:30 a.m. to 4 p.m. at the Engineering Building, 11 a.m. to 2 p.m. at Deer Creek, and 7 a.m. to 3:15 p.m. at Littleton Systems Center. ■



Teets talks shop

Astronautics Group President Peter B. Teets last month spoke to a crowd of more than 200 at the 10th annual Colorado Engineers' Dinner in celebration of National Engineers' Week. Also, Teets recently was presented the Hope award at the third annual Dinner of Champions, sponsored by the Colorado Chapter of the National Multiple Sclerosis Society. Teets earned the award for his philanthropic and community service to Colorado.

Corporate news

Scientists develop environmentally safe circuit board cleaner

Scientists at Martin Marietta Laboratories have developed a safe, effective, environmentally acceptable cleaner for printed electronic circuit assemblies to replace chlorofluorocarbon (CFC) cleaners currently used in the industry.

CFC solvents, which are known to deplete the atmosphere's protective ozone layer, are among those substances targeted in the Montreal Protocol and a Helsinki agreement, signed by more than 80 nations, to phase out production of CFCs over the next ten years.

MarClean™, the new solvent, will not harm the Earth's ozone layer, according to the developers, who reported on the new cleaner at the recent National Electronic Packaging and Production Conference in Anaheim, Calif.

The semi-aqueous cleaner, equally effective for surface-mounted and through-hole assemblies as well as other components, would replace CFC-113, now widely used in electronics manufacturing facilities worldwide.

American circuit board manufacturers use about 50 million pounds of CFC-113 a year.

The new cleaner has been demonstrated in tests monitored by the ad hoc solvents working group, which includes the Environmental Protection Agency, the Department of Defense, the Institute for Interconnecting and Packaging Electronic Circuits, and industry representatives.

MarClean is undergoing trial use at the electronic components facility at Ocala, Fla. ■

Work started to select next group of Tech Ops interns

The selection process for the next group of Technical Operations interns is underway.

Nominations from each company and the central groups will take place next month, and interviews and selections will follow in May.

The Technical Operations intern program is open to employees with labor grades of 45 or 47, from the areas of Technical Operations, Product Assurance, and Production Operations, who have at least three years of Martin Marietta experience.

Each year, two local interns are chosen for separate six-month Astronautics Group internships in Denver, and the top local candidate also becomes eligible for the corporate internship in Bethesda. The program starts each fall.

These internships are designed to challenge the interns with assignments leading to a more complete understanding of the entire Corporation.

Cynthia E. Barth is the corporate intern this year. She has participated in technical reviews, review boards, Independent Research and Development and strategic technology planning, corporate audits, and corporate-level steering committees.

"As the corporate Technical Operations intern, I've had the opportunity to interface with virtually every operating unit within Martin Marietta," Barth said. "My exposure to the diverse technologies and corporate-level business practices has resulted in a significant expansion of my knowledge base. I am very pleased to have this opportunity to represent the Astronautics Group at Corporate."

Ken Parker and Karyn Downs are this year's Astronautics Group interns.

Last fall, Parker led intern candidates in a High-Performance Work Team effort that examined the status of Management Information Systems (MIS) throughout the Astronautics Group. That team learned Quality Functional Deployment, a Total Quality Management tool, and uses it to derive requirements for MIS and to suggest possible organization structures to implement the requirements.

Parker said his internship experience "was a fantastic experience that will serve me and the company the rest of my career."

Downs began her six-month internship in January and has focused on several NASA

projects, including technical interchanges with NASA center directors, the upcoming Human Exploration Initiative, and technology transfer between entrepreneurs and contractors.

"I've taken a global look at NASA and now have a much broader understanding of the dual role Martin Marietta will have with NASA," Downs said. "This is in terms of being a customer of NASA research center developments and as a potential hardware and service supplier to the space flight centers and headquarters.

"It's been a superior learning experience," she said.

Employees interested in learning more about this program should plan to attend a question and answer session at 4 p.m. April 4 in the Deer Creek Facility's Independence Room, or at 4 p.m. April 5 in the Engineering Building's Conference Room 207.

Past and present Technical Operations interns will be available to discuss the program structure, purpose, and candidate criteria.

Additional questions can be directed to Downs at Ext. 1-4519, or the program coordinator, Cris Cook, at Ext. 7-3737. ■

Review teams to resolve Commercial Titan anomaly

An Astronautics Group review team under the direction of Warren G. Beery, vice president for Technical Operations for Space Launch Systems, has been appointed to determine why the second stage of a Commercial Titan vehicle did not separate from its payload last week.

The Astronautics Group team already has determined that an engineering design error caused the wiring problem . . .

The team, which includes selected outside representatives, also will recommend changes in processes and procedures to preclude any such occurrence in the future.

In addition to the in-house review team, an independent review team headed by Walter O. Lowrie also is examining the problem and will recommend solutions. Lowrie was president of Martin Marietta Orlando Aerospace (now the Electronics and Missiles Group). He retired in 1985.

