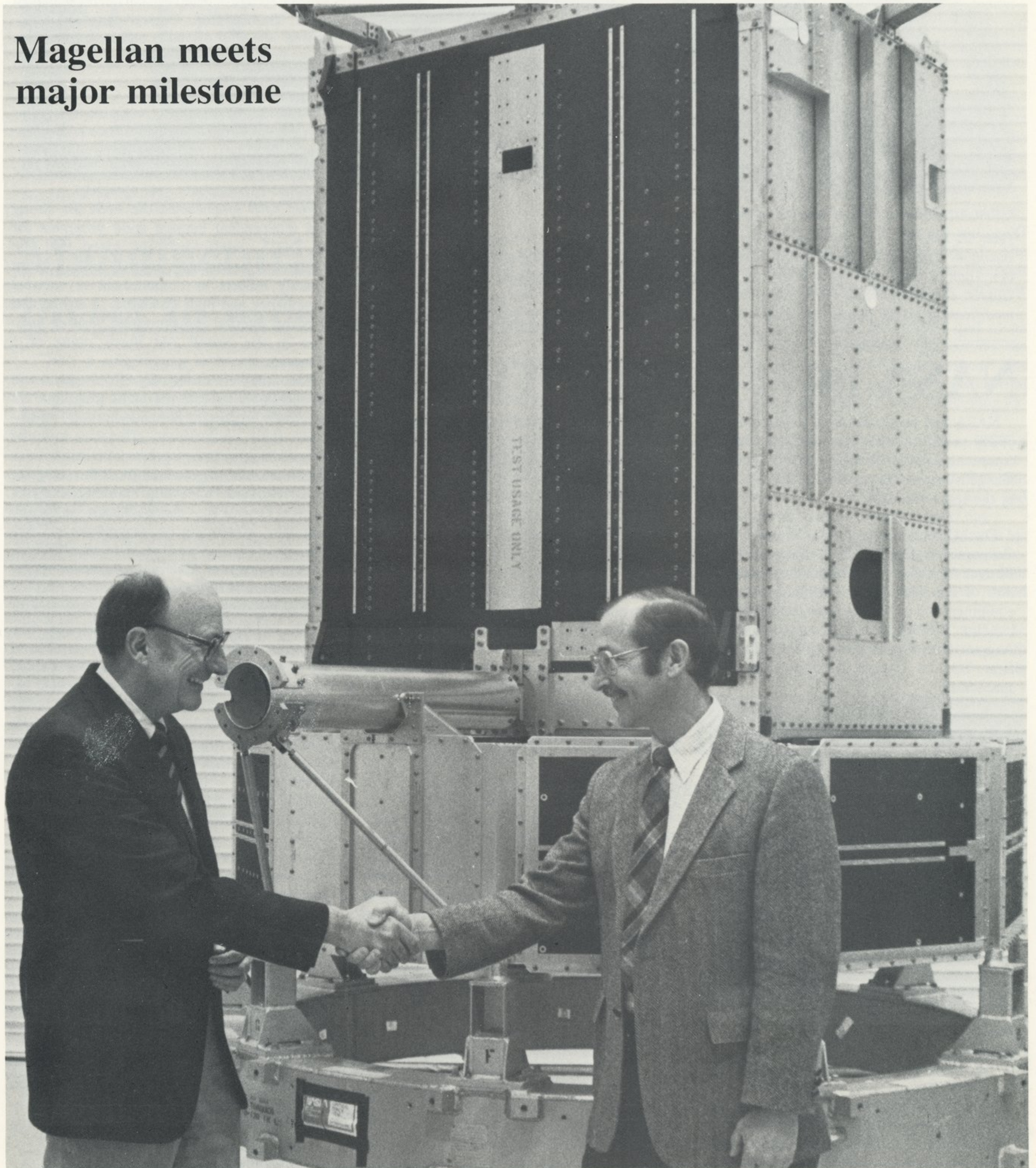
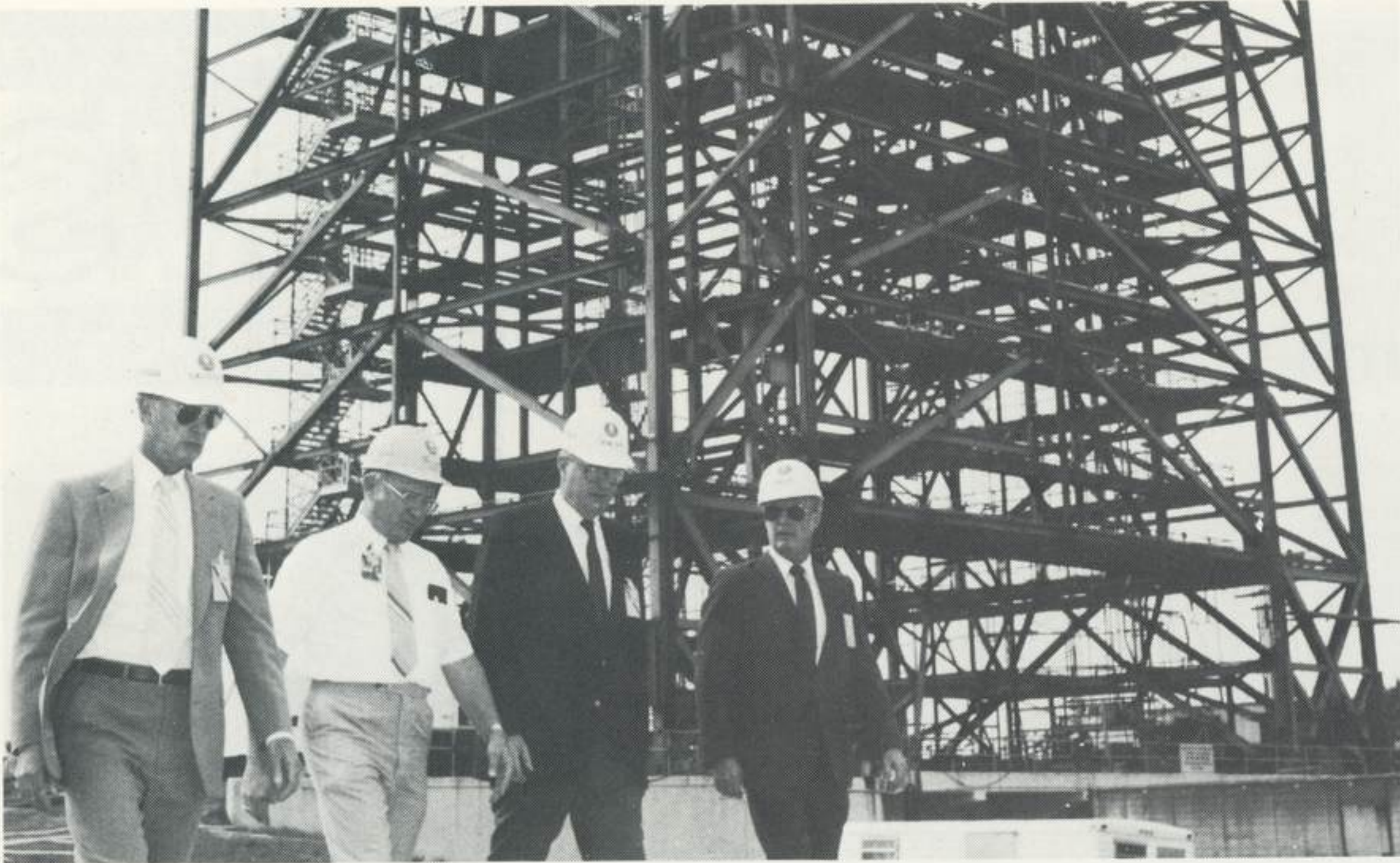


