

NUMBER 15/1983

MMU is
exhibit
feature



Employee benefit improvements set

A major improvement in the Performance Sharing Plan and a stock ownership plan will be offered salaried employees, effective October 1, 1983.

Changes also will be instituted in the health insurance program beginning January 1, 1984.

In a letter to all salaried employees, Bobby F. Leonard, Corporate vice president for personnel, said economic trends and recent changes in tax laws prompted the improvements and modifications.

Meetings for all Denver Aerospace salaried employees have been scheduled beginning August 1 to explain the changes. (See schedule; offsite schedule will be provided locally.) All eligible employees are urged to attend so they can execute an enrollment option form.

Briefly, the Performance Sharing Plan change will give the option of treating contributions as "deferred salary," thereby reducing current income tax liability and increasing take-home pay.

The stock program stipulates each salaried employee with one year of active service as of November 30, 1983, will be given—at no cost—ownership of Martin Marietta common stock under an employee stock ownership plan.

The new health insurance plan will continue to cover the majority of medical expenses, but with an increased deductible. A new feature will be a \$500 a year "expense account" against which each employee may draw for a broad variety of medical needs.

"It is important that each employee attend the briefings," said R. E. Burnett, director of personnel for Denver Aerospace. "We will discuss each change in depth and attempt to answer all questions."

Summer blood banks help fill local need

The 134 units of blood donated to the Belle Bonfils mobile blood unit by Denver Systems Center (DSC) employees July 14 were especially needed.

"Summer is the most prolonged of two times of the year when we experience critical declines in blood donations," said Ronald Bergen, Bonfils donor resources specialist.

Bergen praised the blood drive's success, noting elsewhere only eight percent of healthy potential donors actually give, according to nationwide statistics.

"Martin Marietta employees have been splendid! They are the most consistent of our donor groups. In the past few years we've been able to expand our program at the company with consistent increases in annual contributions."

Another first for the blood bank will be the inaugural visit of the mobile unit to Littleton Systems Center (LSC), August 29.

Benefit briefings schedule

SSB—Presentation Room 613 — All Waterton Main Plant Personnel

August 2	August 9	August 16
8:00 a.m. Aa — Ar	8:00 a.m. Harr — Hid	8:00 a.m. Rao — Ri
10:15 a.m. As — Ba	10:15 a.m. Hie — Ho	10:15 a.m. Ro — Ry
1:30 p.m. Be — Bl	1:30 p.m. Hr — Johns	1:30 p.m. Sa — Sch
August 3	August 10	August 17
8:00 a.m. Bo — Bra	8:00 a.m. Johnson — Ken	8:00 a.m. Sco — Sim
10:15 a.m. Bre — Bus	10:15 a.m. Kep — Kra	10:15 a.m. Sin — Spe
1:30 p.m. But — Cha	1:30 p.m. Kre — Len	1:30 p.m. Spi — Sun
August 4	August 11	August 18
8:00 a.m. Che — Con	8:00 a.m. Leo — Lu	8:00 a.m. Suo — To
10:15 a.m. Coe — Dah	10:15 a.m. Ly — Martin	10:15 a.m. Tr — Vig
1:30 p.m. Dal — Di	1:30 p.m. Martinez — Mci	1:30 p.m. Vih — Wel
August 5	August 12	August 19
8:00 a.m. Do — El	8:00 a.m. Mck — Min	8:00 a.m. Wem — Win
10:15 a.m. Em — Fi	10:15 a.m. Mio — Mul	10:15 a.m. Wio — Zzz
1:30 p.m. Fl — Fu	1:30 p.m. Mum — Od	1:30 p.m.
August 8	August 15	
8:00 a.m. Ga — Gl	8:00 a.m. Oe — Par	
10:15 a.m. Go — Gr	10:15 a.m. Pas — Pin	
1:30 p.m. Gu — Harp	1:30 p.m. Pio — Ran	

DSC—Room 200K — All DSC, Tishman, and Westpoint Personnel

August 3	August 5	August 12
8:00 a.m. Aa — Bel	8:00 a.m. Has — Jac	8:00 a.m. Pon — Rz
10:15 a.m. Bem — Can	10:15 a.m. Jad — Koj	10:15 a.m. Sa — Sm
1:30 p.m. Cao — Cra	1:30 p.m. Kok — Ly	1:30 p.m. Sn — To
August 4	August 11	August 18
8:00 a.m. Cre — Eb	8:00 a.m. Ma — Mer	8:00 a.m. Tr — Wh
10:15 a.m. Ec — Gar	10:15 a.m. Mes — Nob	10:15 a.m. Wi — Zzz
1:30 p.m. Gas — Har	1:30 p.m. Noc — Pom	1:30 p.m.

