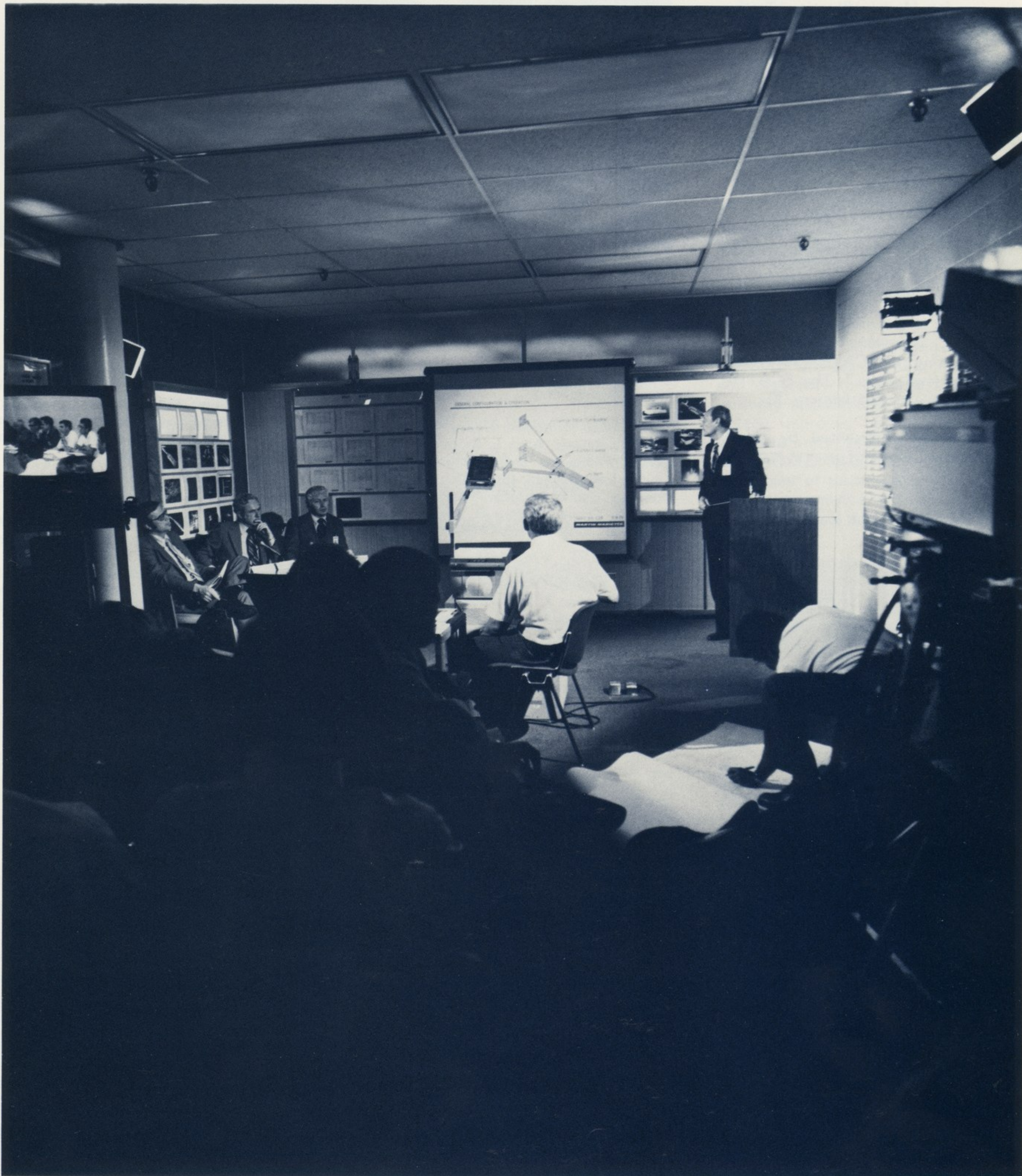


**NUMBER 7/1979**



# Four get top honors at Annual Awards Banquet

Four employees were singled out for top honors at the Annual Awards Banquet May 11. The banquet was held in the grand ballroom of the Marriott Hotel.

Recognized as the author of the year was George Morosow for his paper, *Force Apportioning for Modal Vibration Testing Using Incomplete Excitation*.