January 30, 1987 Number 2

**Magellan meets
major milestone**





Close-up look at Titan launch complex

Peter B. Teets, Denver Aerospace president, second from the right, followed his "State of the Business" address in Florida with a review of modifications to Titan Launch Complex 41 for the new Titan IV. Teets and, left to right, Joseph Spencer, Business Development vice president; John Harris, Canaveral Titan IV director; and W. F. Fields, Canaveral Operations director, check modifications to the launch structure and mobile service structure.

NASA buys second TOS

NASA has purchased a transfer orbit stage (TOS) vehicle intended to boost the advanced communications technology satellite (ACTS) into geosynchronous transfer orbit after launch by the space shuttle.

The TOS was developed by Orbital Sciences Corporation (OSC), which contracted with Denver Aerospace for fabrication and integration of the TOS flight vehicle and support equipment. Assembly and integrated testing of the first TOS flight vehicle was completed in August. NASA contracted with OSC for the first TOS to launch the Mars Observer spacecraft.

ACTS is an experimental communications satellite that will demonstrate critical technologies for the next generation of commercial and government communications satellites.

Robert R. Lovell, director of the Communications Division at NASA headquarters, said, "As a precursor of tomorrow's communications satellites, ACTS is a national test bed for several experimental satellite technologies and is a key mission assignment for the TOS." An opportunity for TOS to be on the space shuttle schedule in late 1990 is under consideration.

NASA's Marshall Space Flight Center in Huntsville, Ala., will manage both TOS production contracts. ■

Roane appointed director of new Systems Effectiveness program

Arnold F. Roane has been appointed director of the new Systems Effectiveness program for Denver Aerospace. Roane will report to Peter B. Teets, Denver Aerospace president, and will be responsible for implementing and managing systems and programs that contribute to company operations and long-range objectives.



Roane

Systems Effectiveness will encompass performance improvement, which will include Commitment to Excellence (CTE) program management, awareness training development,

and assessment and ethics code adherence; internal audits, which will include audit program development and implementation, staff management, and assessment and improvement recommendations; policies and procedures, which will include media management, maintenance and future development; and future requirements, for which Roane was most recently responsible as director.

Roane has held a variety of management assignments during his 27 years in industry, including assignments in aerospace, industrial and commercial businesses. He joined Denver Aerospace in 1980 as director of future systems, served as director of capital and strategic planning at corporate headquarters in Bethesda, Md., and returned to Denver in January 1985. ■

Audit reflects commitment

More than 50 auditors and key departmental and product area representatives attended a recent workshop to learn new developments and projects within the internal audit program.