Participating in the independent review team are the Air Force, the Aerospace Corporation, INTELSAT, the U.S. Department of

Transportation's Office of Commercial Space Transportation, and the National Aeronautics and Space Administration.

The Astronautics Group team already has determined that an engineering design error caused the wiring problem that kept the 5-ton INTELSAT VI from separating from the second stage. The normal prelaunch checkout processes and procedures did not detect the wiring problem.

Commercial Titan uses a common wiring harness for both single and dual payload missions. The signal to activate the payload separation system can be sent to either the forward or aft position on the harness, or to both in the case of a dual-payload mission.

For the INTELSAT VI launch, software engineers, who set the mission specification requirements, selected the forward position on the harness, while the hardware engineers decided the aft position was the better position. The hardware engineers did not follow the formal change procedures for communicating the change to the software engineers, and the Titan's onboard computer sent a signal to deploy the satellite to the wrong position.

Astronautics Group personnel began working on the problem immediately after it surfaced following the launch from Cape Canaveral on Wednesday, March 14. ■



Stressed out

Stress, design, and payload integration engineers from the Titan IV and Titan II programs competed last week to see who could build the lightest balsa wood structure that would support the heaviest weight. Tim Boland of the Titan IV stress group (placing weights on structure) built a structure that supported 357 pounds—the heaviest weight; Mark Fugler (left) watches. But Boland's four-tenths-ounce (13.8-gram) structure didn't win the competition. That honor went to Keith Pobanz of the Titan IV design group, whose one-tenth-ounce (2.5-gram) structure supported 37.5 pounds. Eleven engineers joined the just-for-fun competition, which was conducted during lunch March 15 at Southpark West III.

Space Systems names FTS subcontractors

Space Systems has selected seven companies to design and build components for the Flight Telerobotic Servicer, a space robot that will help assemble Space Station Freedom.

The six-foot-high dual-armed servicer will be operated by astronauts from remote work stations in the Space Shuttle or on the Space Station for routine assembly and maintenance work in space.

Space Systems has a nine-year \$337 million contract from NASA's Goddard Space Flight Center to design and build the robot and provide components for two flight tests aboard the Shuttle in 1991 and 1993. The FTS is expected to be launched in the mid-1990s aboard one of the first Shuttle flights to ferry equipment to the Space Station.

Companies selected to design and build components of the robot are:

- Ford Aerospace of Palo Alto, Calif., to design, develop, fabricate, and test tools and end effectors, the robot's "hands," that will grasp various tools used in assembly and maintenance tasks.
- IBM Systems Integration Division, Houston, to provide computer data processors for the servicer's operating systems and workstations.
- JR3 Inc., Woodland, Calif., to design and build the robot's force torque transducer, a sensor at the end of the robot's arms that will sense the force and torque the robot exerts as it conducts an operation.
- Loral Fairchild Systems, Syosset, N.Y., for the wrist and head cameras that will serve as the robot's "eyes," allowing astronauts to see what the robot is doing during any given task.
- Schaeffer Magnetics, Chatsworth, Calif., to design and build the manipulator joint actuators for the FTS arms.
- Teledyne-Brown Engineering, Huntsville, Ala., for a multipurpose support structure, or framework, on which the upper body of the FTS will be attached during the first Shuttle flight demonstration test.
- Western Space & Marine, Santa Barbara, Calif., for hydraulic manipulator arms for the FTS trainer, a prototype of the actual FTS that will be used to train astronauts to remotely operate the robot.

Subcontractors will deliver the FTS components to Space Systems for integration and assembly at the 54,000-square-foot Integrated Robotics Facility. Currently, Space Systems is completing preliminary design of the servicer. A training model is expected to be delivered early in 1991.

Natural history museum sponsors night for employees

The Denver Museum of Natural History is sponsoring a free Corporate Members' Night from 6 to 9 p.m. April 23 at the museum, 2001 Colorado Blvd.

All Astronautics Group employees and their families are invited to attend the event. The entire museum will be open, and a wide variety of activities is planned.

Also, the IMAX Theater and Gates Planetarium will be showing their current shows. Tickets for those performances will be handed

out on a first come, first served basis beginning at 6 p.m., with a limit of one per person.

To take advantage of this opportunity, the Astronautics Group must submit an attendance count to the museum by April 13. Therefore, employees should write their name and how many people from their family will be attending and send that information, through interoffice mail only, to Mail Stop DC1020, Attn. HISTORY.

On the cover

Norman R. Augustine, chairman and chief executive officer, congratulates Dr. Sadie Decker, manager in Space Launch Systems, on her recent acceptance as a prestigious Sloan Fellow. She will begin studies at MIT in June, working toward a masters degree in management.

Augustine was in Denver to talk to more than 300 people who gathered at this month's Career Women's Association meeting. Augustine, who was instrumental in forming the CWA five years ago and was the group's first speaker, provided five ways to get ahead in today's business world. They are: secure a good education, be opportunistic, obtain a variety of experience, do your current job well, and strive to get a good boss.

