

MARTIN MARIETTA

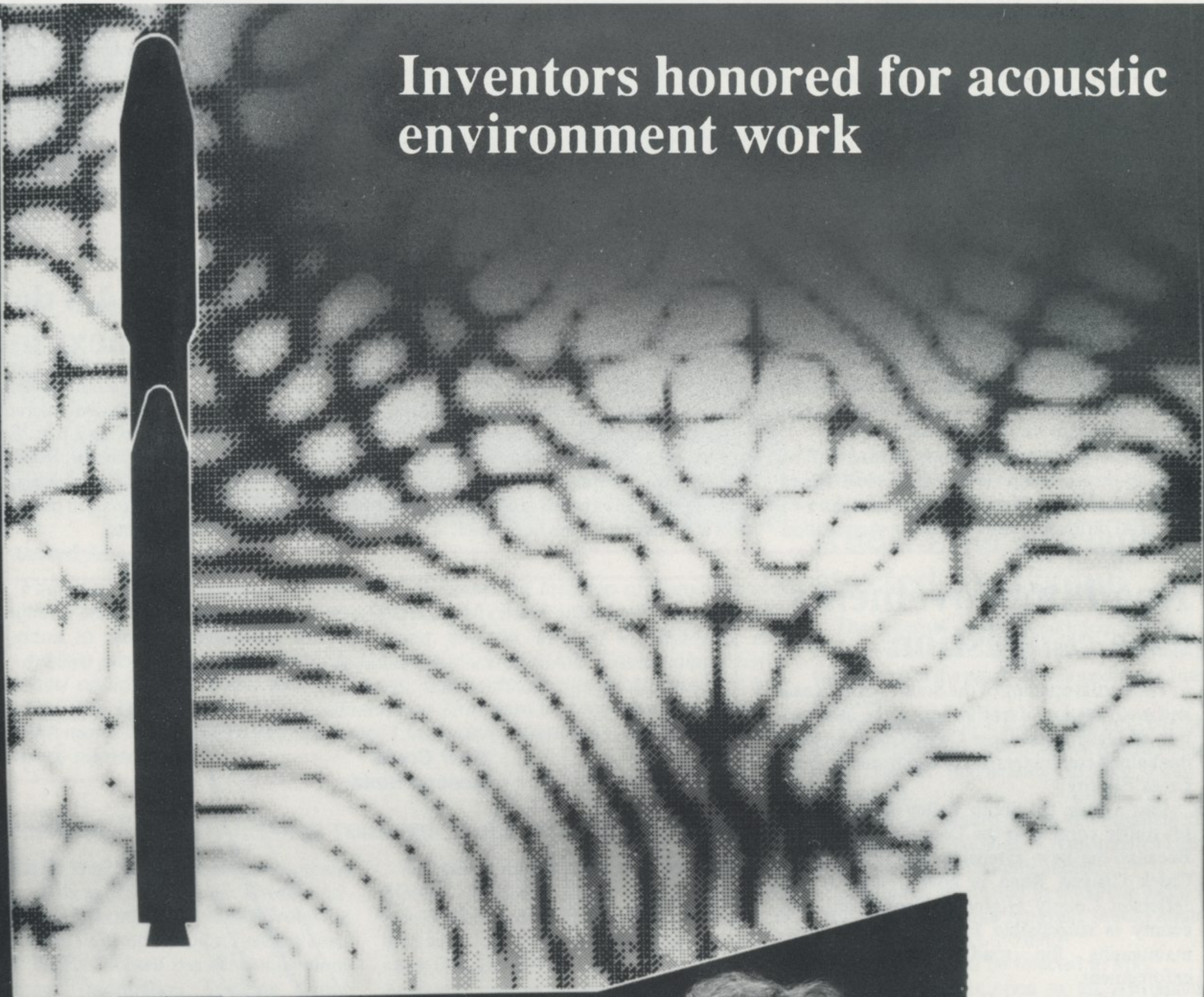
news

ASTRONAUTICS GROUP

January 26, 1990

Number 2

Inventors honored for acoustic environment work



Corporate news

Corporation reports fourth quarter, 1989 earnings

The Corporation reported 1989 net earnings of \$306,943,000, or \$5.82 per share, which compared with 1988 earnings, adjusted for comparison purposes for two one-time events, of \$279.1 million, or \$5.25 per share. As previously reported, 1988 earnings of \$358,875,000, or \$6.75 per share, are not directly comparable with 1989 because of a \$2.55 per share extraordinary prior-year gain from the sale of a computer service subsidiary and a 1988 reserve for the Commercial Titan program which reduced earnings by \$1.05 per share.

