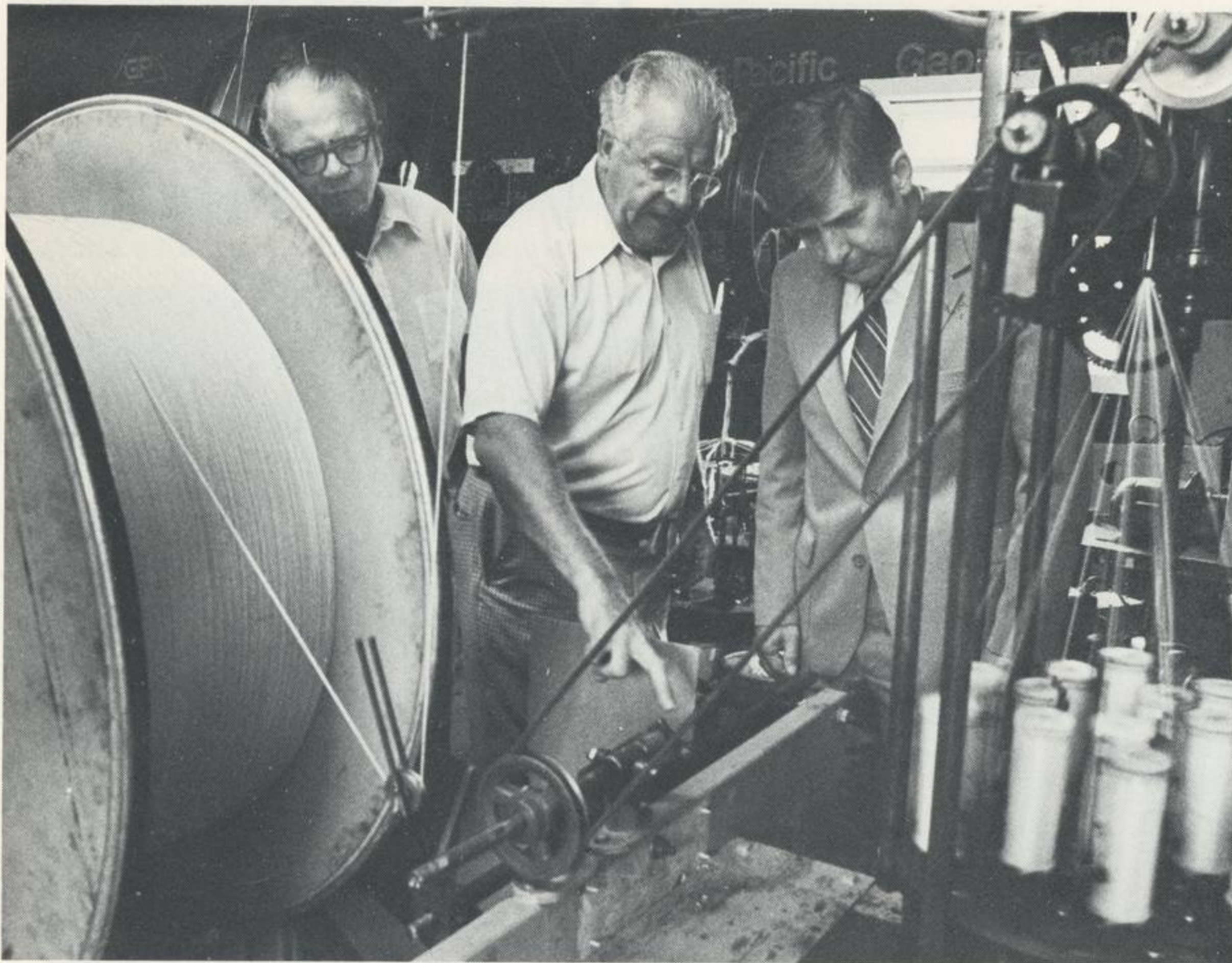


NUMBER 18/1983

**Space Shuttle's
pre-dawn liftoff**



Satellite tether ready for testing



Twelve strands of Kevlar were braided to form the test cable for the tethered satellite system. In this photo from the Cortland Standard, Jack Dower and Dr. Peter Scala of Cortland Cable explain the braiding operation to Donald Crouch, who heads the Denver Aerospace tethered satellite program. The finished 62-mile-long cable weighs about 450 pounds.