Theofanis G. Gavrilis was selected inventor of the year for "sustained outstanding inventive contributions in support of the Denver division's major spacecraft programs and for his significant contributions to the division's industry credentials in antenna technology."

Engineer of the year was Robert O. Lewis Jr. for his "outstanding achievements in electromagnetic interference and compatibility on SCATHA."

The top operational performance award was presented to Donald E. Hobbs for his "outstanding achievement for successfully completing the SCATHA subsystem and system level tests." The SCATHA spacecraft was launched January 30.

The awards were presented by C. B. Hurtt, vice president and general manager of the division.

Other employees honored were:

## Publications:

*Distinguished Contributors:* Lyle E. Bareiss; James R. Beall; Robert A. Booker; Benton C. Clark III; Donald S. Crouch; Wilfred L. DeRocher; Milton A. Hetrick; Richard F. Hruda and Paul L. Jones; C. Edward Kirchhoff; Morosow; Sidney L. Russak and John C. Flemming; and Eric L. Strauss.

*Honorable Mention:* Donald A. Bolstad and Mohan S. Misra; William R. Britton (two awards); Harry R. Carroll; Angelo J. Castro and Benton C. Clark III; Jackson D. Dennis and Thomas A. Mottinger; Richard L. Donovan and Sidney Broadbent; Richard L. Donovan, Hal C. Hunter, James T. Smith, and Sidney Broadbent; Edward A. Euler; Charles A. Hall; Milton A. Hetrick Jr., and Deborah A. Strange-Jensen; Matthew S. Imamura, Robert L. Moser, and Lee A. Skelly; William J. Kacena III; Ronald L. Kirlin; Gene J. Lang; Fredrick E. Lukens; John W. Lear; John W. Lear and Matthew S. Imamura; William L. Marcy; Robert K. McMordie;

Robert J. Molloy, J. Robert Tewell, and Richard A. Spencer; George Morosow; Joseph A. Muscari; Joseph A. Muscari, Roy O. Rantanen, and Nancy J. Pugel; Jimmie D. Osborn; William J. Owen and Robert A. Booker; John T. Polhemus; Aaron N. Silver; Elvis D. Simon; James R. Tegart; J. Robert Tewell and Richard A. Spencer; Preston E. Uney and Richard G. Peterson; Richard E. Wachs and Michael J. Corrigan; Virgil F. Young and David D. Wilson.



Four employees singled out for top honors at the awards banquet received their awards from C. B. Hurtt (center), vice president and general manager. Receiving awards were Donald E. Hobbs (left), Dr. George Morosow (second from left), Robert O. Lewis Jr. (second from right), and Theofanis G. Gavrilis (right).

## Inventor

*Outstanding Contributors:* Gavrilis; Roy J. Heyman; Wayne E. Simon.

*Distinguished Contributors:* Lester A. Allen Jr., James C. Beblavi, Allan L. Brook, Neil J. Butterfield, William B. Collins, John J. Cozzens, Frederick W. Dawson, Cheng Donn, Richard L. Donovan, Donna P. Gober, David N. Gorman, David N. Grover, Willard R. Haas, Murlin T. Howerton; John R. Lager, Robert O. Leighou,

Matthew Ti Hua Liu, Frederick E. Lukens, James H. Masson, Thomas E. Nelson, William L. Newcomb, Alvin T. Sheppard, Leonard Silbert, Wayne E. Simon, Walter F. Thiemet, Donald A. Thomas, Gordon K. White, Jack E. Wilterding, Thomas E. Zaczek.

## New Technology

Peter W. Abbott, Wilfred L. DeRocher Jr., Richard L. Donovan, Joseph F. Froechtenigt, Milton A. Hetrick Jr., Matthew S. Imamura, Gilbert M. Kyrias, John R. Lager, Dan Padilla, Kenneth R. Payne, Raymond O. Rantanen, Ernest B. Ress, Walter F. Thiemet, Donald A. Thomas, Howard M. Thomas, Robert O. Zermuehlen.