Sales in 1989 were a record \$5,796,182,000, compared with \$5,727,482,000 in 1988. Backlog at year-end, also a record, stood at \$13.4 billion, up from \$11.2 billion at the end of 1988.

Fourth quarter earnings were \$73,524,000 or \$1.41 per share versus \$23,714,000 or 45 cents a year ago after the above-mentioned fourth-quarter 1988 reserve for the Commercial Titan program. Timing differences in the receipt of award fees and the recognition of program performance improvements benefited the fourth quarter more in 1988 than in 1989. Sales in the fourth quarter were \$1,623,277,000, compared with \$1,535,140,000 in 1989.

"The 1989 results include excellent gains in sales and earnings by the Astronautics Group and reflect strong margins in the Electronics & Missiles and Materials groups," said Norman R. Augustine, chairman and chief executive.

Newly developed optical coating to save Army money

The Corporation is applying a new and more durable optical coating material the U.S. Army says will save \$27.9 million over three years in maintenance and spare parts costs on a night vision system.

The transparent, hard carbon coating will be used to protect the windows that shield lenses used in the Martin Marietta-built system known as TADS/PNVS, or Target Acquisition

Designation Sight/Pilot Night Vision Sensor. The system enables pilots of the Apache attack helicopter to fly a few feet off the ground in darkness and poor-visibility weather and launch missiles against tanks and other armored targets. Mounted on the nose of the helicopter, the system's optical windows, made of germanium, are exposed to sand, dust, and other debris stirred up by the helicopter. ■

Strategic Systems wins missile trailers contract

Strategic Systems has won a \$33 million contract to design and build 55 missile payload transporter trailers for the U.S. Air Force.

The trailers will be used to transfer Minuteman ICBM components from operating bases to silos and to place the missile payloads into the silos. They will replace the vans currently used for Minuteman II and III.

Strategic Systems will produce the trailers under the 44-month contract from the Ogden Air Logistics Center at Hill Air Force Base, Utah.

Multimate 4.0 demo scheduled next month

The Office Automation Futures Group is hosting an Ashton Tate demonstration on Multimate 4.0 from 9 a.m. to 2 p.m. Feb. 9, at the Deer Creek Facility Library, Room 3A418.

Ashton Tate will be displaying the new features of 4.0, and information on upgrading current Multimate systems. ■

Road improvements ease congestion

The partial opening of the South Valley Road and modification of traffic flow at the intersection of Owens and Deer Creek Canyon roads has helped commuters get to and from the Deer Creek Facility.