The one-day workshop was conducted by the Denver Aerospace audit department, managed by H. Thomas Hall. Objectives included improved selection of audits and audit performance, better communication and more effective corrective actions.

The workshop featured Col. John B. McCABE, commander, Detachment 10, Air Force Plant Representative's Office (AFPRO); David T. Clous, corporate audit vice president; and Steven E. Story, Denver Aerospace Business Management vice president.

McCABE emphasized the need for strong and independent internal audit programs for all DOD contractors. He stated that the strength of a company's internal audit program directly reflects its commitment to contract compliance and high standards. A strong and effective internal audit program is a key measure in the overall Air Force rating of a company.

The comprehensiveness, effectiveness and independence of internal audit programs are extremely important if contractors are to improve their productivity, efficiency and the overall health. Defect prevention in all areas (hardware and paperwork) must be the goal, McCABE said. A healthy internal audit program at Denver Aerospace will play an important role in reducing the magnitude and frequency of routine and special surveillances, such as the recent Air Force contractor operations review (COR).

The corporation is committed to strengthening the internal audit function, Clous said. The corporate audit office was recently elevated to the vice presidential level, headed by Clous. The action recognizes the government's expanding interest in audit functions at all levels within the corporation by placing audit in a position reporting directly to Thomas G. Pownall, chairman and chief executive officer, Clous said.

The corporation commissioned Price-Waterhouse, a nationally known, Big 8 accounting firm, to review the entire corporation's audit functions. Issuing a new corporate policy establishing and implementing an audit program resulted from the review.

Also as a result of the firm's review, Martin Marietta joined a group of aerospace companies that have agreed to disclose their business practices to the government voluntarily. This is a direct attempt to combat fraud, waste and abuse in government contracts, and to promote corporate and individual ethical conduct in business operations, Clous said.

This initiative established the foundation for the Corporate Ethics office and the Corporate Code of Ethics. At the same time, the corporation retained another large firm, Arthur Young

Continued on page 3



Young Cosmonauts visit NASA exhibits

A delegation of young Soviet Cosmonauts and their chaperones toured NASA's George C. Marshall Space Flight Center recently. A Martin Marietta-built manned maneuvering unit (MMU) was one of the highlights of their visit, along with a full-size external tank and 1/4-scale space shuttle. Also included in the tour was a visit to Martin Marietta's Core Module Integration Simulator (CMIS) for the space station. The Soviet youths were participating in an exchange program with the U.S. Young Astronauts program.

Detector tests pacemaker leaks

Lyle E. Bergquist, a senior staff engineer for Technical Operations, developed a helium leak detector that is being evaluated by a company that markets heart pacemakers.

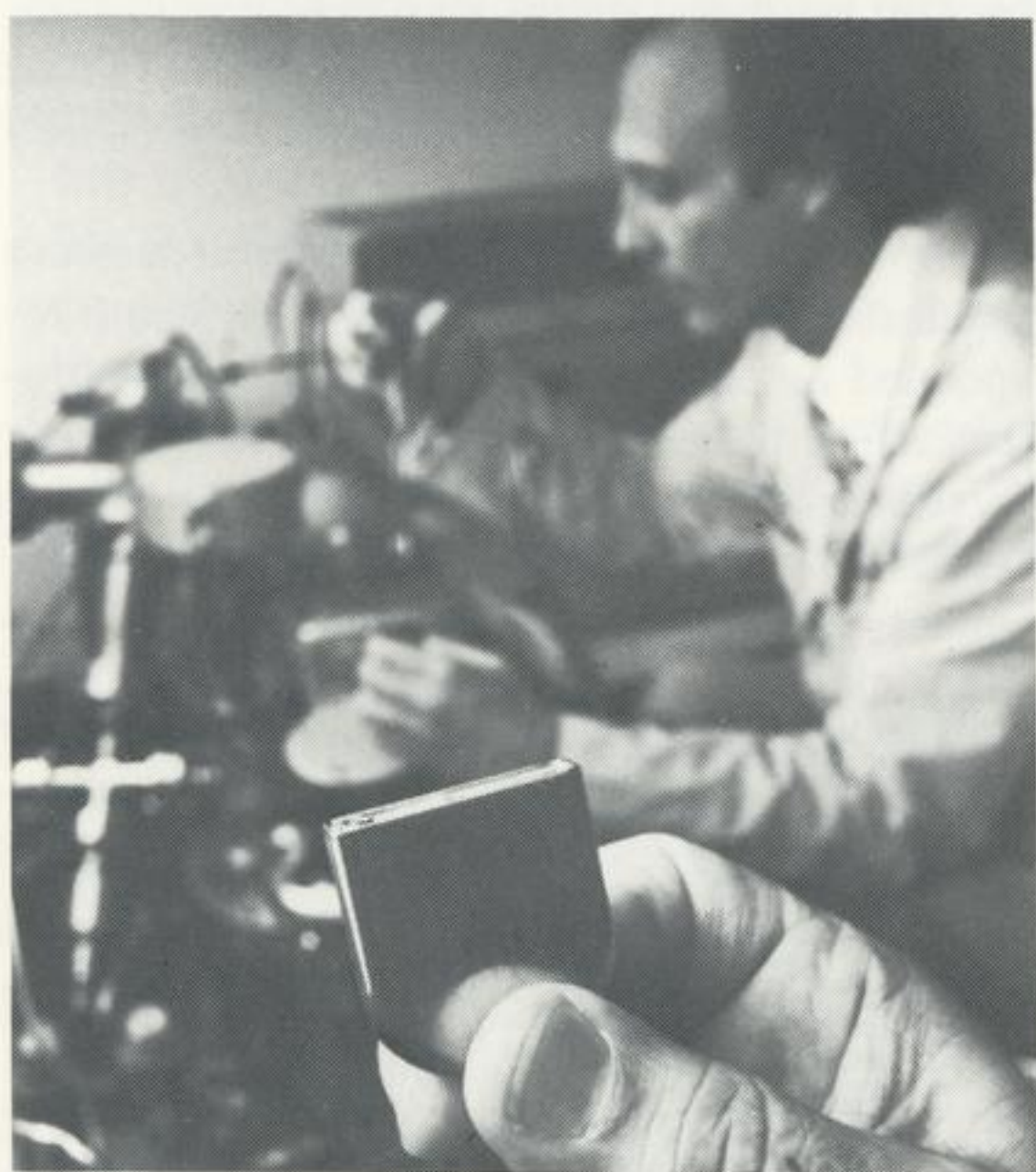
Promeon, a division of Medtronic in Minneapolis, Minn., is evaluating the capability of Martin Marietta's helium leak detector for use with pacemaker batteries. Promeon is interested in the detector's ability to assure that battery gases and body fluids in a patient wearing a pacemaker are isolated.