## Technical Achievement

Louis L. Aldrige, David R. Barnett, James R. Beall, Ernest Berliner, Richard P. Brier, James A. Davidson, Ralph N. Eberhardt Jr., Richard R. Foll, Melvin W. Frohardt, Pete J. Gannon, David N. Gorman, Matt M. Grogan, Dan G. Howard, John B. Hurley, Burt M. Imber, Donald E. Kendall, Bruce D. Kennedy, C. Edward Kirchhoff, Robert L. Knickerbocker, Robert O. Lewis Jr., T. Dean Lucas, John F. McGehee,

John E. Montague, Loman T. Park, Ken L. Richardson, Elvis D. Simon, Wayne E. Simon, Duane W. Smetana, Thomas R. Tracey, Robert D. Vaage, C. E. Velez, Joseph M. Vellinga, Robert D. Westervelt, William R. Woodis, Virgil F. Young, Gerald A. Zionic.

## Operational Performance

Joseph A. Beacon, Harold C. Burgan, Rodney S. Cooper, Paul L. Dalton, Keith B. Davis, Hixon M. Elliott, Wendell E. Fields, William A. Fraser, Barbara E. Gomnes, Donald G. Gray, Donald E. Hobbs, George E. Hoerter Jr., James F. Hughes, William J. Hughes.

John E. Klimpton, William J. Kiraly, Raymon C. Koch, Floyd L. Kohut, Paul G. Lamb, Donald N. Loats, Alva V. Martin Jr., V. Dale Massey, Charles B. McClure, James J. McDonald, Ray Meunier, Keith P. Natzke, William R. O'Halloran, Eddie C. Peabody, John H. Pond, Robert E. Prudhomme, James M. Ritz, Mickey B. Sanderson, Kenneth H. Schlichtemeier, Robert W. Smith, Robert H. Snodgrass, James A. Sterhardt, Ralph L. Stewart, Richard J. Stoner Jr., Leonard G. Taigman, Merriam Trube, Thomas C. Wirth.

Committees making the selection of those to be recognized were:

*Publications:* Wilfred L. DeRocher Jr., Edward A. Euler (chairman), Charles H. Green Jr., George E. Heyliger, James H. Kidd, and Mary Macneal (secretary).

*Inventors:* Robert A. Bena, Robert B. Bolles (chairman), Reid H. Clausen, Cleve F. Claxton, Phillip L. DeArment (secretary), Charles A. Hall, Wilfred L. Kershaw, Anella Knoke, and Josephine E. Salazar.

*New Technology:* Robert B. Blizard, Anella F. Knoke, John R. Lager, and Ward D. Rummel.

*Technical Achievement:* James L. Burridge, Reid H. Clausen, Charles A. Hall, John M. McCorkle, George W. McGee, Albert R. Schallenmuller, Peter B. Teet, and James R. Trawick.

*Operational Performance:* Harry J. Baum, Albert E. Hawkins, Walter O. Lowrie, and Richard E. Weber.

## Special parking, standard work day could aid carpooling

Preferential parking and a standard work day—the elimination of unplanned overtime—would be the greatest incentives for carpooling, according to employees responding to the carpool survey published in the last issue of *Martin Marietta News*.

Roy Yamahiro, manager of training, education, and employee development, who has been assigned to develop carpool programs, said more than 30 employees responded to the survey during the first week.

"Those participating in the survey said preferential parking would be an incentive to carpooling," Yamahiro said. "However, the biggest obstacle to carpooling cited by employees was the 30 to 45 minutes of unplanned overtime employees are sometimes asked to work."

Interest in carpooling is growing at the division. Response to the survey and a recent main gate count are proof of that interest. Forty percent of the people working at the main plant arriving by car were sharing rides. A similar count in late February showed more than 30 percent were in carpools.

As a result of this growing interest, a program is being evaluated that may include:

- Parking spaces exclusively for carpools
- Advance notice for overtime work
- Arrangements to provide rides to stranded carpools

## CCMS equipment delivered to Vandenberg AFB

The Denver division passed a major milestone in the preparation of space shuttle facilities at Vandenberg Air Force Base last month with the turnover of newly installed checkout, control, and monitoring subsystem (CCMS) equipment to the Air Force.

The equipment will be used to develop programming for the checkout of the shuttle transportation system at Vandenberg. It is identical to the CCMS equipment in place at Kennedy Space Center, FL.