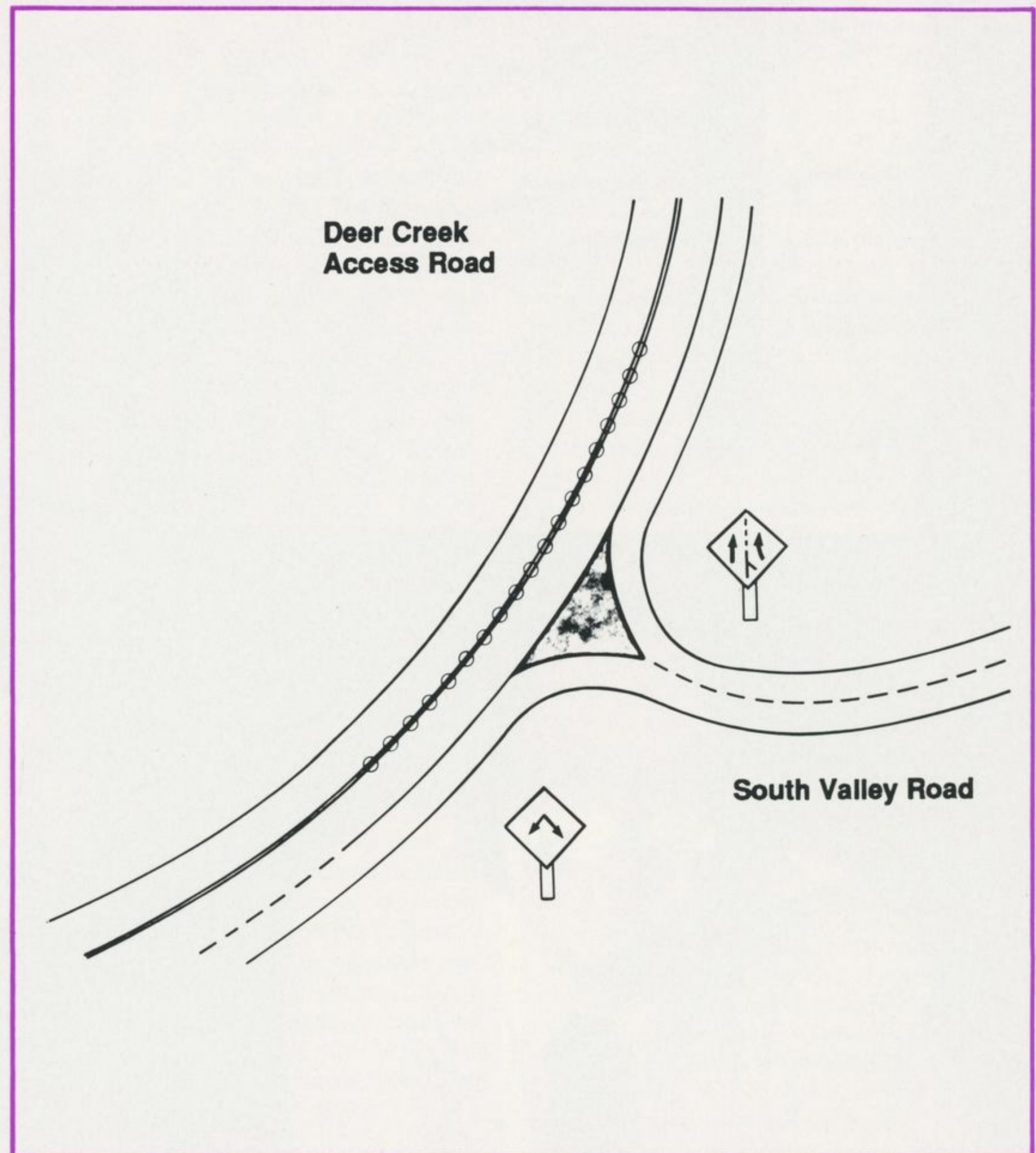
Last month, the South Valley Road opened for traffic coming to the Deer Creek Facility. Because the new extension through to Deer Creek Canyon Road is now a part of the Jefferson County Highway Department, the county is responsible for posting all signs, maintaining the road, and for traffic enforcement.

For traffic leaving Deer Creek, the county has banned left-hand turns and U-turns onto the South Valley Road due to safety concerns. Moreover, traffic heading to the Deer Creek facility from the canyon road must use the left lane through the South Valley Road intersection.

These traffic flow restrictions will remain in effect until Jefferson County completes an extensive modification of the intersection this spring.

Changes at the Owens and Deer Creek Canyon Road intersection are now in effect. They include a stop sign at the intersection for commuters traveling west and right of way for traffic going to and from Deer Creek Canyon Road to Owens.

In addition to these local road changes, Plant Protection is asking employees to wear seat belts, obey the posted speed limits, and park in proper spaces. ■





SLS introduces command media carrel

With the cooperation of the Electronics & Missiles Group in Orlando, Space Launch Systems has developed an automated command media carrel for employee use. The unit consists of a touch screen to determine appropriate command media (policies, procedures, practices) by a keyword search or direct access with display on a full-page monitor. Applying a user friendly method to help employees, the carrel is driven by a personal computer and specialized software that allows complete access to corporate, Astronautics Group, and SLS command media. Tom Fox, senior management engineer from SLS's command media, demonstrates use of the new carrel.

Spacecraft course offered by UCCS

The University of Colorado at Colorado Springs (UCCS) is offering an engineering course in spacecraft design at the Littleton Systems Center this spring.