NASA orders more tanks for Shuttle

The Michoud division expects an external tank production rate of 24 a year by the end of 1987 to match the expected increase of Space Shuttle launches—at least 232 flights through the mid-1990s.

These forecasts followed the National Aeronautics and Space Administration's (NASA) recent announcement that Marshall Space Flight Center had awarded another external tank contract to the division. The latest, for \$505 million, calls for 26 additional tanks and the purchase of raw materials for an additional 21 tanks during the three-year contract.

Michoud currently is in final phases of completing an earlier NASA order for 15

complete tanks—three for tests and 12 for flights. The test tanks and 11 others have been delivered. Eight have already flown. The last tank is being readied for shipment later this month to Florida's Kennedy Space Center (KSC).

This latest contract, depending on Shuttle launch schedules, could mean hiring an additional 400 at Michoud, which currently employs 4500.

All except one tank under the new contract will be for Shuttle flights from KSC. The exception is scheduled for the first Shuttle launch from Vandenberg Air Force Base, CA, during late 1985.

Walk, jog with care

Employees on lunch-period walks or jogs should use the same rules on company roads as they would on public streets or highways.

"People who walk two or three abreast disrupt vehicular traffic and put themselves in jeopardy," said R. N. Holcomb, manager of personnel safety.

"To avoid people, drivers often must drive in the wrong lane or stop completely," he said. "We ask that pedestrians walk single file facing traffic when using the roadways."

Testers here will wind and unwind, repeatedly, 62 miles of Kevlar cable from reel to reel to simulate its use in space on the tethered satellite program.

The tethered satellite, towed by Space Shuttle, will allow observations in orbits closer to Earth than are possible through existing methods.

Manufactured by the Cortland Cable Co., Cortland, NY, the 450-pound, nonmetallic line has a 1/16-inch diameter and a breaking point of about 650 pounds.

The company started making the cable for the tethered satellite program during mid-spring, running one machine 14 hours a day, five days a week. The machine produced about five feet of cable per minute.

Donald Crouch, who heads Denver Aerospace's tethered satellite program, said "Tests are specifically designed to evaluate the flight-like hardware and the electronic systems—that is, the tether control mechanisms and the computer control electronics—to simulate system operation."

Demonstration flights for the tethered satellite system are scheduled for the Shuttle during 1987.

Peacekeeper featured in AFA exhibition

Denver Aerospace's roles in the Peacekeeper system and other elements of the country's intercontinental ballistic missile (ICBM) modernization program are featured in an audio-visual presentation at the Air Force Association (AFA) briefings and displays at Washington, D.C., September 13-15.

Denver's exhibits also include a model showing Peacekeeper basing in Minuteman silos, a scale-model Peacekeeper missile, and a panel on the MILSTAR (military superhigh frequency/extremely high frequency satellite) communications system.

Space projects are also part of the exhibit. These include the manned maneuvering unit, the external tank and aft cargo carrier, the transfer orbit stage, and the teleoperator maneuvering system.

The AFA show is attended by several thousand Pentagon and congressional staff members. Formal briefings are presented on a scheduled basis six times each day of the show.

George Horvath, Peacekeeper program development, is manning the booth for the Strategic and Launch Systems division.

On the cover

The "most successful Space Shuttle flight yet" as some officials have called it, began with a spectacular pre-dawn liftoff from Florida's Kennedy Space Center August 31. After a six-day journey of about two million miles, the spacecraft landed perfectly in the early morning hours of Labor Day at Edwards Air Force Base, CA.

Education with Industry begins 21st year

Two U.S. Air Force officers and a civilian employee of the Air Force have begun the 10-month Education with Industry (EWI) program.

This is the 21st year students in the EWI program have been assigned to Denver Aerospace.

Capt Carl R. Schweinfurth comes to the program from Offutt Air Force Base, NE, where he was budget staff officer at the Strategic Air Command's headquarters. He has been in the Air Force seven years. He holds a BS degree in commerce from the University of Louisville.

Capt Ronald T. Bartholomew was the acquisition contracting officer for the Air Force Contracts Maintenance Center of the Air Force Logistics Command at Wichita, KS, before his assignment here. He has a BS degree in applied science from Miami University and an MA in management and human relations from Webster College. He has been in the Air Force five years.

Ms Anne M. Donahue has been in the U.S. Civil Service for 13 years. Before beginning the EWI program she was a contract negotiator at headquarters of the Air Force Electronics Systems Division at Hanscom Air Force Base, MA. She has a BS degree in business administration from Northeastern University.