In addition to the software development team, the division will deliver and install two other sets of CCMS electronics. Installation at North Vandenberg is scheduled for the fourth quarter of 1979 and at the launch complex at South Vandenberg in late 1980.



Public Service Satellite Consortium van contained transmitting and receiving equipment for the two-way satellite communications for the critical design review.

## Design review is conducted by satellite

Critical design reviews are "business as usual" for the Denver division. However, the design review of a launch site boom retract mechanism at Vandenberg Air Force Base was unique.

Such reviews are normally held at the customer's facility or here at the division, with one contingent of the review team traveling to the review location. In this instance, neither contingent traveled. Those involved in Denver, stayed in Denver; those involved at Vandenberg stayed at Vandenberg.

Using the communication technology satellite (CTS), the review was conducted by two-way television and voice between Colorado and California. The teleconference was arranged by the Public Service Satellite Consortium on its national satellite network, using CTS, the most powerful communications satellite in the world.

The satellite is jointly owned by the National Aeronautics and Space Administration and the Canadian Department of Communications.

Conference rooms at Denver and at Vandenberg were equipped with two television cameras, monitors, and microphones, permitting almost face-to-face communication among participants. Outside each building, a 35-foot bus was used as a satellite communications earth station. The portable earth terminal housed transmitting and receiving equipment, with an eight-foot parabolic antenna mounted on the roof of the vehicle.

"We believe satellite communication can

reduce the cost of critical design reviews and similar conferences," said Thomas A. Godwin, experiment supervisor for the Denver division. "Just eliminating travel is a significant savings."

To an outsider, the television program was far from entertaining. To those who were participating, the critical design review by television was comparable to one in which all parties are in the same room. The objectives of the review were met and work on the launch site boom retract mechanism is progressing normally.

### On the cover

In Denver, this photo of the studio-conference room for the critical design review shows one of the television cameras, a monitor displaying activity at Vandenberg Air Force Base, and local participants. At the screen is John C. Hupp. Panels members, at left, are Sidney L. Tolbert, John M. McCorkle, and Jerome A. Ballantine.

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May 1979



*Dale Baxter, center, executive director of the Junior Achievement (JA) program in Denver, discusses JA activities with Fitzroy Newsum (right) division manager of civic liaison, and George McGee (left) director of quality. Newsum presented a check from Martin Marietta for the Corporation's 1979 financial support of the Junior Achievement program in the area. McGee is a member of the board of directors of JA. In addition to the financial support, the division sponsors four Junior Achievement companies, providing advisers for the teen operated companies.*

## Inventors earn awards, patents

Eight employees have received cash awards for their inventions and five have been issued patents as well as cash awards for their inventions.

Those cited by the product development review board for inventions are:

Dr. Cheng Donn, electronics: Minimum-blockage shaping concepts for shaped dual reflector antenna systems.

Richard L. Donovan, electronics: Electronic circuit for Sun sensing and tracking.

Jack E. Wilterding and John L. Cozzens, electronics: Digital integrating/autocorrelator.

William B. Collins, Frederick E. Lukens, and James H. Masson, electronics: Micro-processor automated high-efficiency battery control system.

Allan L. Brook, systems engineering: Image rendezvous and docking.

Those who have received United States patents on their inventions and cash awards are:

Ludwig G. Wolfert, electronics: Electronic alpha particle counter.

Roy E. Groff, engineering mechanics: Optically black coating and process for forming it.

Donald A. Stang, engineering mechanics: Parabolic mirror construction.

Kenneth A. Karki, engineering mechanics: Process for forming optical black surface and surface formed thereby.

Edward J. Miller, electronics: Resonant switching converter.

### Recreation Calendar

*Lady Golfers—An organizational meeting for the Martin Marietta ladies golf league will be held May 29 at 5 pm in conference room 234 in the engineering building. The league will play Thursday nights at Arrowhead Golf Course from June 7 through September 20. Those interested in participating may call Marge Losey, ext. 5089, or Anna Dixon, ext. 4954.*

*Information on discount tickets for sporting events, theaters, amusement parks, and restaurants may be obtained from the recreation office.*



*W. O. Lowrie, vice president for technical operations, and Robert Powers, newly named executive director of the Metropolitan Science Center, discuss Viking Lander exploration of Mars. Powers visited the Denver Division to receive Martin Marietta Corporation's check for financial support of the center. Lowrie is chairman of the board of the center, located in Denver's City Park.*

## Scholarships are awarded to two

Kenneth W. Johnson and Michael Przekwas have been selected to receive 1979 Martin Marietta Foundation academic scholarships. Both are sons of Denver division employees.