Taught by Dr. G. Tom Kroncke, the course begins with a 5:30 p.m. registration Monday, Jan. 29, in LSC Conference Room 212. Registration will be followed by a session from 6:15 to 9:30 p.m. The class will meet at that time on Mondays through May.

This is an intense design course in which a spacecraft bus is designed to support a particular payload and mission. Prerequisites for the course include a class in spacecraft technology, an equivalent class, or permission from the instructor. Kroncke emphasizes that an understanding of all spacecraft subsystems and their technologies is important for success in this design course.

For more information, contact College/University Programs at Ext. 7-3736 or Ext. 7-4050. ■

On the cover

Tom Gaines, left, and Dr. George Sowers are shown with a computer image produced by their award-winning idea—"Generalized Acoustic Simulation Program (GASP)." This computational tool played an important role in analyzing the Commercial Titan acoustic environment and has the potential for application in many other areas requiring acoustic predictions.

Awards granted for inventions and new technology disclosures

Fourteen employees were granted awards for their inventions in the last quarter of 1989 by the Astronautics Group Intellectual Property Review Board, and five earned awards from the New Technology Evaluation Committee.

The inventions and patents program encourages creative efforts toward the improvement of company products, advancement in scientific fields, and disclosure of significant technical contributions.

The following employees (from Space Systems company, unless noted) received cash awards for their inventions:

Dr. Joseph H. Armstrong, Brian J. Maclean, William J. Arbegast Jr. (SLS)—"Shape Memory Alloy Rivet Technology (SMART)";

Wendell H. Chun, Dennis P. Pereira—"Programmable Switch and Status Indicator";

John A. Holland—"Wire Group Matrix Process";

John S. Marino—"Cryogenic Transfer Valve";

Max E. Nielsen—"Mirror Surface for Wide-Angle Beam Steering System";

William D. Nygren Jr.—"Electrostrictively Driven Hydrodynamically Lubricated Journal Bearing," "Piezoelectric Bushing," and "Shape Memory Alloy Driven Lubricant Pump";

Dr. George F. Sowers Jr., Thomas R. Gaines (both SLS/Commercial Titan)—"Generalized Acoustic Simulation Program (GASP)";

W. Troy Tack, Larry W. Loechel (both ALS)—"Composition Modifications to Weldalite for Enhanced Fracture Toughness";

William H. Tobey—"INNEROTER—A Method to Improve Precision Servomechanism Rotary Joints."

In the new technology program, a disclosure must be submitted on any idea conceived or reduced to practice under a National Aeronautics and Space Administration contract or subcontract. The following employees received new technology awards:

Paul M. Anderson, James A. Martin—"Automated Power Distribution System Hardware";

Jonathan Murray (Strategic Systems)—"Optimal Powered Flight Control";

Michael G. Thornton, Dr. Benton C. Clark III—"Environmental Monitoring with Portable Analysis by X-ray (EMPAX)."

In addition, the following Astronautics Group employees have received cash awards and certificates of recognition from NASA for their new technology disclosures selected for publication as NASA Tech Briefs:

Barbara A. Bicknell—"Zero-g Fluids Glovebox," and "Zero-g Material Cutting/Polishing Facility";

Thomas R. Lisee (SLS), Dr. Andrew J. Spiessbach—"Simple Autonomous Mars Walker," "Simple Large-Scale Mars Roller," and "Agile Mars Walker."

For information on the invention program, call Jo Salazar, Ext. 7-6501. Information on the new technology program can be obtained from Anella Knoke at Ext. 7-6500. ■

Year-end video to air on Channel-12, ready soon for employees to check out

The Astronautics Group year-end video, titled "1989: The Year in Review," will air at 9:30 a.m. on Feb. 3 and 4 on KBDI Channel 12.

The 20-minute video highlights the accomplishments of 1989 for the Astronautics Group.

Also, the video will be available for employee use beginning next month. More than 200 copies of the video featuring an introduction by Astronautics Group President Peter B. Teets can be checked out from representatives at the Deer Creek Facility, Waterton, and the Littleton Systems Center.