The EWI program is a graduate-level program administered by the U.S. Air Force Institute of Technology (Air University) at Wright-Patterson Air Force Base, OH. The program provides the student with a greater understanding of production, procurement, and management concerns shared by industry and its customers.

The students actively participate in work assignments at Denver Aerospace and are treated as though they are Martin Marietta employees.



Capt Ronald T. Bartholomew



Capt Carl R. Schweinfurth



Anne M. Donahue

McCubbin is appointed chief financial officer

Melvin A. McCubbin, a Martin Marietta vice president, will become chief financial officer of the Corporation next February upon the retirement of Charles H. Leithauser.

Leithauser, with 32 years of Martin Marietta service, has been the Corporation's chief financial officer since 1974 and has had the additional title of senior vice president since 1979.

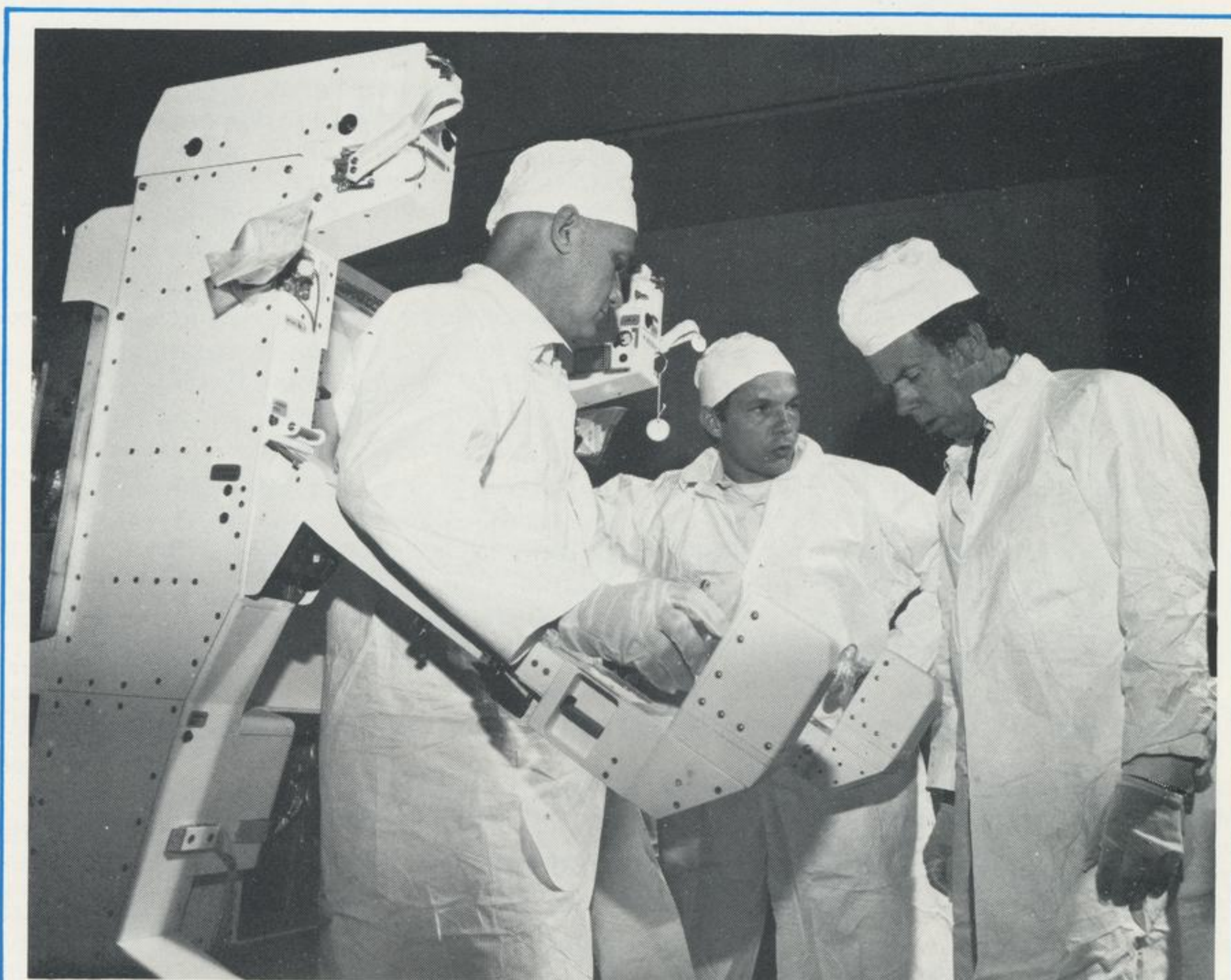
McCubbin joined the Martin Marietta financial organization 25 years ago, serving Aerospace in various capacities at Baltimore, Orlando, Denver, and headquarters until 1974 when he joined the corporate executive staff as controller. He was elected vice president in 1977.