Employee services/recreation

Company Family Event at the Ice Capades—Ice Capades performances, exclusively for Martin Marietta, will be at 7:30 p.m. on April 10, 11, and 12 at McNichols Arena. Admission to the show designated on the ticket is by ticket only. Employees who reserved tickets should receive them by April 4 from their department administrators. The Employee Services/Recreation office will distribute tickets only through department representatives.

Colorado Corporate Games—Martin Marietta employees are urged to try out for the company's 10th Annual Corporate Games team. The competition, June 8 and 9, involves more than 30 corporations and is a fundraising event for the Colorado Special Olympics. Men and women are needed for track, tennis, racquetball, swimming, bicycle, golf, trap shooting, 5k run, and 5k racewalk competitions. Bowling participants were selected from the masters qualifying tournament in January. Volleyball team members will be selected from the current co-ed competitive league. "Open Events," a new category this year, include indoor soccer, two-man volleyball, pistol shoot, and horseshoes. "Open events" are open to the general public, have separate entry fees paid by the participants, and do not earn team points. Employees interested in participating as athletes or volunteers can obtain Corporate Games flyers from the recreation racks beginning March 30. Completed forms should be returned to the Employee Services/Recreation office before April 16.

Martin Marietta Ladies Golf League—Ladies interested in playing golf on Wednesdays at 4:30 p.m. may contact Phyllis Bullock at Ext. 1-4242.

Photography Club—All photography enthusiasts are invited to attend the Platte Canyon Photo Club meeting at 7 p.m., Monday, March 26 at the Public Service building, 10001 W. Hampden Ave. Robert Heapes, photographer and historian, will present the two-screen, four-projector show, "In the

Footsteps of Lewis and Clark—Pathway along the Bedrock of Botanical Western America." This program is the story of Lewis and Clark's adventure and scientific achievements. For details, call Bill Privratsky, Ext. 7-4969.

Parapsychology Club—The club will meet from 5 to 7 p.m., Thursday, April 19 at Southpark West I, MIC Room. "The Concept of the 5th Dimension" will be the topic of special guest, Dr. Deen Khandelwal, senior member, professional staff, Martin Marietta Orlando. All employees and guests, age 16 and older, are welcome. To reserve a guest badge or for more information, call Helen Davis at Ext. 1-6887.

Mile High L5—The group will meet at 7 p.m., Monday, April 2 in the first floor meeting room of the Public Service building at Kipling and Hampden. For details, contact Mark Schloesslin, Ext. 1-9057 or 779-5692.

Saddle Club—Ridge Riders club members will meet at 7 p.m., Tuesday, April 3 in the recreation area clubhouse. For details, contact Mary Smith at Ext. 1-8154 or Irene Woodzell at 688-9676.

Waterton Amateur Radio Society—All hams and those interested in learning more about amateur radio are invited to attend a meeting at 5 p.m., Tuesday, April 3 in the hamshack at the recreation area. For more information, call Tony Kehayas at Ext. 7-2013.

Motorcycle Club—The Aerorider Motorcycle Club will meet at 5 p.m., Thursday, April 5 in the recreation clubhouse. Contact Steve Taylor, Ext. 7-7731 or Paul Betthausen, Ext. 1-5574 for information.

Hunter Education Classes—Class dates are set for 7 to 9:30 p.m., April 16, 18, and 19 at the VFW Hall, 3860 S. Jason St., in Englewood. The range date is from 8 a.m. to 1 p.m. April 21 at the club's shooting range. Students must attend all class sessions. Registration will be taken at the first class, and a minimum of 10 students is required to continue meetings. The cost is \$7. Employees, family members, and friends are welcome to attend.

Funplex Discount—Coupons offering one free activity (bowling, roller skating, miniature golf, or bankshot) with the purchase of the same activity at full price are available from the Employee Services/Recreation offices at Deer Creek and Waterton, the company stores (Deer Creek, Waterton, and Littleton Systems Center), and volunteer representatives at the Space Support Building, South Lincoln, Viewpoint I, and Greenwood Commons. Individuals are limited to one coupon per person per day.

Fitness Classes—Flyers describing fitness classes available to employees at the Deer Creek Wellness Center and at HEALTH-BEAT Athletic and Rehabilitation Club are in the recreation racks. Employees can join the classes at any time by completing a medical history form and purchasing a class card. A \$30 card is valid for 20 classes, and a \$15 card is good for 10 classes. The cards are valid through June 29 and can be purchased at the locations noted on the flyers. Direct questions to Ext. 7-6605 or Ext. 7-7576.

Weight Watchers at Work—Payment is due today for Weight Watcher classes beginning Thursday, March 29 at LSC, Waterton and Deer Creek. The fee for the ten-week series is \$85 for those who pay with one check and \$90 for those using the two-check payment plan. A minimum of 20 people is required for each class to begin. Registration forms with class times and room locations are in the recreation racks. Direct questions to the Employee Services/Recreation office at Ext. 7-6750.

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