The representatives are:

Deer Creek Facility: Chris Bosselman, Room 3E-300, Ext. 7-5727; Jim Schaefer,

Room RB-124, Ext. 1-6043; Carolyn Byers, Room RB-124, Ext. 7-9365; Mary Ellen Nolan, Room RB-124, Ext. 7-7973; Susan Duncan, Room 1C-502, Ext. 7-9947; Dan Amerman, Room 3B-211, Ext. 7-1828; and Dave Prince, Room 3B-112, Ext. 7-3571.

Waterton: Robyn Maxwell, Engineering building, Room 105, Ext. 7-1813; Jay Buehler, Engineering building, Annex-201, Ext. 7-5735; and Betty Jean Parrott, Electronic Manufacturing Facility trailer, Ext. 1-9503.

Littleton Systems Center/South Park: Jerry Fiala, South Park West 1, Room L5007, Ext. 7-1636. ■

30 years of service



Employees achieving 30 years of service in 1989 were honored recently at luncheons. Honorees include, seated left to right: Robert Henderson, Anne Baty, Emily Pickrel, and Bob Bush. Standing, left to right: Robert Jackson, Bill Wolfe, Steve Ducsai, Charles Johnson, John Mossman, Otis Watson, Bill Petry, and Doug Miller.



Seated, left to right: Jerry Baker, Tom Roberts, Joe Boh, and Jim Devine. Standing, left to right: Jack Kalaher, Dick Farrell, Dick Ciepiela, Ray Lyon, Dick Gibb, Jim Tyndall, Roy Heyman, Herbert Meyer, Randy Williams, Larry Kelly, and Gordon Keepers.

Tax help available for Colorado taxpayers

The Colorado Department of Revenue has several toll free taxpayer assistance numbers set up to answer questions.

Employees who have questions about tax responsibilities, need to order state forms and publications, or require help resolving a problem can call the department. The numbers to call are:

- Income and withholding tax information
534-1209
- Income tax forms orders
534-1408
- Income tax refund inquiries
866-3239

Office hours for the Colorado Department of Revenue are from 8 a.m. to 4:30 p.m., Monday through Friday.

Employees talk TQM with NASA

Astronautics Group employees visited NASA's Johnson Space Center (JSC) in Houston last week to share Astronautics Group Total Quality Management (TQM) experiences with some 50 top JSC managers.

The Astronautics Group was invited to conduct the one-day TQM workshop because JSC has been picked by the federal government as one of three pilot sites for TQM implementation.

"The government is developing Malcolm Baldrige National Quality Award-like criteria for government agencies to use to assess themselves," said Ken Shipe, director of Product Assurance (special assignment).