LSC—Room 117 — All CCMS & LSC Personnel

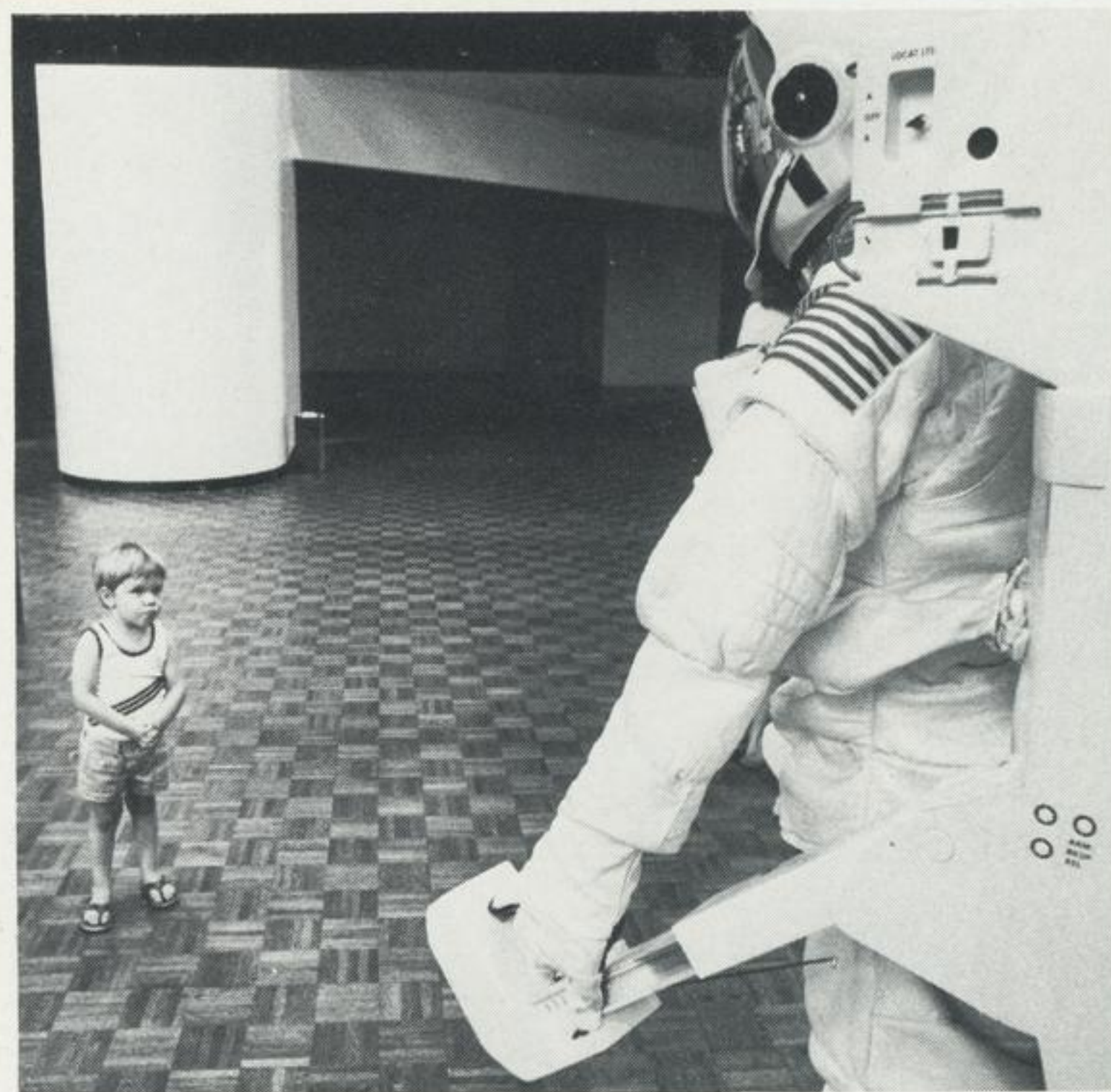
August 2	August 3	August 4
8:00 a.m. Aa — Buc	8:00 a.m. Gu — Jo	8:00 a.m. Oa — Sch
10:15 a.m. Bud — Did	10:15 a.m. Ju — Mars	10:15 a.m. Sco — Th
1:30 p.m. Die — Gr	1:30 p.m. Mart — Nz	1:30 p.m. Ti — Zzz