The scholarships, initially for one year and renewable for three more years based on academic achievement, are for \$2000 each year.

Johnson, a senior at Heritage High School, is the son of Mr. and Mrs. Ronald W. Johnson. His father is an engineer at the division. Kenneth plans to attend the Massachusetts Institute of Technology and major in electrical engineering and computer science. He has been doing independent study in the use and programming of computers since his sophomore year in high school and has worked as a computer programmer. Active in a computer Explorer Post, he is building his own minicomputer.

Przekwas, the son of Mr. and Mrs. Robert J. Przekwas, is a senior at Regis High School. He also plans to attend the Massachusetts Institute of Technology and major in engineering. His father is an engineer at the division. Michael has participated in a variety of activities in high school. Among his special interests are technical drawing and exhibiting at science fairs.

## Division prepares for metric conversion

The Denver Division, along with most other industries and businesses in the United States, is preparing for conversion to the Metric-SI system for all measurements.

As the first step in the conversion, a metric coordinator and a metric steering committee have been conducting surveys in all division organizations to determine the impact of metric conversion on the division.

"The first metric decimal system of measurement was developed in France in 1795," R. A. Austin, division metric coordinator, said. "Although many countries have been using a 'metric system' the measurement units were not consistent. It was not until after World War II that an international standards organization was formed to achieve a single world-wide metric system of measurements and standards."

The SI in Metric-SI comes from the French *Systems International d'Unites*. The English translation is International System of Units.

"The Metric-SI is not necessarily identical with the metric system that may be familiar to employees, particularly in unit nomenclature," Austin said.

A ten-year national conversion to the Metric-SI system was initiated by the U.S. Congress in 1975. Division customers have been specifying the Metric-SI system for more and more applications in contract specifications.

"Current contract requirements and those anticipated in the future for the use of Metric-SI in design, fabrication, inspection, and test activities will lead to changes," Austin said. "Standards manuals, procedures, computer programs, equipment, and tools will require change or replacement. Some work functions may be modified.

"In effect, almost everyone will need to understand a new measurement language," Austin said.

"Our surveys will show us where changes will be required. They will also show us what training programs need to be developed so that employees may comfortably use the Metric-SI system.

"The changes will not occur overnight," Austin continued. "The conversion will be a multiyear effort, moving at a pace that is logical and effective for the division's business and for division employees."

## At Canaveral

### Canaveral computer services provide realtime, online management information

With the controlled information center at Canaveral Operations online and working, a major updating of computer services at Canaveral has been completed.

"In the beginning, computer services at Canaveral was punching cards and renting computer service once a week," said Martin S. Blankfield, supervisor of computer services. "We now have online and in real time the major business and technical information necessary to continue to improve our overall efficiency."

For example, the controlled information center is able to monitor by computer all launch activities. Information includes daily occurrences that either support the launch or may create a problem for the launch; a list of key people at Canaveral operations, elsewhere in Martin Marietta, at the Air Force, and with associate contractors; and how these key people may be contacted.

### Savings bond drive kick off is May 30

The Denver Division's 1979 payroll savings bond campaign will open May 30 and close June 15.

For more than two decades the division has achieved more than 90 percent participation in the payroll savings plan program. The goal of the 1979 campaign is 100 percent participation by division employees.

Division coordinator for the campaign is Leroy Hollins.

Department campaign coordinators will meet Tuesday, May 29 at 10 am in the engineering presentation room.

### Two programs get incentive awards

Two Denver Division programs have recently received incentive awards for performance on contracts.