The detector will measure both gross and fine leaks in one test, which is unique to this

instrument, Bergquist said. Bergquist presented a paper on the detector at the National Bureau of Standards' workshop in Maryland in November 1986. The paper caught the interest of one of Promeon's engineers at the workshop.

Bergquist said he draws on many various sources for his inventions, including experiences, and puts them into different perspectives.

"I believe that if one can find the right question, an answer can be obtained." His continual curiosity, "combined with a good support team at Martin Marietta, and friendships throughout the U.S.," have contributed to his many inventions and successes. Bergquist was named Inventor of the Year by corporate headquarters in 1986 and received the Jefferson Cup in the same year. He has worked for Denver Aerospace since 1969. ■



Engineer Bruce Winsett (background) checks a heart pacemaker battery for leaks. Ed Jurva, with Promeon, holds a lithium iodine power source battery.

Continued from page 2

and Company, to prepare and implement a training program for all corporate personnel on ethical conduct and eliminating fraud, waste and abuse. Initial training was provided at Denver Aerospace early in 1986.

During 1987, further specialized training in detecting and eliminating fraud, waste and abuse will be provided to auditors throughout the company.

Story cited actions taken to strengthen the audit program. Fifteen new staff auditor positions have been created for auditors reporting directly to functional area vice presidents. Most of these positions have been filled. These staff auditors will work full time to audit mat-

Counsel's corner

Every so often, you may see a television news story where a truck overturns and spills hazardous materials on a major highway. Response teams need accurate information about the cargo to clean up such spills correctly and minimize damage to surrounding populations and the environment.

The U.S. Department of Transportation (DOT) has developed extensive regulations governing how hazardous materials may be transported on public highways. The regulations were written to require adequate containers, safe drivers and warnings to others about the contents of a shipment.

These rules, found in Title 49 of the Code of Federal Regulations, detail very precisely which materials are regulated and how they must be packed and labeled. Shipping papers, if required, must be very detailed and accurate, and the truck may need labels (called placards) that warn the public of certain hazards on board. Maximum penalties for non-compliance with DOT regulations are \$10,000 in civil fines for each violation, and five years' imprisonment and a \$25,000 fine for each criminal offense. The state of Colorado has adopted these rules and is actively enforcing them.

DOT rules apply to all methods of transportation, including private automobiles. Do not attempt to circumvent DOT requirements by transporting hazardous materials in your car.