Greenwood Commons—Bldg 8100, Presentation Room 100

August 9	August 10	August 11
8:00 a.m. Aa — By	8:00 a.m. Ha — Joi	8:00 a.m. Pat — Schu
10:15 a.m. Ca — Du	10:15 a.m. Jok — Mat	10:15 a.m. Schw — Tr
1:30 p.m. Ea — Gu	1:30 p.m. Mau — Pas	1:30 p.m. Tu — Zzz

On the cover

A manikin outfitted with the manned maneuvering unit captures the attention of visitors to the local AIAA chapter's Space Week exhibit at Cinderella City. But none was more attentive than the young fellow in the picture at the right. He seems to be thinking, "Someday I'll wear that and walk in space, too." Or is he already exploring the outer regions of the universe in his mind?



Employment shift noted in report to management

In a recent report to management, R. E. Burnett, personnel director, predicted for Denver onsite:

- Level employment for the remainder of 1983
- Modest employment growth in the second quarter of 1984
- A continued skill mix problem with minor layoffs to achieve the adjustment
- Continued selective hiring for critical skills

Burnett, noting a shift in employment population, said "while we have had a slight decline in employment in the Denver area, offsite employment has been growing. This is an indication of two things. One, some of our major programs have moved from the development stage to the operational stage. And, two, more of our new business opportunities call for the work to be done outside Denver."

Through June, 165 employees have been laid off. However, 365 were hired.

"Those laid off generally were those whose skills were not applicable to our requirements. We don't like layoffs of any kind, but we do have to make adjustments because of business requirements."

One unwanted and unnecessary consequence of the layoffs was the number of employees who quit.

"Fear and rumor combined to cause employees to quit," said Burnett. "These employees saw the layoffs as the first of many to come. That was not and is not true. Our stable employment for the remainder of 1983 and the growth in 1984 will show that."

"Hiring people with the critical skills we need is still difficult," Burnett said. "Demands for people in electronics and software seem to be industrywide."

"We have an added element of competition. With the growth of our industry in Colorado Springs, we no longer have the attractive work climate of the state to ourselves. People who want to work in Colorado have a choice, and many of them are choosing companies in Colorado Springs."

"Change is a major part of the Denver Aerospace business and as long as we have change, we will have minor layoffs. We will continue to hire people with the skills we need, and we will diligently search for people in the critical skills area."

"One thing employees should keep in mind is that we see no catastrophic layoffs—instead we see modest growth. Fear and rumor are disturbing, but neither should be a reason for a good employee to quit," he said.



Employee of the month honors were accorded Roman J. Matherne Jr. for his work on Peacekeeper. A plaque was presented by Peter B. Teets, vice president and general manager of the Strategic and Space Launch Systems division.

Employee honored for work on Peacekeeper

Contributions to the first Peacekeeper test launch have earned Denver employee of the month recognition for Roman J. Matherne, Jr.

He received a cash award, an employee commendation, and an engraved plaque with a companion desk pen set from Peter B. Teets, vice president and general manager of Strategic and Launch Systems division. Matherne also will have special executive parking privileges for 30 days.

Matherne, group lead for instrumentation flight safety system/airborne (aerospace) vehicle equipment (IFSS/AVE), was honored for his dedication to the design, building, and testing of 23 airborne instrumentation and flight safety system components that were critical to the missile's successful test flight.

The commendation reported "his efforts during the past 18 months displayed extraordinary skill and diligence in the face of continuing development, building and test problems. His personal efforts and abilities resulted in critical equipment deliveries to support the launch as well as quality hardware that supported two weeks of pre-launch activity."