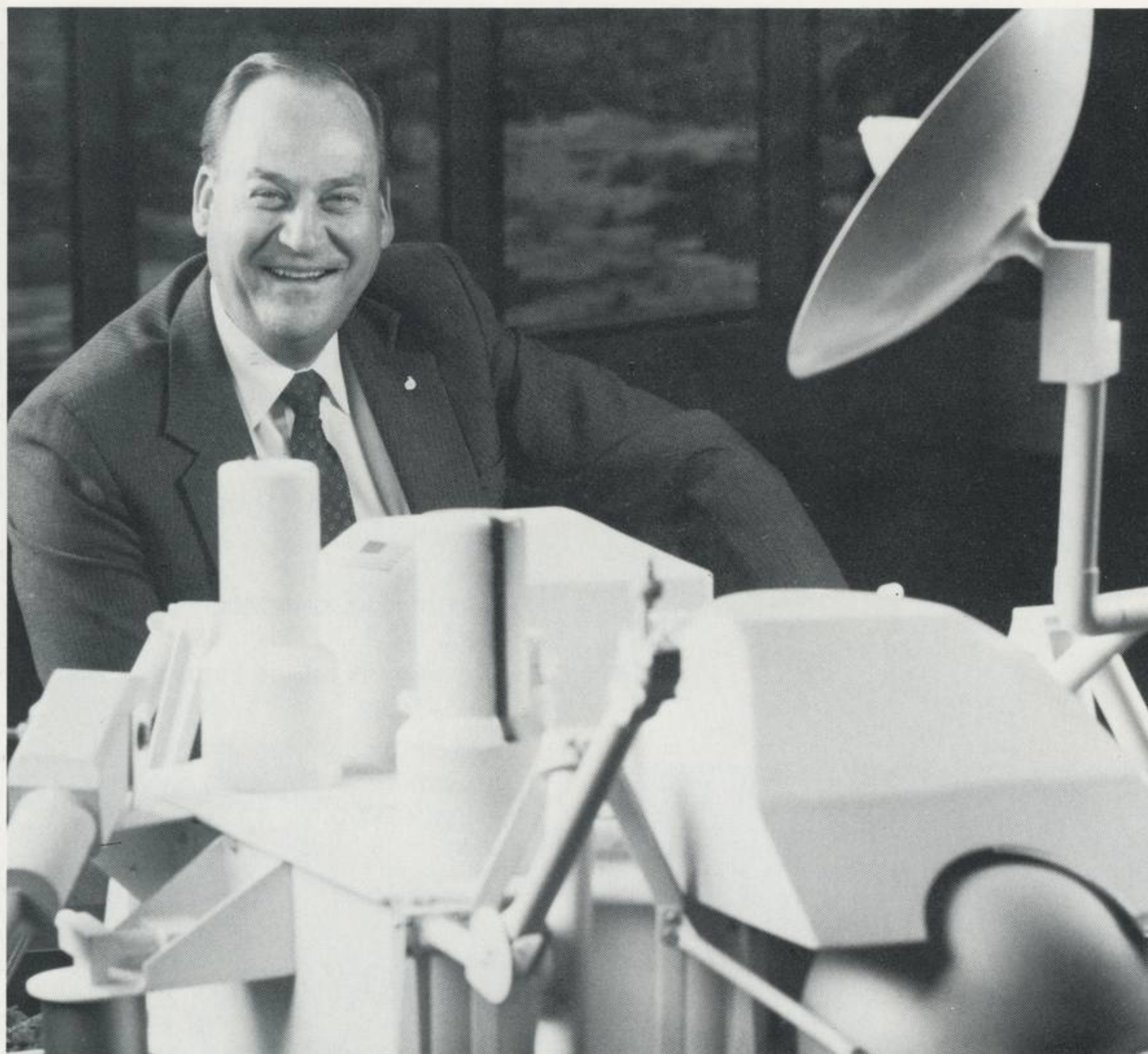
"We talked with them about the criteria we're using to assess ourselves, what we believe TQM to be, and all the things it encompasses—from training to people empowerment to technical elements like MRP II and engineering tools like quality function deployment," Shipe said.

Barbara Bicknell, who made the quality function deployment presentation, said, "One of the people who attended our workshop told me, 'I came expecting another contractor sales pitch, but you people are serious about TQM and you're straight with us. I'm very impressed, especially with the technical applications.'"

Meanwhile, Earle Lewis of Space Systems introduced TQM to almost 40 employees of various federal government agencies in the Denver area last week.

"They were really amazed at how far reaching TQM is," Lewis said.

Lewis is a member of an industry-government group appointed by the state of Colorado to develop criteria for a state-level equivalent to the Baldrige Award. ■



Fester named AIAA Fellow

Dale A. Fester of Space Systems was named an American Institute of Aeronautics & Astronautics Fellow in 1989. In naming him a fellow, AIAA cited Fester for his "outstanding contributions to fluids engineering for the Viking, Shuttle, Intelsat V, Olympus, and defense system programs, and for long dedicated service to AIAA." Fester joins a list of distinguished contributors to the arts, sciences, and technologies of aeronautics and astronautics. This field includes such luminaries as Theodore von Karman and Glenn L. Martin. AIAA names one fellow a year for every 1,000 voting members. Last year, 33 AIAA Fellows were named.

Information Systems Group realigns Data Systems elements

The Martin Marietta Data Systems company no longer exists as of Jan. 1, 1990. A restructuring within the Information Systems Group has aligned former units of the Data Systems company into highly focused business units along with former Information Systems Group elements.

Of special interest to the Astronautics Group, Martin Marietta Data Systems—Denver Account now will be referred to as Internal Information Systems—Denver Account. This name change will have no effect on the Denver Account's current charter to design, develop, supply, and integrate management information

"We will continue to align our business initiatives to directly support the Astronautics Group and our goals for total customer satisfaction."

