

MARTIN MARIETTA

news

DENVER DIVISION

NUMBER 10/1975



**Air tanks
for Navy**

Division to build lightweight air tanks

A contract for 1800 composite pressure vessels to hold air to inflate Navy life rafts has been won by the division. The contract is for more than \$200,000.

The lightweight tanks weigh about one-third as much as conventional aluminum cylinders and about one-fourth as much as steel for the same storage capacity.

Developed under a NASA contract, the tanks are manufactured by completely overwrapping a high-strength aluminum liner with either fiberglass or Kevlar. Initial development was for an improved, lightweight backpack breathing system for firemen—a transfer of space technology to meet an urgent requirement in the civil sector.

The cylinders can be used to store air, nitrogen, oxygen, or inert gases and the division is pursuing other contracts. The high structural strength, improved safety, and lightweight make the cylinders useful in a wide variety of applications.

Tests have shown pressurized tanks can withstand considerable exterior damage—even gunfire penetration—without fragmenting.

The overwrapping procedure, developed by Emory Beck, is being patented by the division.

Work begins on new proposals

Work on two new proposals and on the resubmission of another began this month.

Original bidders on the Solid Rocket Boosters structures program have been asked to resubmit proposals, this time on a fixed-price incentive basis.

Due Aug. 27 is the division's proposal for systems engineering/software development for the Tactical Flag Command Center. Sperry Univac will be a team member in the proposal. Jim Sanders is the proposal manager.

Joe Keeley has been named proposal manager for the second new proposal. This one is for Phase B of Atmospheric, Magnetospheric and Plasmas in Space (AMPS).

MARTIN MARIETTA NEWS

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On the cover --

This photo of a Martin Marietta composite pressure vessel shows its ability to withstand fragmentation when subjected to 0.30 caliber, armor piercing rifle fire at a fully pressurized state of 5000 psig.

Solar study contract to aid Miami university

A contract to support a solar cooling and heating development program for school buildings has been awarded the Denver division.

The division will produce a computer thermal model and analyze data for the University of Miami. The university has an Energy Research and Development Administration (ERDA) contract to study solar cooling and heating for school buildings in subtropical regions.

Included in the systems model will be solar collectors, energy storage systems, the refrigeration device, and the building.

The one-year study could be followed by a two-year design, build, and evaluation program.

Bob McMordie is program manager for the division. Jim Kidd was proposal manager.

Energy conservation program shows progress

Division electrical energy conservation measures have reduced use 21,000 kilowatt hours a day—enough energy to supply 50 average homes for a month.

Savings have come from:

- Reactivation of lighting timers to turn lights off and on at predetermined times.
- Major rework at the domestic water pump station, substituting one 50 horsepower pump working half-time for two higher horsepower pumps working full time.
- Eliminating air conditioning in most buildings over weekends, saving about 70,000 kilowatt hours each weekend.

Employees can contribute to energy savings by letting facilities personnel know when electrical power will not be required—or when it will be required at other than normal times. Employees also can evaluate their own power needs on equipment they control and turn off equipment when not in use.

The division is planning installation of a system that will automatically monitor and control power needs throughout all buildings. The equipment should be in operation about April 1976.

Red Rocks Concert features 'Doc' Severinsen

"Doc" Severinsen, musical conductor for the NBC Tonight Show and renowned trumpet soloist, will be guest artist with the Denver Symphony Orchestra in a special concert for Martin Marietta employees and their families Sunday, Aug. 3.

The concert, to be held at Red Rocks, will begin at 7:30 pm. If it is raining, the concert will be held at the same time, but in the Denver Coliseum.

Tickets for the concert, along with maps showing routes to Red Rocks, entrances to the park, and parking areas, have been distributed to employees.

Selections on the program include *Rhapsodie Espagnole* (Ravel) and *Navarra* (Albeniz) by the orchestra; *Trumpet Concerto No. 1* (Werle), *Another Rhapsody for Now* (Werle), and *Maleguena* (Lecuona) featuring Severinsen.



Proof Test Capsule to 'fly' Viking mission to Mars

Viking soon will be on its way to Mars.

While the craft is speeding through space, an Earth-bound counterpart at the Denver division will be making the same journey, but without leaving its room in the General Purpose Labs (GPL). The Proof Test Capsule (PTC) will go through many of the same maneuvers the Viking spacecraft is performing—and doing some things the actual spacecraft probably will never do.