Library acquires AIAA papers

The research library has a standing order for papers from American Institute of Aeronautics and Astronautics (AIAA) technical meetings, said Jay McKee, company librarian.

New acquisitions stored on microfiche and accessible on library viewing and reproduction equipment are: International Air Transportation Conference; 21st Aerospace Sciences Meeting; 7th Marine Systems Conference and Technical Display; 8th Aeroacoustics Conference; 24th Structures, Structural Dynamics, and Materials Conference; and 18th Thermophysics Conference.

Senate, House ok Peacekeeper

Editor's Note: This column will appear periodically in Martin Marietta News to report Senate and House of Representatives voting on issues of special interest to Denver Aerospace and to its employees. Home office addresses and telephone numbers of each state's two senators and its members of the House are listed in the local telephone book's U.S. Government listings under Congress, Senate and Representatives.

The Republican-dominated Senate voted 58-41 Tuesday, July 26, on a measure earmarking \$2.5 billion in the defense budget to build 27 Peacekeeper intercontinental ballistic missiles and to deploy them in underground silos in Wyoming and Nebraska. The Democratic-controlled House of Representatives Wednesday, July 20, passed a similar measure, 220-207.

Voting breakdown by state delegation representatives whose constituencies are within a 50-mile radius of major Denver Aerospace facilities and each state's two senators: Colorado: For—Reps. Kenneth R. Kramer Dan Schaefer and Sen. William L. Armstrong (all R) Against—Reps. Timothy Wirth, Patricia Schroeder and Sen. Gary Hart (all D).

California: For—Rep. Robert J. Lagomarsino and Sen. Pete Wilson (both R). Against—Sen. Alan Cranston (D). Florida: For—Reps. Bill Nelson (D), Sens. Paula Hawkins (R) and Lawton Chiles (D). Against—None within 50-mile radius. Louisiana: For—Reps. Robert L. Livingston (R), Lindy Boggs and W. J. (Billy) Tauzin (both D); Sens. Russell B. Long and J. Bennett Johnston (both D). Against—None within 50-mile radius.

Alumni to observe school's anniversary

Baltimore Polytechnic Institute alumni at Martin Marietta will honor the 100th anniversary of the school and the thousands of graduates employed by the company.

A group at the Baltimore division is compiling a list of names and addresses of those alumni. Information may be sent to Harry Mettee, Mail Point 48; Edward Mitchell, Mail Point 17; Thomas Dunworth, Mail Point 375; or to Elmer Soistman, Mail Point 35 at Martin Marietta Aerospace, Baltimore Division, 103 Chesapeake Park Plaza, Baltimore MD 21220.

SURGE registration deadline is set

Registration for the SURGE program, which offers graduate engineering and business programs through Colorado State University, must be completed by Friday, August 5. Campus classes begin August 31, and Denver Aerospace classes begin September 7.

Courses are offered on videotape at company facilities. Supporting courses in computer science and mathematics also are available.

Information and registration forms are available from the educational services office, Eng. 231.

Junior Achievement seeks advisers

Volunteer advisers for Junior Achievement (JA) companies are needed for the 15-week semester beginning in September.

Employees with administration, sales, finance, or production experience are needed to help high school students learn business in a hands-on environment.

Adviser training is provided. Details from Lori Sharp, JA coordinator, Ext. 6750 or 6605.



Hot dogs, balloons, and music were featured at a lunch-time picnic thanking employees on the Titan program for their successful work on the project.

Titan employees earn 'thank you' picnic

Titan employees gathered on the Greenwood Commons lawn for a picnic lunch July 14. The event honored successful team efforts on recent Titan 34D launches.

"When you talk about the success of the aerospace industry, Titan is the benchmark," said Donald L. Plomondon, Titan mission success manager. "There is no magic in the success of the Titan—the success is due to the people."

More than 600 Titan employees attended the barbecue—complete with balloons bearing the slogan, "Titan does it Best," and Dixieland music.

Four of the jazz group members are company employees. William Scott, Peacekeeper, on clarinet; Nate Lashaway, Peacekeeper, tuba; Robert Stevenson, mission analysis, drums; and Decker Westerberg, mission analysis, on banjo.