Corporation reduces Allied's holdings

Martin Marietta Corporation has completed the first of two previously announced steps to eliminate holding of its common shares by Allied Corporation.

First step involved acquisition of 1.8 million Martin Marietta common shares from Allied. The second step, involving approximately 4.65 million shares, will be completed later this year.

These transactions are being accomplished with proceeds from common stock issued earlier, and will not change significantly the number of Martin Marietta's outstanding shares.

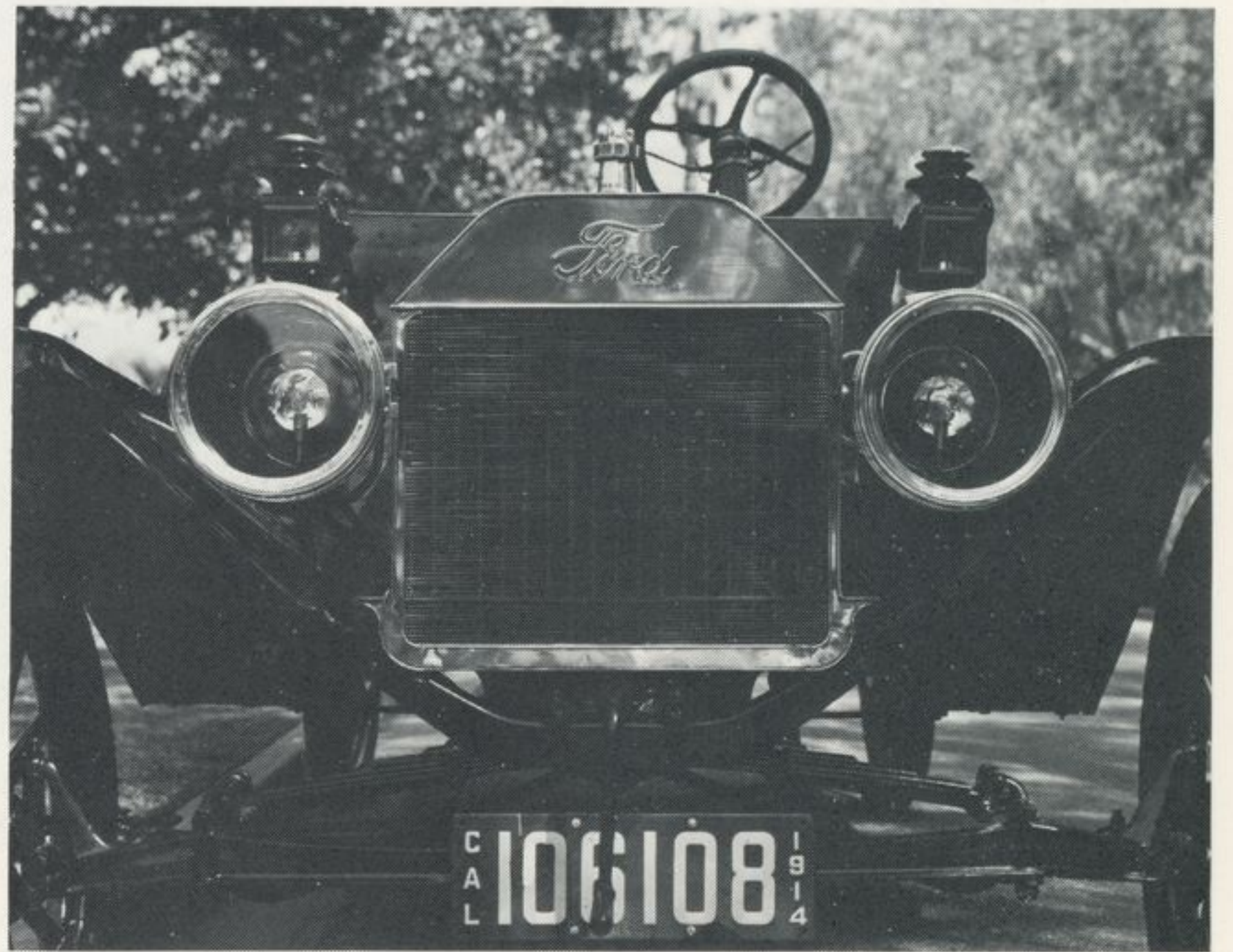


Astronaut Bruce McCandless, who will be the first man to fly the manned maneuvering unit (MMU) untethered in space, works controls on the first flight unit while Robert Stewart, another astronaut, center, and W. W. Bollendonk, MMU program manager, discuss propulsion options. The first flight article was accepted by the National Aeronautics and Space Administration from Martin Marietta late last month. McCandless, an electrical engineer and former Navy pilot, will give the MMU its debut in space during the Space Shuttle mission tentatively scheduled for January 1, 1984.



Employee photos are winners in NESRA competition

Several Martin Marietta employees won photo contest awards from the National Employees Services and Recreation Association (NESRA) earlier this year. Clockwise from right are: Wallace "Ben" Pitt's "Thomas Flyer," Larry Root's "Ford," Kenneth Beaudrie's "Spanish Ladder," Karen Lehnen's "Strawberries," and Peter Chase's "A Place Called San Simeon." Other winners in the contest included Thomas Lisec and Michael O'Reilly. Pitt, Beaudrie, and Chase each won two awards. Pitt was second in the slide division and first in the human interest class. Beaudrie was second in the open class for black-and-white prints and third in the open class for color prints. Chase was second in open class for color prints and third in scenic class for black-and-white prints.



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Call Ext. 5364 with information or suggestions for articles, or call one of the following coordinators.

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DENVER AEROSPACE
P.O. Box 179—Denver, CO 80201

September 9, 1983

Ridge Riders reschedule O-Mok-See family event