Here are a few of the tasks to be performed at the Proof Test Capsule facility:

- From about Sept. 1 to Dec. 1 this year, the PTC will check out changes that may be made in the pre-programmed mission computer program—before the change is relayed to the spacecraft.
- In the same period, the PTC will test the pre-programmed mission computer tape aboard the lander to determine if changes need to be made. (The PTC was used to check the tapes before they were put aboard the lander.)
- In the four months from Dec. 1, 1975 to Mar. 30, 1976 the PTC will test the ability of ground personnel to handle lander problems. Simulated problems will be created in the PTC and procedures developed to solve them should they occur on the flight spacecraft.
- A Viking Controls Mockup (VCMU) in the PTC area is an assembly of lander guidance and controls components to be used to simulate conditions on the lander as it enters the Mars atmosphere. Final approval to proceed with the landing sequence will come following a last-minute simulation of actual conditions on the lander and on Mars.
- During landing sequence, the PTC will simulate and verify all commands before they are sent to the spacecraft.
- The PTC can conduct end-to-end science tests.
- The PTC give engineers a hands-on approach to solving problems if they occur.

7,000 attend Family Day

More than 7,000 attended the Family Day at Lakeside Park July 19 for Martin Marietta employees and their families.

Free rides and amusements were provided from 10 am to 5 pm. Games and races were held for pre-teen family members. Most of those attending had family picnics at the park.

Scholarship aspirants should schedule tests

Students who will be competing for Martin Marietta Foundation scholarships for the 1976-77 academic year are reminded to register for ACT tests this fall. The test is a requirement for scholarship application.

Registration for the Oct. 18 test opens Aug. 18 and closes Sept. 22. The Dec. 13 test registration begins Oct. 20 and ends Nov. 17. Test dates are for February 1976 and June 1976 graduates.

To assure test results will be received in time to qualify for the scholarship competition, tests must be taken either in October or December.

Students should indicate the Martin Marietta code number 2801 on test registration forms.

Employees lecture at aerospace workshop

Three division employees recently served as lecturers in the annual Aerospace Education Workshop at Lowry AFB.

Joseph T. Keeley, Fitzroy Newsum, and Frank Tallentire appeared on the workshop program.

Keeley and Tallentire spoke on Skylab. Newsum discussed Viking and Space Shuttle and conducted a tour of division facilities for workshop participants.

The program was sponsored by the Air Force Association for 66 Colorado teachers.