Portraits of several generations of the Herrera family are on display in the Denver Art Museum's List Gallery exhibition "Peter Hurd: Insight to a Painter." David Herrera, right, and his father, Felix, stand in front of a painting of David's grandfather. David Herrera works for Martin Marietta Data Systems here. Felix Herrera and his brother and sister were also subjects of Hurd paintings that capture the beauty of Southwestern America.

Martin Marietta completes Mathematica acquisition

Martin Marietta has announced acquisition merger of Mathematica, Inc., a Princeton NJ computer software company, following approval July 22 by holders of approximately 79 percent of shares entitled to be voted.

Outstanding shares of Mathematica common stock were converted into the right to receive \$27 cash or into a 0.4689 share of Martin Marietta common stock.

Mathematica will be operated as part of Martin Marietta Data Systems.

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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

July 29, 1983

Eighth Shuttle mission set for late August

The five-day mission of the eighth Space Shuttle begins with a predawn liftoff and ends with a night landing on the desert lakebed runway at Edwards Air Force Base, CA.

Launch is scheduled for 2:21 a.m. (EDT) Saturday, August 20 from Florida's Kennedy Space Center. The landing will be about 12:45 a.m. (PDT) Wednesday, August 24.

Richard H. Truly, pilot on the second Shuttle mission, will command the flight with Daniel C. Brandenstein as pilot. The three mission specialists are Dale A. Gardner, Dr. Guion S. Bluford, Jr., and Dr. William E. Thornton.

Primary cargo aboard the orbiter Challenger will be the INSAT 1-B, an Indian multipurpose telecommunications/meteorology spacecraft to be deployed the second day.

Also aboard will be 12 Getaway Special canisters, eight containing specially

stamped postal covers. The other four contain experiments to study making snow in space, gather contamination data, record exposure levels from Challenger's cargo bay on ultraviolet film, and determine whether high-energy particles in space cause errors in memory-type integrated circuits.

A Shuttle Student Involvement Project will evaluate whether biofeedback training learned from Earth can be implemented successfully in space's zero gravity.

Additional mission tasks include testing the payload deployment and retrieval system, using the remote manipulator arm and an 8500-pound test article; separating living cells using the continuous flow electrophoresis system; and recording effects on various Shuttle materials of oxygen atoms that bombard the vehicle in orbit.

Several medical tests will collect additional data on physiological changes associated with space adaptation syndrome.



U.S. Air Force contractor recognition award is presented to Andrew J. Hall, right, chief of space launch complex 4 of Denver Aerospace, by Maj Gen Jack L. Watkins, commander of the First Aerospace Division at Vandenberg Air Force Base. Hall was the only civilian contractor honored at ceremonies July 8.

Air Force honors Vandenberg employee

Andrew J. Hall, chief of space launch complex 4 (SLC-4) for Denver Aerospace, was named contractor of the year by the U.S. Air Force at Vandenberg Air Force Base, CA.

Hall, test conductor on a series of Titan launches from Vandenberg, was honored July 8.

Maj Gen Jack L. Watkins, Vandenberg commander of the First Strategic Aerospace Division, congratulated Hall for a "... superb record of contributions over a period of more than 16 years of consecutive successful Titan launches."

Hall had the key Denver Aerospace responsibility for eight Titan III launches. Overall, he has participated in 86 successful Titan launches at Vandenberg. Before joining Martin Marietta, Hall was an electronic and instrumentation technician for Rocketdyne and was responsible for installation, modification, operation, and maintenance of instrumentation equipment required to accumulate data on rocket engine static firings.

Hall's performance as an aerospace engineer with Denver Aerospace has resulted in many letters of commendation, and he received the Gold Medallion Award for launch readiness.

Corporation to acquire Set Products, Inc.

The Corporation has entered a preliminary agreement to acquire Set Products, Inc., of Cleveland as part of Martin Marietta Chemicals company. The transaction is valued in excess of \$9 million.

Privately held, Set Products manufactures and markets a number of specialty products, including Set-45 highway patching material.