Ridge Riders Saddle Club has rescheduled the open "O-Mok-See" (an Indian term for a variety of horse racing competitions), cancelled last month because of inclement weather, to Saturday, September 24 at the company property arena.

Open to all employees, their families, and friends, events will include polebending,

keyhole, flag, barrel, and other races. Winners will receive belt buckles and ribbons.

Registration begins at noon; events begin at 1 p.m.

Call Bruce Torbeck, ext 1591; Irene Woodzell, ext 5804; Jack Swickard, ext 3179 or 4692.

Congressional Directory

EDITOR'S NOTE—The following information should be clipped for reference through upcoming Senate and House of Representatives sessions with the reconvening of Congress this month. Included are Washington, D.C. and home state addresses and telephone numbers as well as

the committee and subcommittee assignments of each senator from Colorado, California, Florida, and Louisiana, along with each representative serving constituents within a 50-mile radius of Martin Marietta Denver Aerospace facilities in those four states.

CALIFORNIA DELEGATION

Sen. Alan Cranston (D) 45 Polk Street, San Francisco 94102, (415) 556-8440; 5757 W. Century Boulevard, No. 515, Los Angeles, 90045, (213) 642-5086; 247 Senate Russell Office Building, Washington, DC 20510, (202) 224-3553.

1) Banking, Housing, and Urban Affairs Committee—Subcommittees: financial institutions, ranking minority member; economic policy, housing, and urban affairs; rural housing and development, ranking minority member. 2) Foreign Relations Committee—Subcommittees: arms control, ranking minority member; Near Eastern and South Asian affairs; East Asian and Pacific affairs. 3) Veterans Committee. 4) Democratic Policy Committee. 5) Democratic Steering Committee.

Sen. Pete Wilson (R) 880 Front Street, No. 6-S-9, Federal Building, San Diego 92188, (619) 230-0366; 450 Golden Gate Avenue, Federal Building, San Francisco 94102, (415) 556-4307; 1130 O Street, Federal Building, Fresno 93721, (209) 487-5727; 1100 Wilshire Boulevard, Los Angeles 90024, (213) 209-7543; 613 Senate Russell Office Building, Washington, DC 20501, (202) 224-3841.

1) Armed Services Committee—Subcommittees: preparedness; sea power and force projection; tactical warfare. 2) Agriculture Committee—Subcommittees: soil and water conservation; forestry and environment; agricultural research and general legislation; foreign agricultural policy. 3) Select Committee on Aging.