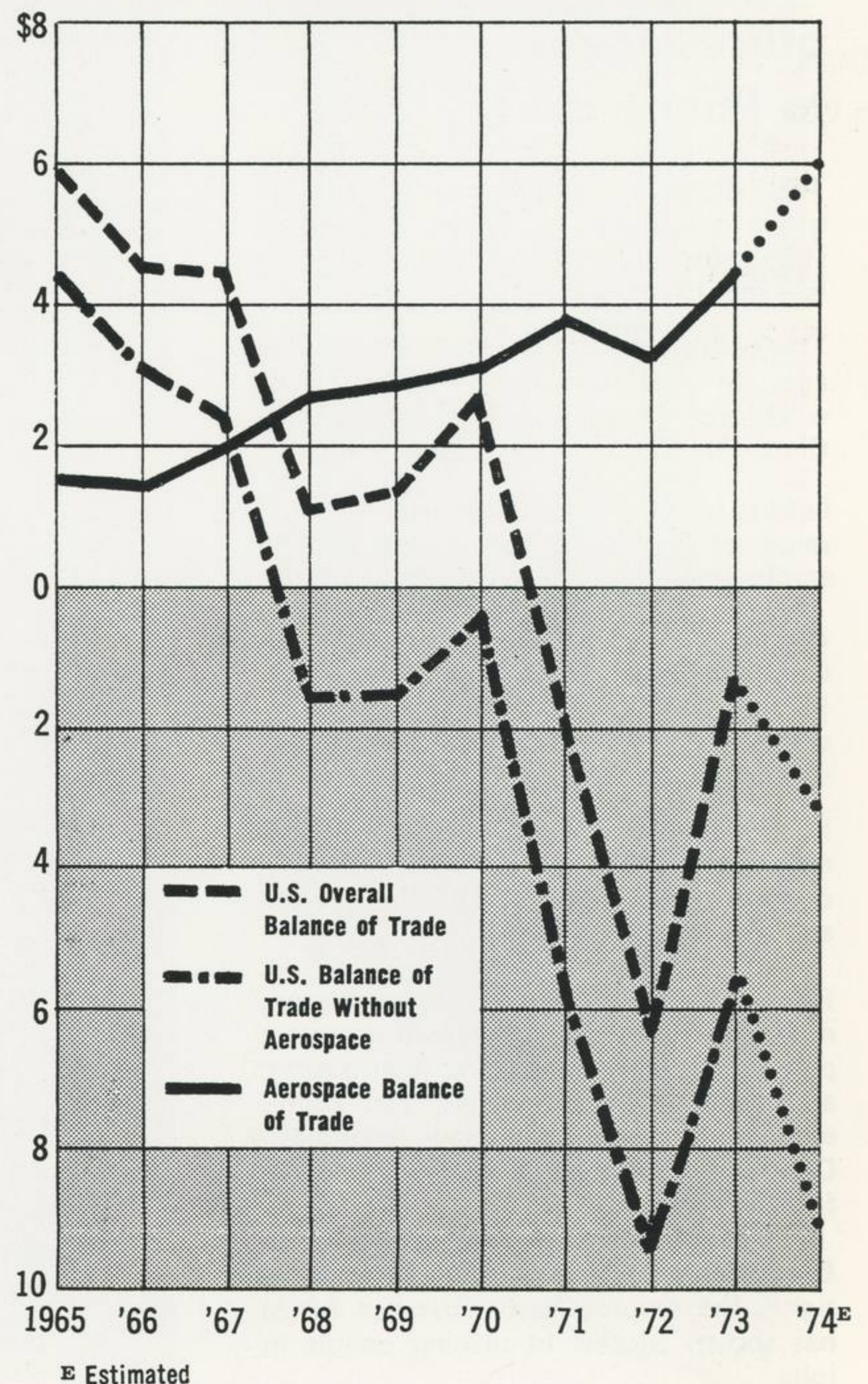
Aerospace and the balance of trade

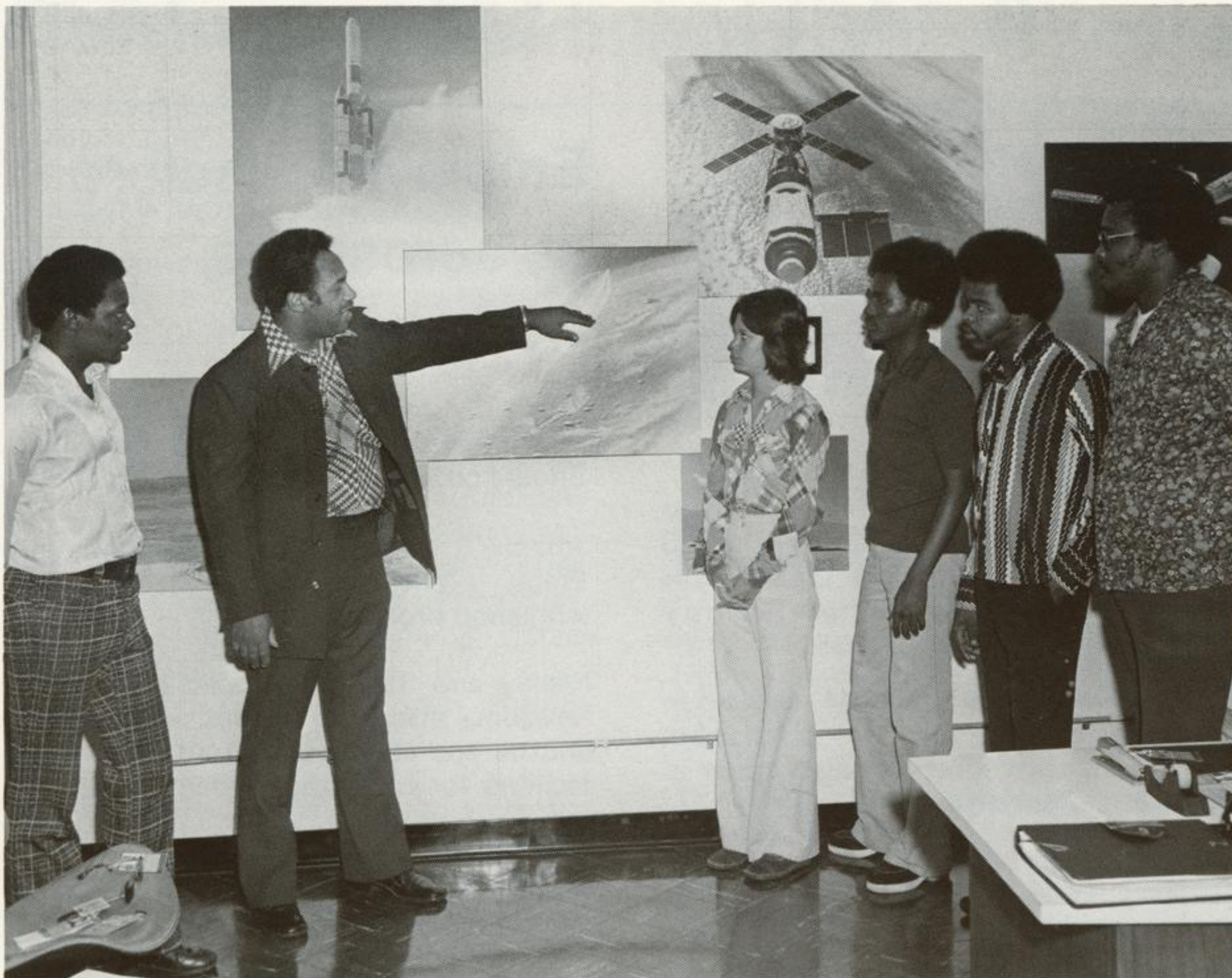
1965-1974

(In Billions of Dollars)



During the last 10 years the United States has gone from a plus balance of foreign trade of \$7.6 billion in 1964 to a \$3.1 deficit in 1974. In fact, in only one of the last four years have we achieved a positive foreign trade balance, which is so essential to our economic well being. Notably, without the significant contributions of the high-technology aerospace industry (some 80% of the aircraft flying for free-world airlines are U.S.-made) our country would have had a negative balance of trade for seven of the last 10 years. This emphasizes the need for government and industry to put the strongest possible support behind the effort to continue as the world's leader in the fields of advanced research and high technology.





Ron Hill, second from left, Canaveral Operations equal opportunity administrator, discusses pictures depicting Martin Marietta programs with student employee program participants at Cape Canaveral. The students, left to right, are Reginald Bell, Sherill C. Yoshida, Milton D. Latimer, Danley J. Baker, and Louis Washington. This is the fourth year minority and female college students have been employed during the summer in positions providing instruction and training related to college programs and career plans. The male employees are engineering students at Florida A&M University. Miss Yoshida is majoring in art at Florida State University. Hill is also general chairman of the Brevard County equal opportunity committee and a regional director for the American Society for Personnel Administration.

Employment assistance office moves to Prince street

The division's employment assistance office has moved to Prince and Alamo streets in the Littleton business district (see map).

The office, opened two and a half years ago to aid employees affected by workforce reductions, has been at Cinderella City.

Letters of appreciation confirm "the real value of the office to people seeking employment."

In the first six months of this year, 317 employees have registered with the office. In the same period, 129 accepted job offers through the office; 23 rejected offers.

Forty-two percent of those using the employment assistance office since it opened in the Fall of 1972 have received and accepted job offers.