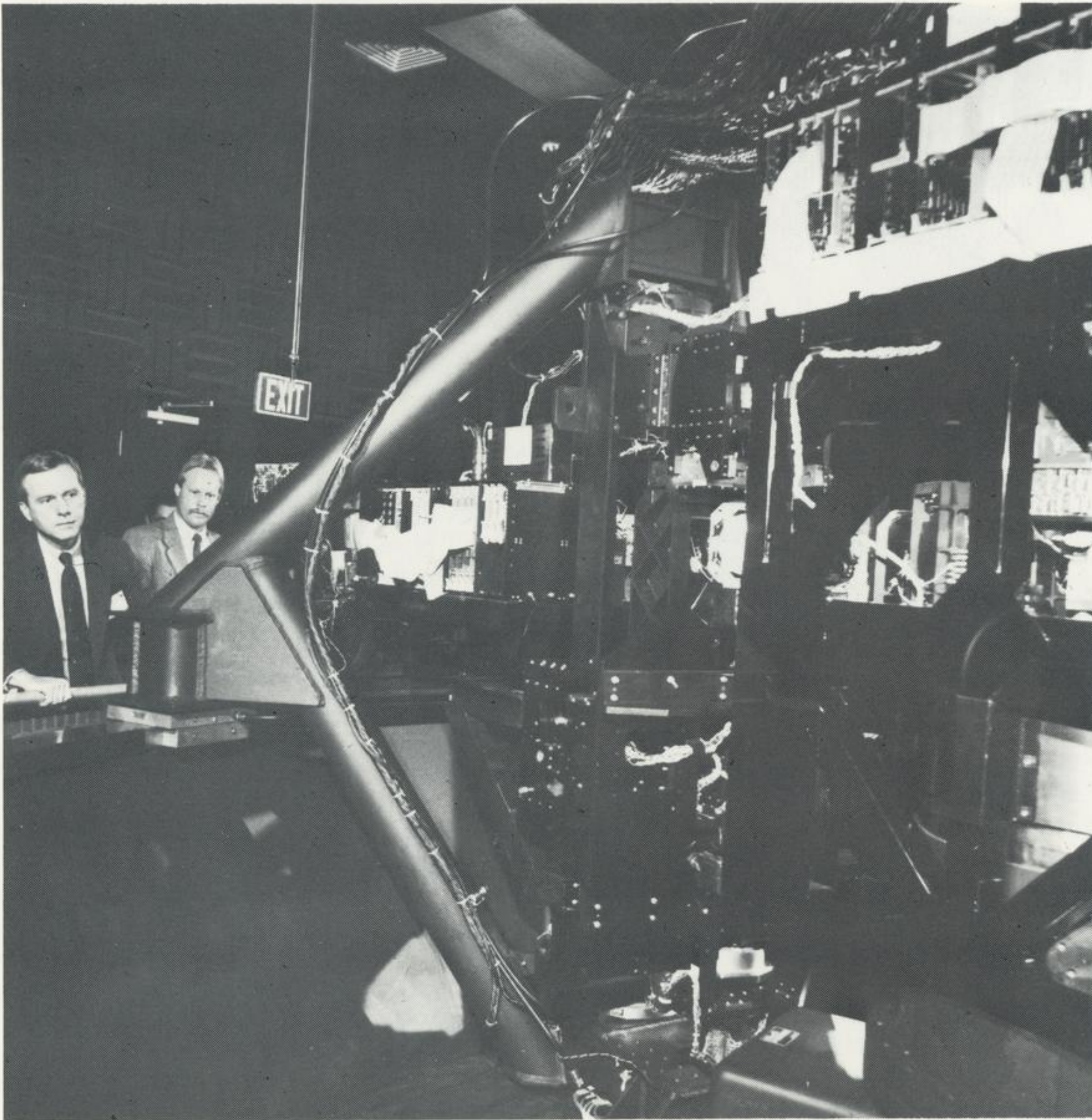
If you need advice, the Denver Aerospace traffic department has the expertise to help comply with DOT requirements. Call Ext. 7-3415 before shipping hazardous materials off-site.

Transporting hazardous materials always involves some risk, but compliance with DOT regulations will minimize Martin Marietta's legal liabilities should an accident occur. Please do your part to transport hazardous materials safely.

ters and operate under Hall's central audit department.

In addition, Peter B. Teets, president, has assumed chairmanship of the Denver Aerospace Executive Audit Committee, which consists of all functional organization and product area vice presidents, plus selected functional area directors. Teets has accelerated the committee's activity from quarterly to monthly to demonstrate his interest and commitment to providing a dynamic audit program.

Hall said a strong audit program that will be recognized as such by customers and other aerospace contractors is the chief audit objective for 1987. ■



Senator reviews SDI activities

U.S. Sen. Pete Wilson, R-Calif., left, examines the gimbal system connection on the rapid retargeting and precision pointing (R2P2) simulator with Paul L. Shattuck, program manager for the R2P2 facility. The senator visited Denver Aerospace recently to review Martin Marietta's SDI participation.

Clearing technical publications requires preparation and time

Well before publishing an article, presenting papers or addressing meetings or seminars concerning subjects relating to company business, policy and practice, employees must obtain approval from public relations and, possibly, clearance from the customer. That necessitates following a number of precise steps.

The first step is to complete a Publication Clearance Form, Form No. 864870. The form requires information regarding the paper, the publications printing the article, names of the meeting and sponsoring society, and the approval of the employee's program manager, public relations, security, patents, contracts, and possibly the customer.

After completing the form, the author or authors must send three copies of the publication (unless customer clearance is required) to public relations, Mail Stop 1200. The paper may be hand carried through the local process to obtain the necessary signatures, but customer clearance will still require approximately six to eight weeks.

A publication requires customer clearance if it (1) results from work performed under contract; (2) results from work done in advance of, following, or otherwise related to a contract; or (3) refers to a contract or to contractual work that requires approval from the customer before release. The fact that a contract is unclassified does not imply customer agreement to release information.

If the contract specifies a requirement for customer clearance before public release (if in doubt, check with contracts), and is a Department of Defense contract, the author must send eight copies of the publication.

Presenting a paper outside the U.S., or any other release of technical data (including unclassified information) outside the country, may require State Department approval and issuing an export license. This process can take several weeks to several months.