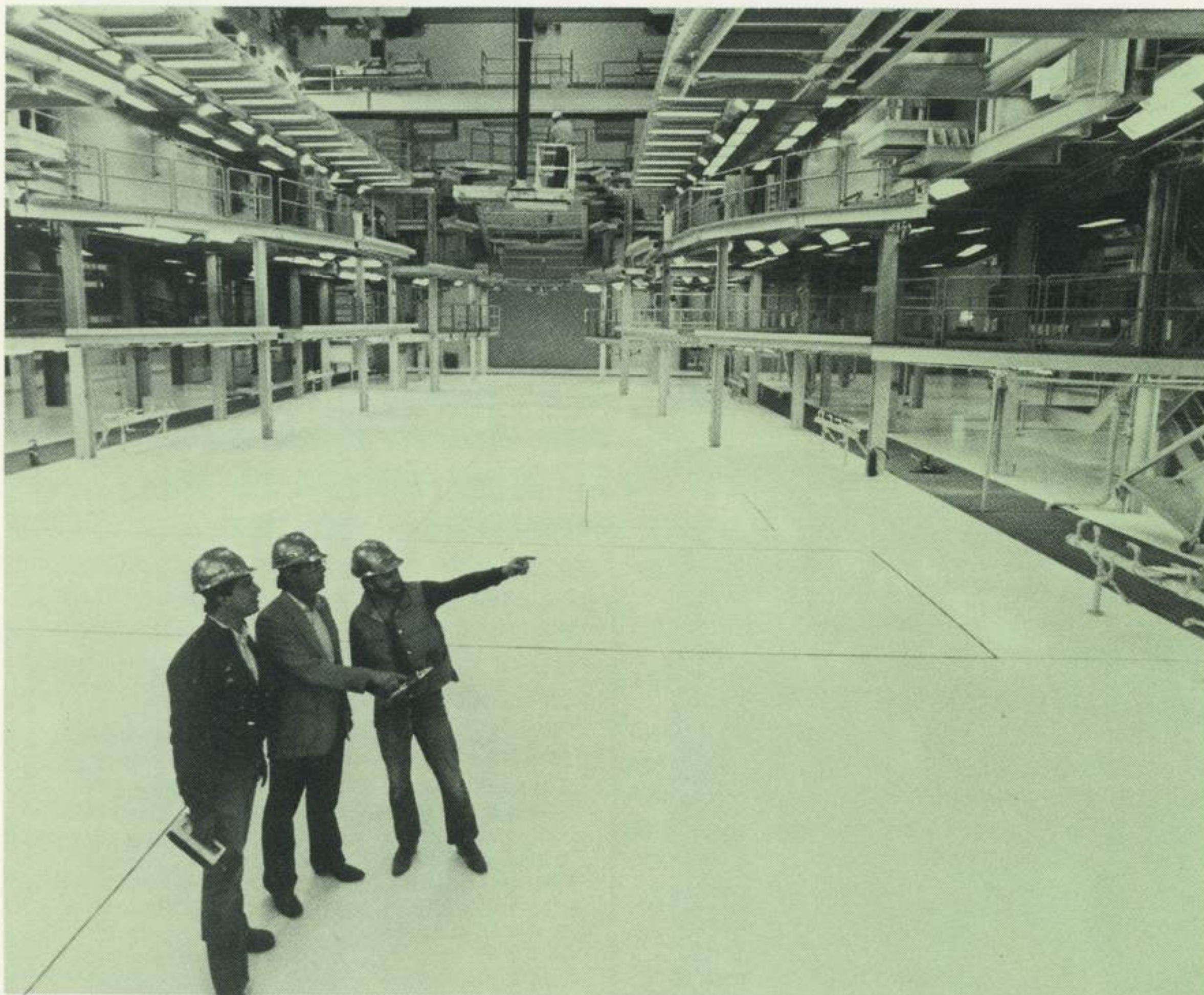
National Safety Council honors employees at KSC

External tank operations at Florida's Kennedy Space Center has won the coveted National Safety Council Award of Honor for the second consecutive time in the airport and flying fields category.

The award, covering May 8, 1979 through December 31, 1982, recognizes the

2,057,849 hours worked without an occupational injury or illness requiring days away from work during that two-year, seven-month period.

Howard C. Robbins, chief of safety, accepted the award on behalf of all employees.