—G. Max McGarr

The Information Systems Group has now successfully consolidated the following seven operating elements under its organization: Air Traffic Systems, Civil Information Systems, Facility & Professional Services, Information & Communications Systems, Internal Information Systems, Production Test & Assembly Facility, and Simulation Systems. A central support organization will support all seven units to reduce costs and increase the focus of management and technical teams.

systems products, services, and capital assets for the Astronautics Group and its operating companies.

"We see the reorganization as an opportunity to align ourselves consistently with the corporation's Information Systems Group organizational strategy," G. Max McGarr, Denver Account vice president, said. "We will continue to align our business initiatives to directly support the Astronautics Group and our goals for total customer satisfaction." ■

Proposal guide available at Editorial department

Copies of the newly revised Astronautics Group Proposal Production Guide (M-77-2 [Rev 2]) can be obtained from the Editorial department by calling Ext. 7-4168.

The document describes procedures for producing proposals on electronic publishing systems and the Apple Macintosh personal computer.

The forward to the new guide states: "These procedures can be regarded as a 'blueprint' for effective and efficient proposal production—they will reduce production time and costs and improve proposal quality."

"Our main goal is in keeping with Total Quality Management," Alan Felyk, supervisor of Editorial, said. "By that I mean we must ensure that what is sent to the customer is as good as we can possibly make it."

"With this updated guide, we hope to educate the proposal writing community within the Astronautics Group that it takes more than a Macintosh on a desk to put together a solid product," Felyk continued.

"They need to know that we have the expertise, manpower, and equipment to get the job done in an economical and efficient fashion." ■

Audit intern program started for Group

The Internal Audit department has named Art Lawrence and Cary Gambrell to be the first two interns in the newly developed Audit Intern Program.

The program is a six-month full-time program designed to use employees who have been value rated as "outstanding" in labor grades 43 through 50.

Interns are placed in an environment that gives them a broad look at Astronautics Group operations by performing audits.

Candidates interested in obtaining more information about this program should contact Jim Cordova at Ext. 7-7898.

New interns will be selected in May.

The program is open to all Astronautics Group employees. ■

Blood donors needed

The Belle Bonfils Blood Bank is in critical need of blood donations. Employees can help restore the community blood supply by donating from 9 a.m. to 2:40 p.m. on Thursday, Feb. 1, at the Deer Creek Facility, Ebony room, first floor, south of center elevator.

Please schedule an appointment by calling Beverly Cupp or Mardi Emerson in Employee Services at Ext. 7-6605 or 7-6750 before Jan. 31. Donors with appointments are given priority over those who have not scheduled an appointment.

Don't be cruel to your heart

Be nice to your heart. Pack up the cigarettes, eat low-cholesterol foods, get plenty of exercise, and take life a little easier.

The Wellness Center staff at Deer Creek is available to assist all employees in their pursuit of a healthier lifestyle. Individual consultations are available to discuss how to start an exercise program, how to lose weight, nutrition, stress management, and smoking cessation. Take advantage of this free service by calling Ext. 7-7575 or 7-7576 between 11 a.m. and 5:30 p.m.

SLS and Production Operations honor worthy employees

The Space Launch Systems company's Systems and Test department and Production Operations Manufacturing have both honored exceptional employees for their work during 1989.

In Production Operations Manufacturing, Richard Perkins has been named the 1989 employee of the year. This selection is a result of peer selection and meeting criteria for leadership, motivation, and work quality. A Martin Marietta employee for 19 years, Perkins has received many commendations for his technical work on a variety of programs

including a wind tunnel model test and fabrication for Titans.

SLS's Systems and Test department has also named an employee of the year: George Sowers.

Sowers was singled out for his work in acoustic analysis for Commercial Titan.

The Systems and Test department's employee recognition program rewards members for significant contributions to SLS objectives and honors employees from five areas each month—in addition to naming an employee of the year.