Clearance of a publication does not constitute submission to the publications award committee. This must be done separately after publication has actually occurred. ■

History . . . On a wing and a prayer

(Editor's note: This is the second in a series of articles about Glenn L. Martin, and the dream on which he built an aircraft empire and the company that became Martin Marietta. The series is courtesy of Orlando Aerospace.)

SANTA ANA, California, 1910—A young man, Glenn Martin, is alleged to have been seen flying his homemade aeroplane at the mesa close to Santa Ana.

A *Los Angeles Times* editor used the word "alleged" to avoid embarrassment in case the report of the flying man was false. Martin had been flying for nearly a year but few had actually seen his strange contraption in the air. The weight of the engine kept him puddle-jumping close to the ground.

To look at this serious, conservative young man, one could hardly imagine that behind those spectacles lurked such dare-devilish visions. In an effort to save Martin from himself, the family doctor, Dr. Sutherland, wrote a warning to Minta, Martin's mother, to curb her "hallucinated, visionary ... before he is killed." Minta was quick to point out that her son knew exactly what he was doing.

The weight of the craft continued to plague Martin until he bought a 70-horsepower Curtiss O engine. At last he could show the disbelievers that man really was meant to fly. Rumors of Martin's activities reached the *Los Angeles Times* and a reporter was sent to the scene. Tourists flocked to Santa Ana to witness this miracle for themselves and the townspeople were developing a new respect for Martin.

DOMINQUEZ FIELD, California, Jan. 10, 1910—The Los Angeles Air Show opened today featuring French aviator Louis Paulhan, American pilots Glenn Curtiss, Charles Willard and C. K. Hamilton, and balloonists Roy Knabenchau and Hilary Beachey.

Continued on page 5

MARTIN MARIETTA NEWS

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MARTIN MARIETTA

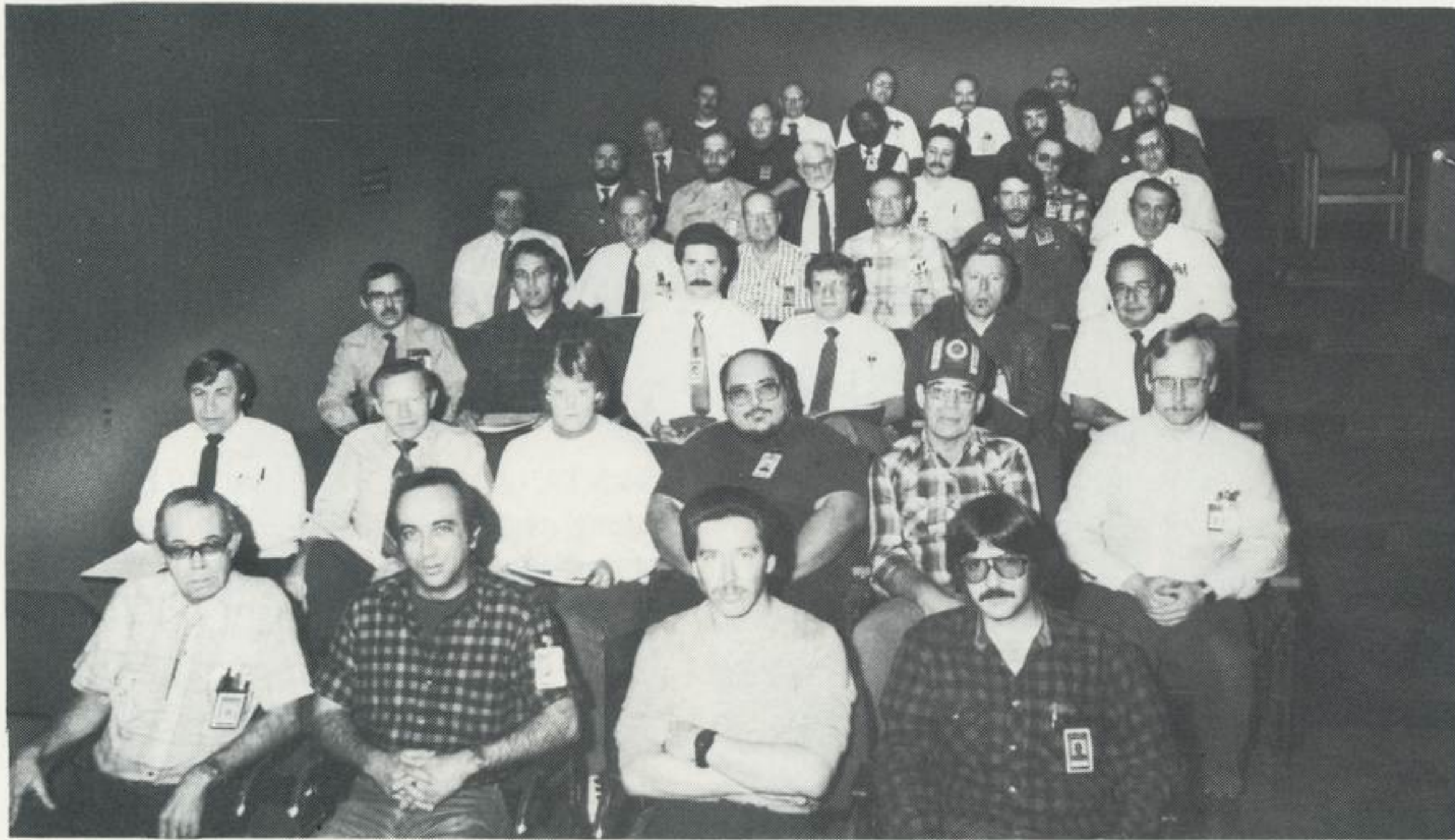
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January 30, 1987



Investment in excellence participants from detail fabrication attend recent class.