Checking cable and conduit routes in the orbiter maintenance and checkout facility (OMCF) at Vandenberg Air Force Base are John VanGalio, left, field engineer for security integration; Dennis McCarthy, center, chief of communications security; and Gary Staggs, right, field engineer for payload integration. OMCF will be used for internal and external inspection, maintenance, and checkout of the orbiter when Space Shuttle operates from Vandenberg.

Huntsville operations developing tank manufacturing technology

Huntsville operations and advanced technology are contributing significantly to increased productivity and reduced costs in several areas of external tank operations at the Michoud division.

Working with the National Aeronautics and Space Center's (NASA) Marshall Space Flight Center (MSFC), Huntsville employees have produced exciting results in such varied areas as welding techniques and robotics.

Automated devices soon will spray foam insulation uniformly on the liquid hydrogen tank, which will prevent lumping and, therefore, reduce aerodynamic problems. Huntsville specialists also are improving the overall foam insulation to protect the external tank from temperature extremes.

New computer-controlled welding methods will provide more accurate, faster ways to weld the various thicknesses of aluminum panels on the external tank. Another development—plasma arc welding—is expected to eliminate costly machining now done by hand, explained J. Frank Sexton, welding engineer.

Sexton said replacing tungsten inert gas (TIG) welding with plasma arc welding would eliminate internal defects, thereby reducing the need for repairs on each weld.

Because more than one-half mile of weld bonds the intertank, oxygen, and hydrogen tanks, reducing work and time spent checking each weld is crucial to producing 24 tanks a year—the projected rate of 1988 production.

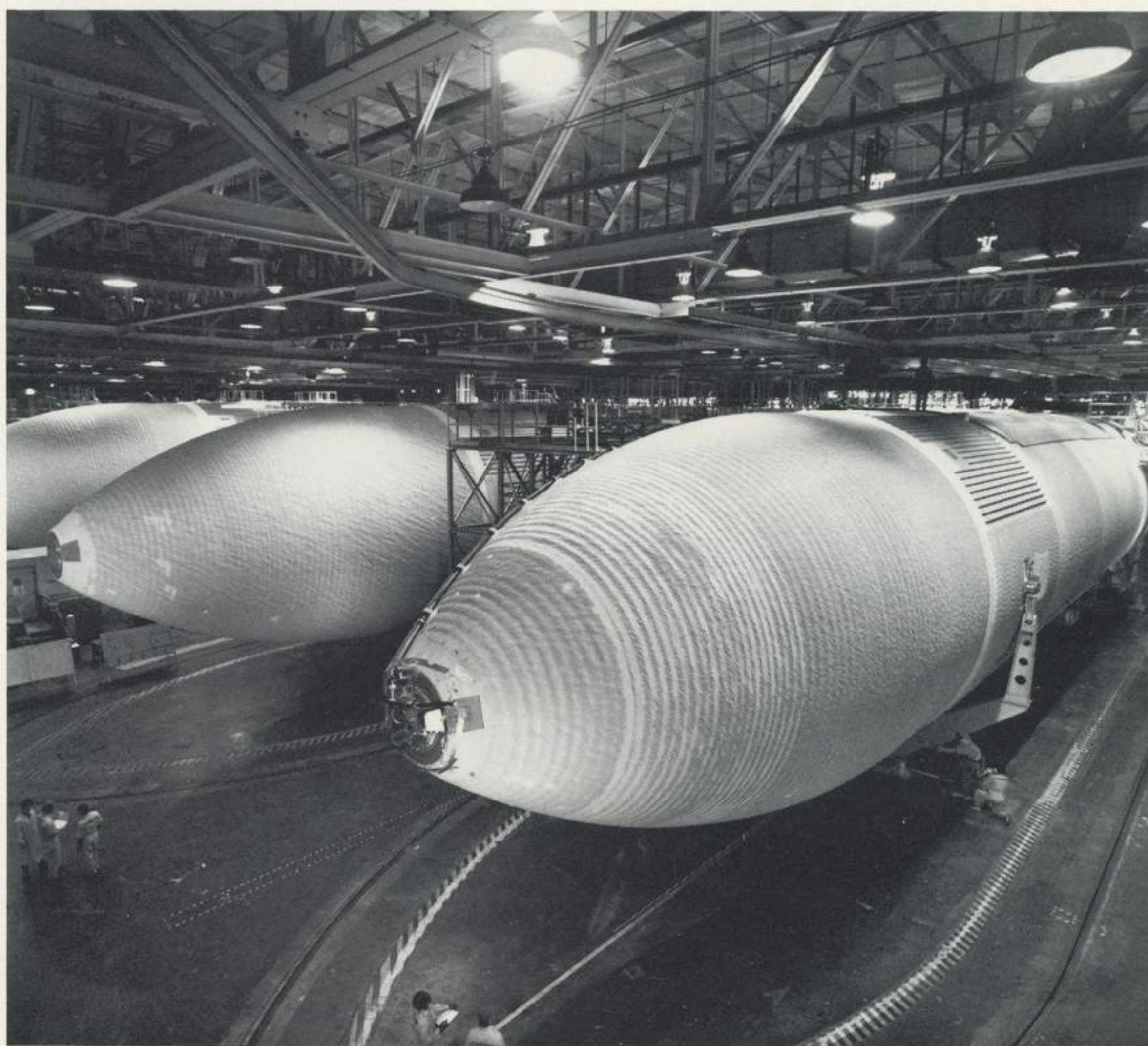
"To meet that rate, we expect plasma arc welding to reduce time spent cleaning and preparing surfaces," said Anthony J. Andreoni, manager of Huntsville operations. "We may not have to X-ray the weld afterwards."