Rep. Robert J. Lagomarsino (R) 814 State Street, Studio 121, Santa Barbara 93101, (805) 963-1708; 2332 Rayburn House Office Building, Washington, DC 20510, (202) 255-3601.

1) House Foreign Affairs Committee—Subcommittees: ranking member of Western Hemisphere affairs. 2) Interior and Insular Affairs Committee—Subcommittees: ranking minority member of insular affairs; public lands and national parks.

COLORADO DELEGATION

Sen. William L. Armstrong (R) 311 Steele Street, No. 103,

Denver 80206, (303) 837-3645; 528 Senate Hart Office Building, Washington, DC 20510, (202) 224-5941.

1) Banking, Housing, and Urban Affairs Committee—Subcommittees: economic policy; federal credit programs; financial institutions, chairman; international finance and monetary policy. 2) Finance Committee—Subcommittees: international trade; Social Security and income maintenance, chairman; taxation and debt management. 3) Governmental Affairs Committee—Subcommittees: Civil Service; Post Office and General Services; international relations; permanent subcommittee on investigations. 4) Budget Committee—There are no longer subcommittees or task forces to this Senate committee.

Sen. Gary W. Hart (D) 1748 High Street, Denver 80218, (303) 837-4421; Room S.R. 237, U.S. Senate, Washington, DC 20510, (202) 224-5852.

1) Armed Services Committee—Subcommittees: sea power and force projection; military construction; strategic and theatre nuclear forces. 2) Environment and Public Works Committee—Subcommittees: environmental pollution; nuclear regulation; toxic substances and environmental oversight. 3) Budget Committee—No subcommittees or task forces.

Rep. Patricia Schroeder (D) 1767 High Street, Denver 80218, (303) 837-2354; 2410 Rayburn House Office Building, Washington, DC 20510, (202) 225-4431.

1) Armed Services Committee—Subcommittees: military personnel and compensation; research and development. 2) Judiciary Committee—Subcommittees: civil and constitutional rights; courts; civil liberties; administration of justice. 3) Post Office and Civil Service Committee—Subcommittees: Civil Service, chairwoman; select child, youth, and families.

Rep. Timothy E. Wirth (D) 3489 W. 72nd Avenue, No. 12, Westminster 80030, (303) 234-5200; 2554 Rayburn House Office Building, Washington, DC 20515, (202) 225-2161.

1) Budget Committee—Task forces: energy and technology, chairman; education and employment. 2) Energy and Commerce Committee—Subcommittees: telecommunications, chairman; consumer protection and finance; science and

development. 3) Science and Technology Committee.

Rep. Kenneth Kramer (R) 10394 W. Chatfield Avenue, No. 104, Littleton 80217, (303) 973-0397; 240 Cannon House Office Building, Washington, DC 20515, (202) 225-4422.

1) Armed Services Committee—Subcommittees: procurement and military and nuclear systems; ranking minority member on military installations and facilities.

Rep. Hank Brown (R) 1015 37th Avenue Court, No. 101-A, Greeley 80634, (303) 352-4112 (Greeley), (303) 837-2092 (Denver); 1510 Longworth Building, Washington, DC 20515, (202) 225-4676.

1) Interior and Insular Affairs Committee—Subcommittees: water and power resources; energy and environment; insular affairs. 2) Standards of Official Conduct Committee.

FLORIDA DELEGATION

Sen. Lawton Chiles (D) Federal Building, Lakeland 33801, (813) 688-6681; 437 Russell Senate Office Building, Washington, DC 20510, (202) 224-5274.

1) Appropriations Committee—Subcommittees: agriculture and related agencies; defense; health, and human services; education; transportation. 2) Budget Committee—No subcommittee or task forces. Ranking minority member. 3) Governmental Affairs Committee—Subcommittees: government efficiency in District of Columbia; information management and regulatory affairs. 4) Special Committee on Aging.

Sen. Paula Hawkins (R) P.O. Box 2000, Winter Park 32790, (305) 628-1738; Dirksen Senate Office Building, Washington, DC 20510, (202) 224-3041; Toll-free hotline: (800) 432-5184.

1) Agriculture, Nutrition, and Forestry Committee—Subcommittees: agricultural credit and rural electrification; nutrition. 2) Banking, Housing, and Urban Affairs Committee—Subcommittees: housing and urban affairs; securities; consumer affairs; insurance. 3) Labor and Human Resources—Subcommittees: employment and productivity; handicapped; aging.