Robert Garcia, assisted by Betty Burton, maintains the office and provides resume counseling, preparation, and distribution; arranges outside interviews; and brings employers in to interview prospects. Desks and telephone service are available for those using the office.

Even though the general job market is tight, the employment assistance office has shown success in placing people in jobs.

General Morgan To Command SAMSO

Maj. Gen. Thomas W. Morgan has been named commander of the Space and Missile Systems Organization (SAMSO) at Los Angeles Air Force Station to succeed Lt. Gen. Kenneth W. Schultz, who is retiring at the end of August. Maj. Gen. Morgan will be promoted to lieutenant general and take command of SAMSO Sept. 1.

Since November 1972, the general has been commander of the Air Force Special Weapons Center at Kirtland AFB in New Mexico. For 16 months prior to this, he had been vice commander of SAMSO.

In other assignments with SAMSO or its predecessor organizations, Maj. Gen. Morgan was involved in Titan III and Manned Orbiting Laboratory development and Thor launch activities at Patrick AFB in Florida.

He is a veteran of more than 32 years of military service, most in the research and development of missile and space systems.

Continuing Education Courses Announced

Announcement of the 1975-76 Martin Marietta Continuing Education courses has been mailed to supervisory personnel and will soon be available to all interested employees.

Courses offer employees the opportunity to broaden skills and techniques, to prepare for changes in job requirements, or to prepare for new career possibilities.

Participation in the evening program is voluntary; only charge is for books. Classes normally meet from 5 to 7 pm.

Registration forms are included in the announcement. Forms for Fall enrollment are due Aug. 18. Classes will be held from Sept. 8 through Dec. 18. Winter/Spring classes will meet from Jan. 12 through April 15.

The announcement lists possible course offerings. Actual courses will depend on the number of employees registering and availability of classrooms.

Employees should call instructors for information on specific courses.

UTC name changed

United Technology Center, producer of solid rocket motors for Titan, has changed its name.

The center's parent company, United Aircraft Corporation, changed its name to United Technologies and UTC became the Chemical Systems division.