Some time also is saved because plasma arc welding requires fewer passes, explained Sexton, noting "you need at least three passes with TIG welding. We're looking at a cleaner and stronger weld with just one or two passes with plasma arc welding."

NASA recently modified a high-bay facility at MSFC to accommodate full-scale plasma arc weld activities. The facility was used earlier for vertical assembly of the Saturn S-1C rocket stages and, later, during 1975, for early development of spray foam tooling for the external tank.

The full-scale weld fixture was designed at the Michoud division to simulate the hydrogen barrel weld tool. It will permit development of plasma arc welding and tooling without interrupting production.

"It's significant that the tool will be in operation in less than a year after go-



The division is ahead of production schedule, and for the first time three nearly completed Space Shuttle external tanks are worked side-by-side at Michoud. Eight other tanks are in various stages of assembly at Michoud and three completed tanks are at the Kennedy Space Center being prepared for Shuttle launches this year. External tank production has been increased to meet higher Shuttle launch rates. By 1988, the division will be producing 24 tanks each year.

ahead," said James T. Hudson, deputy manager of Huntsville operations.

Michoud and MSFC tool and weld development engineers will evaluate new concepts on the fixture for adaptation to other production weld tooling. That will allow the quality department to explore and develop advanced nondestructive evaluation concepts for online automated weld inspection.

As part of the overall effort to increase productivity, a Cincinnati Milacron robot, programmed with a turntable, simulates production spray cell tooling. Foam can be applied under temperature/humidity conditions consistent with production foam sprays at Michoud. The simulation minimizes production uncertainties. Huntsville employees have operated the robot on simulated tanks for 18 months with excellent results, including the foam's adherence and uniformity of application.

At Michoud, a foam is being used on the aft dome of the hydrogen tank that is less dense, easier to apply, and less expensive than the superlight ablator it replaces. The new foam has been used on the fourth lightweight tank.

"Improved foam development may save \$50,000 per flight and about 200 pounds per tank," estimated Andreoni. "With the aft dome development complete, we are directing our attention to application of the new foam to other areas of the tank."

Developments with net mold injection methods also will make foam easier to form. The technique, known as RIM—reaction injection molding—mixes the new foam automatically and injects it into a net mold. When perfected, the process will eliminate hand mixing, pouring, and manual trimming and further reduce the superlight ablator.

"The new foam is still in the development phase," said Cecil Childress, Huntsville group engineer. "But it's gratifying to see our first foam development activity already implemented into lightweight production."

Performance Sharing Plan June unit values set

Unit values for the Performance Sharing Plan as of June 30, 1983, were: Fund A (Indexed equity): 2.2894040145 Fund B (Fixed income): 1.7178917287 Fund C (Martin Marietta Stock Fund): 2.5210059351