Rep. Bill Nelson (D) 65 E. Nasa Boulevard, Melbourne 32901, (305) 724-1978; 400 South Street, Titusville 32780, (305) 268-1776; 307 Cannon House Office Building, Room 255, Washington, DC 20515, (202) 225-3671.

1) Budget Committee—Task forces: federalism/state-local relations; energy and technology. 2) Space and Technology Committee—Subcommittees: energy development and applications; space science and applications.

LOUISIANA DELEGATION

Sen. Russell B. Long (D) 750 Florida Avenue, Room 220, Federal Building, Baton Rouge 70821, (504) 389-0401; 221 Senate Russell Office Building, Washington, DC 20510, (202) 224-4623.

1) Finance Committee—Subcommittees: oversight of the Internal Revenue Service; Social Security and income maintenance programs; taxation and debt management. Ranking minority member. 2) Commerce, Science, and Transportation Committee—Subcommittees: merchant marine; surface transportation. 3) Joint Committee on Taxation.

Sen. J. Bennett Johnston (D) One American Place, No. 1510, Baton Rouge 70825, (504) 389-0395; 500 Camp Street, No. 1010, Hale Boggs Federal Building, New Orleans 70130, (504) 589-2427; 500 Fannin Street, Room 7A12, Shreveport 71161, (318) 226-5085; 136 Senate Hart Office Building, Washington, DC 20510, (202) 224-5824.

1) Appropriations Committee—Subcommittees: defense; energy and water development (public works); foreign operations; interior. 2) Budget Committee. 3) Energy and Natural Resources Committee—Ranking minority member and ex officio member of all subcommittees.

Rep. Robert L. Livingston (R) 8201 W. Judge Perez Drive, Room 102, Chalmette 70433, (504) 589-3747; 610 South Street, Room 642, F. Edward Hebert Building, New Orleans 70130, (504) 589-2753; 306 Cannon House Office Building, Washington, DC 20515, (202) 225-3015.

Appropriations Committee—Subcommittees: foreign operations; military construction.

Rep. Lindy Boggs (D) 500 Camp Street, Room 1012, Hale Boggs Building, New Orleans 70130, (504) 589-2272; 2353 Rayburn House Office Building, Washington, DC 20515, (202) 225-6636.

1) Appropriations Committee—Subcommittees: energy and water development; Housing and Urban Development-independent agencies; legislation. 2) Select Committee on Children, Youth, and Families.

Rep. W. J. (Billy) Tauzin (D) 4900 Veterans Memorial Boulevard, No. 914, Metairie 70002, (504) 889-2303; 222 Cannon House Office Building, Washington, DC 20515, (202) 225-4031.

1) Energy and Commerce Committee—Subcommittees: commerce, transportation, and tourism; fossil and synthetic fuels. 2) Merchant Marine and Fisheries Committee—Subcommittees: Coast Guard and navigation; fisheries and wildlife conservation and the environment; oceanography; Panama Canal and Outer Continental Shelf.

Astronaut featured in space symposium

A symposium on present and future space projects, featuring Astronaut Paul Weitz and Maj Gen Bernard Randolph of the Air Force Space Division, will be sponsored by the New Orleans section of the American Institute of Aeronautics and Astronautics September 23 and 24.

Friday, September 23, the program will include a tour of external tank manufacturing facilities. Presentations on U.S. space station designs and other potential National Aeronautics and Space Administration and Department of Defense space programs will follow. These include aft cargo carrier, shuttle-derived vehicles, orbital transfer vehicle, and external tank orbital applications.

Astronaut Weitz will lead the panel discussion, "Space Flight—From the Beginning," to conclude the day.

Saturday, the program will be at the University Center of the University of New Orleans and will highlight 28 technical papers presented in five sessions.

General Randolph, vice commander of the Air Force Space Division, will be the



Astronaut Paul J. Weitz

keynote speaker with "The Future of Space" at a luncheon following the technical sessions.

Michoud employees have key roles in symposium

From planning to the presentation of papers, Michoud division employees are a significant part of "Space—a Quantum Leap into Tomorrow," a symposium at New Orleans, September 23 and 24.