Manufacturing employees invest in excellence course

"Isn't it enlightening to become aware of how negative people can be?" That question brought new awareness to more than 50 manufacturing employees from the detail fabrication area.

The question was posed after a 24-hour assignment that required employees to avoid anything negative or hostile directed toward them or others around them.

The employees are involved in a program called Investment in Excellence. They participate voluntarily on their own time. C. T. (Buck) Reynolds, manager of detail fabrication and a class participant, arranged sessions for his first- and second-shift employees.

"What better way to change attitudes and improve workmanship and productivity, than to make programs like this available to any and all detail personnel who are willing to spend their own time," Reynolds said.

"The response has been very gratifying," he added. "Not only is this series helpful to our line of work, it is very useful in all walks of life. I sincerely believe it changes your outlook on things and puts everything in a positive mode."

Comments from employees such as Ed Miera, Paul Wilson, Max Arb and John Gerecht echoed the same positive attitudes to-

ward the program. "It made me conscious of the power to change not only my self-image, but to influence the environment, in all aspects, in a positive manner," Gerecht said.

Clifford J. Kronauer, director of Effectiveness Programs, introduced the program to Denver Aerospace. "The Pacific Institute was founded about 15 years ago by an entrepreneurial football coach, Louis Tice," Kronauer said. "Tice originally became interested in the psychology of superior athletic performance, and expanded his investigations to include outstanding individual and group performance in all types of endeavor."

Tice teaches methods for achieving peak performance by identifying or changing habits, beliefs and attitudes that prevent individuals or organizations from reaching their full potential. Several groups in Denver Aerospace have been viewing and evaluating the Pacific Institute's Investment in Excellence videotape lecture program.

"The ideas of Lou Tice can be an important element of the Denver Aerospace Commitment to Excellence program by reinforcing our vision of continuing performance improvement, and easing the introduction of the concepts and techniques that will help us to achieve that vision," Kronauer said. ■

Continued from page 4

The aerobatic antics performed that week were fuel to Martin's fire. As he watched Louis Paulhan break record after record for altitude and distance flying, Martin grew more determined than ever to make a living from flight.

The air show's success encouraged sponsors to stage another one and make it an annual midwinter affair. Martin rose to the challenge. He spent most of 1910 getting ready—practicing landings, takeoffs, rolls, turns and tricks. His application to the aerial act was accepted and he was assigned to an event featuring local amateurs.

With his friend Charlie Day, who had entered a plane of his own design in the same race, Martin got his flying machine to the field. Classified with amateurs, Martin was anxious to prove that he was in the same league with the pros performing breathtaking stunts.

Neither Martin nor his friend Day had luck. In a prerace event, Martin was just getting off the ground when the engine stopped. The plane's wheels struck a fence and the craft landed, only slightly damaged, on the other side.

Day was unluckier. His engine quit as he soared past the grandstand 100 feet off the ground. He lost control and crashed. The crowd held its breath until Day crawled from the wreckage and limped away, exclaiming angrily that he was finished with flying.

Then tragedy struck the air show when a pilot on the Wright brothers' flying team, 26-year-old Arch Hoxsey, crashed and died. But the show must go on, and both amateurs and professionals took to the air the next day.

For Martin it was a great day. Repairs on his plane were complete and the craft's performance was perfect. Martin won the Orange Belt race for amateurs and received a blue ribbon and \$450.

The serious young man told his mother he was going to open an aeroplane factory with his prize money. ■

USC degree briefing set for February 9

Gayle Ganger, coordinator for the University of Southern California extension program, will brief anyone interested in the systems management master's degree program at 10:30 a.m., Monday, Feb. 9, in the Engineering Presentation Room.

Dr. Ogden Brown also will be available to answer questions on the program.

USC students may register for Term V from 11:30 a.m. until 1 p.m.. The term begins March 9.

On the cover:

Magellan spacecraft meets major milestone

Charles E. Brown, left, Magellan program director, and Gary Parker, spacecraft manager for the Jet Propulsion Laboratory at Pasadena, Calif., examine the Magellan upper body structure after completing the structure's first major hardware milestone this week. Cables and electronics will now be installed on the structure.

Denver Aerospace is responsible for overall design and implementing the spacecraft, and all assembly and testing is done at the Waterton facility. The Magellan spacecraft will orbit Venus and send back photograph-like images of the planet's surface and measurements of Venus' gravity field.



U.S. Savings Bonds

Employee services/recreation

LSC Toastmasters—The group meets at 4:30 p.m. Wednesdays in Room 103 at LSC. All interested employees are welcome. Contact Henry Evans, Ext. 7-0575.