Employee services/recreation

Smoking Cessation Classes—Be heart smart and get a fresh start with the American Cancer Society's stop smoking program. Martin Marietta and Air Force personnel, their spouses, and dependents can participate in this program free of charge. The classes consist of four meetings from 5 to 6:30 p.m., Jan. 29, Feb. 1, 5, and 8, at Goddard Middle School. Another session will be offered in March. Participants can obtain registration forms in the company education catalogs or from the recreation racks. Direct questions to Ext. 7-6605.

Fitness Classes—It's not too late to fulfill your new year's resolution. Get fit by participating in low-impact aerobics, ski fitness, and body toning classes at the Deer Creek Wellness Center. The facility is now selling class cards valid through March 30. Employees can purchase a \$15 card and attend 10 classes or buy a \$30 card good for 20 classes. Students no longer need to register for a specific class. New participants must have their blood pressure taken and complete a medical history form prior to their first class. These forms can be picked up at the Wellness Center. A flyer describing the card system and classes in detail can be found in all recreation racks and at the Wellness Center, Ext. 7-7576.

Mile High L5—The group will meet at 7 p.m. Monday, Feb. 5, 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, Feb. 6, in the recreation area clubhouse. For details, contact Mary Smith at Ext. 1-8154 or Irene Woodzell at 688-9676.

Radio Club—The Waterton Amateur Radio Society will meet at 5 p.m. Tuesday, Feb. 6, in the hamshack at the recreation area. For more information, call Jeff Owings, Ext. 7-3629, or 7-6898.

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

Cross-Country Skiing—A trip for intermediate to advanced skiers is planned for Feb. 17 to Herman Gulch. For specific details, contact group leader Clay McGann at Ext. 1-2179.

Discount Ski Lift Tickets—Breckenridge full-day tickets are available for \$21 for adults, and \$11 for children, 6-12 years, and seniors, 60 years old and over. The Winter Park adult ticket is \$23, and the price for children 6-13 years is \$13. The Breckenridge adult ticket is \$3 less than at Front Range outlets, and the other tickets are \$2 less. The tickets are valid seven days a week until April 1 and are validated by the lift attendant at the ski area. Tickets can be purchased by check or cash from the employee stores at Waterton and Littleton Systems Center or from the Employee Services office at Deer Creek. Checks only are accepted by the recreation representatives at Greenwood and South Lincoln facilities. A flyer with additional information is in the information racks.

Crested Butte Discount—Coupons are available for a discounted \$24 lift ticket at Crested Butte, valid through March 31. Employees can request coupons by calling the Employee Services office, Ext. 7-6605.

Discount Movie Tickets—The Mann and American Multi Cinema (AMC) theatre chains have increased the price of discount movie tickets to \$3.50. These tickets are available at the Deer Creek recreation office, the branch recreation office at Waterton, Room 200 of ORB, in the company stores at Waterton and LSC, and from volunteer recreation representatives at Viewpoint II, South Lincoln, Greenwood Commons, and the Space Support Building. For the name and room number of the representatives, call Employee Services at Ext. 7-6605.

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 offices at Deer Creek and Waterton, the company stores (Deer Creek, Waterton and LSC), and from volunteer representatives at SSB, LSC, South Lincoln, Viewpoint II, and Greenwood Commons. The coupons expire Feb. 15 and do not cover rentals. Individuals may use only one coupon per person per day.

Toastmasters Clubs—LSC Toastmasters meets at 4:30 p.m. Wednesdays at LSC, Room 209G. The contacts are Michele Stillman, Ext. 7-3582, or Marti Friend, Ext. 1-1806. Titan Toastmasters meets at 6 p.m. Mondays at Mission Trujillo Restaurant, 181 Ridge Road (Broadway and Ridge Road). Contact Mark Willey, Ext. 1-6183, for more information. The Littleton Club meets at 7 p.m. Tuesdays at the John Christianson Library (Arapahoe and University). Contact George Fosdick, Ext. 7-9923.

Career Women's Association—CWA will hold elections for 1990 officers and directors Monday, Jan. 29 at the Holiday Inn at Academy Park, Hampden and Wadsworth. Barbara Daubenspeck, dramatist, will present "Statue of Liberty" following the business meeting. Cost is \$8 members/\$10 non-members. For more information, contact Jane Wolfe, Ext. 7-2909, or check flyers in recreation racks.

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R. Christopher Talley Editor

Call Ext. 7-5364 with information for articles.

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