Robert Smith is chairman of the planning committee. Serving with him are Frank Williams, vice chairman; Paul Fitzgerald Jr., program chairman; Leon Ronquillo and Kae Martinez, publicity; J. M. Drake, financial chairman; John Magyari, publications chairman; Leon Ronquillo and Gopal Mehta, arrangements; Sam Osman, registration; and George Pfaff, who is retired, as consultant.

Ben Elam is chairing the plenary and future programs session. Presenting papers will be Thomas B. Mobley, J. R. Tewell, Samuel P. Bronson, Sherman R. Schrock (Denver), Nicholas Kooney, and Hugh Collins.

The technical session on manufacturing and quality assurance will be led by Terry Hibbard. Participating with papers will be Carlos A. Ramirez, Gerald J. Scott, Richard G. Harrington, Thomas J. Conrad, Bobby Burkes, B. N. Ranganathan, Laura J. Rowlands, and Roy D. Marrs.

Carroll R. Gray will chair the materials and thermal protection system session. Papers will be given by John P. Mills, Leon Ronquillo, Howard J. Brown, Charles Williams, M. M. Wallo, A. J. Gibbs, and Lawrence L. Hansen.

The session on space systems will be chaired by Lawrence W. Norquist. Presenters include Gopal K. Mehta, Carlos Lynch, Vincent S. Pranzarone, and Leo G. Dillon.

The test and operations session will be led by Richard G. Dutton. Those presenting papers include Dean S. Monitor, J. D. Walker, Blake Meinders, and Warren L. Gilmore.

Employee and wife to compete in national tennis tournament

Denver Aerospace employee Robert J. Wurl and his wife, Annette, will compete in the Family Challenge Cup tennis finals at Flushing Meadow, NY, September 8-10. The tournament is held in conjunction with the U.S. Open.

The Wurl's won a regional tournament at Salt Lake City to qualify for the finals. The Family Challenge Cup is sponsored by the Equitable Family Life Assurance Company.

The Wurls will be competing with 15 other teams of finalists in their category. Winners will be honored on center court at Flushing Meadow, which means the

awards ceremony may be seen on the regular U.S. Open television broadcast.

Wurl and his wife have played competitively for the last four years, winning several local tournaments, but have never been in a national tournament.

Wurl works at the South Lincoln Street facility as chief of material operations support on such programs as control, check-out, and monitoring (CCMS) for the space shuttle; missile site radar (MSR) for the Air Force; the Navy Plotter; and MARTRON. His wife works for a division of Fashion Bar.

Recreation

Computer Club—Waterton Computer Club is sponsoring a micro-computer fair Wednesday, September 14, 4 to 6 p.m. in the SSB cafeteria at the plant. Demonstrations of home and work use will be augmented by factory and local microcomputer firm representatives to answer questions and discuss employee discount programs. Call ext 7-4585.

Ski Club—The Satellite Ski Club picnic will begin at 4:30 p.m. Friday, September 16 in the Recreation Area. Food, beverages, and entertainment are free for members; \$3.00 for nonmembers. Call 977-3477.

Discount Tickets—Reduced-price tickets are available for "Sugar Babies," the roadshow version of the Broadway musical starring Mickey Rooney and Ann Miller. Reserved center orchestra seats are \$26.00 each (regularly \$28.00) for the Sunday, October 16, 2 p.m. performance. Ticket orders must be received in the Recreation office by Friday, September 9. Tickets may be picked up after September 16. See Recreation racks for order forms.

Alpine Club—Rocky Mountain Alpine Club will hold a "14's Weekend"—referring to mountains of 14,000 feet elevation or higher—with camping, backpacking, and hikes up Mts Harvard and Columbia near Buena Vista September 16 through 18. Call Lee Fryberger at ext 3198 or 4447.

Flying Club—The Titan Flyers will open to the public a film and talk on the Martin P-6 Seamaster seaplane Tuesday, September 13 at 5:00 p.m. in Room 204H at Littleton Systems Center. John Susi, who was senior co-pilot/flight engineer during the P-6 experiment and flight test program, will present the program. The Martin Marietta aviation history film *Boxkites to Bombers* also will be shown.

Employees at LSC aid blood bank

Employees at Littleton Systems Center and South Lincoln Street facilities donated 92 pints of blood during the Belle Bonfils mobile blood unit visit August 29.

Ronald Bergin, donor resources consultant for the Bonfils Center, said the donations were especially welcome in view of the Labor Day weekend when accidents create a high demand for blood.