Rocky Mountain Alpine Club—A one-day cross-country ski trip for beginners to Jefferson Lake is planned for Sunday, Feb. 1. Contact Larry Espelage, Ext. 7-6156.

A one-day cross-country ski trip for beginners to Shrine Pass is planned for Saturday, Feb. 14. Contact Dan Hawkins, Ext. 7-0705.

Junior Achievement—Qualified employees are still needed to form a Martin Marietta-sponsored Junior Achievement company. Employees, in the roles of finance, production and marketing advisers, will help high school students learn about free enterprise. The JA company will meet one day a week from 3-5:30 p.m. from late February to late May. Adviser training will be provided Feb. 5. Interested employees need to contact Lori Sharp immediately at Ext. 7-6605 or 7-6750.

Chess—The Chess Club will meet at 6:30 p.m. Wednesday, Feb. 4, at DSC I, at the second-floor snack room.

Hunting—The Skyline Hunting and Fishing Club will meet at 5 p.m. Monday, Feb. 9, at the club meeting room in the recreation area.

Get a fresh start—Participate in a smoking cessation class in February. Fresh Start is a "no-nonsense" quit-smoking program led by trained, ex-smokers. The program helps participants understand smoking as a chemical addiction, as a habit and as psychological dependency. Class dates are 5-6:30 p.m. Feb. 2, 5, 9 and 12 (students attend all four sessions) at Goddard Junior High School, Room 201. To register, call the employee services/recreation office, Ext. 7-6605 or 7-6750.

Corporate Games—The Martin Marietta Masters/Corporate Games Bowling Tournament resulted in the following: winners and representatives to the Denver Masters Tournament on Feb. 7, 8, 14 and 15 will be Floyd Teiffel, first place, and Earl Layton, second place. Corporate Games representatives are Marilyn Grafner, Dixie Wilmot, Floyd Teiffel, Earl Layton and Tom Renz. Substitutes are Jess Deal and Kathy Johnson. The High Game Winner was Roy Jenson and High Series Winner was Floyd Teiffel.

Amateur Radio—The Waterton Amateur Radio Society will meet at 5 p.m. Tuesday, Feb. 3, in the Hamshack, west side of the recreation area.

Riding—The Ridge Riders Saddle Club will meet at 7 p.m. Tuesday, Feb. 3, in the club meeting room at the recreation area.

Archery—The Red Rock Bowmen Club will meet at 4:45 p.m., Tuesday, Feb. 10, at the clubhouse in the recreation area.

Ski Club—The Satellite Ski Club plans the following trips: Telluride I, Feb. 6-8, cost \$120; contact Alan Rice, Ext. 7-9474 or 973-8344. Telluride II, Feb. 20-22, cost \$120; contact Jane Baumann, Ext. 7-4977. Jackson Hole, March 12-15, cost \$117; contact Phil Penningroth, Ext. 7-5860 or 798-7125. Prices will be slightly higher for non-ski club members.

Discount Coupons—Coupons offering roller skating, miniature golf or bowling at Funplex are available for \$1, plus cost of any rentals, from all volunteer recreation representatives, and at the employee services/recreation office. Coupons are valid through March 31. Day and time restrictions are noted on the coupon.

Motorcyclists—The Aeroriders Motorcycle Club will meet at 5 p.m. Thursday, Feb. 5, at the recreation field clubhouse. Contact Walt Cooper, Ext. 7-5364.

L5 Society—The Denver Aerospace L5 Society will meet at 7 p.m., Friday, Feb. 13, in the SouthPark West Presentation Room, No. 103A. Robert Price will discuss reuse of the space shuttle external tank in orbit.



Al Sulzer (standing in the front row second from the left) plant protection chief, and Lt. A. H. (Bud) Hessel (front row, third from the left) plant protection fire protection officer, congratulate members of the backup team gathered at the fire truck. Volunteers include (front row, left to right) Art Vos, Sulzer, Hessel, Rich Nanney, and Ed Clint (standing on the running board), and Ray Ruiz and John Brand. Seated on the truck are Jim Ryan, Harry Schumacher, Lyman Gerrard, and Jim Young. Standing in the rear are Mark Westervelt, Greg Shaw, and Jeff Lauder. Not shown are Steve Keif, Ken Brumbaugh, and Gary Brooks.

Auxiliary fire team praised

Volunteers of the auxiliary fire brigade backup team at Denver Aerospace were congratulated recently for excellent performance during the contractor operations review (COR) in 1986.

Two simulated emergency exercises were conducted during the review. The team responded as backup to members of plant protection's emergency response team. The Air Force Contract Management Division (AFCMD) review team rated the group's responses as very satisfactory, and cited the auxiliary members for outstanding performance.

"The auxiliaries were far superior to all of the 38 agencies we have visited, and, in fact, are better than some municipal fire departments with which we have worked," reported Mert Brigsby, AFCMD fire and life safety auditor for the COR team.

"It is a great experience to be able to work and train with a group such as the backup team, because they're dedicated and willing to put forth that extra effort, and it shows," said Art Vos, auxiliary chief and change planning manager for Defense Systems. ■