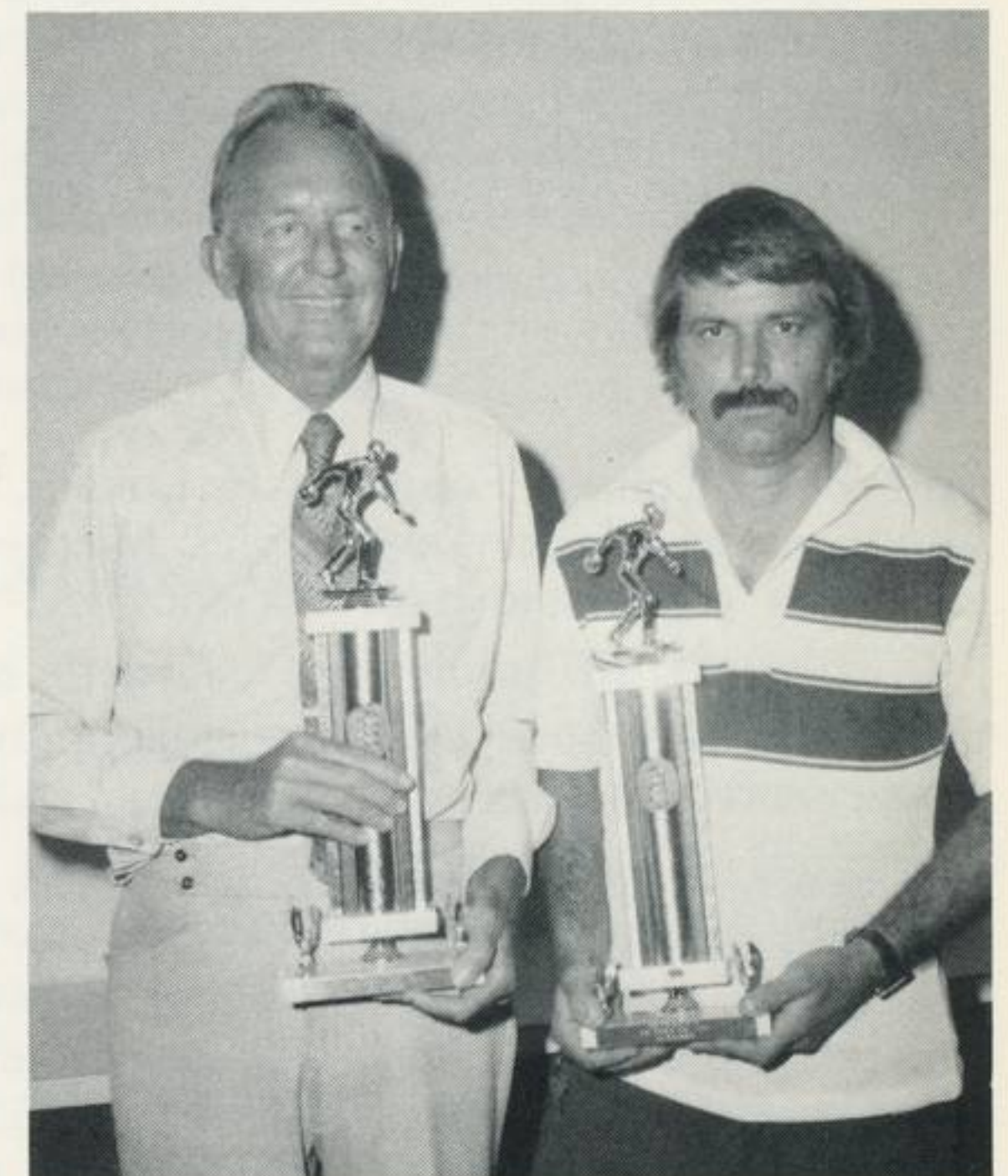
The checkout, control, and monitoring subsystem (CCMS) program received the fifth consecutive superior rating from NASA. This is the highest incentive award rating NASA gives.

The Payload Integration Contract (PIC) project received its incentive award fee from the U. S. Air Force Space and Missile Systems Organization (SAMSO).

The center at Canaveral is linked with the controlled information center in Denver so that information may be transmitted and analyzed at either location.

Among specific information available from computer services are the open-item status summary, management action items, integrated and launch operations procedures, configuration and data management requirements, spares accountability, facility accountability, materiel inventory records, and preventive maintenance scheduling. Timekeeping and materiel information is sent to Denver each week over Martin Marietta Corporation's data link network.

"We have designed the equipment side of computer services at Canaveral so we can add capability to enhance technical and business applications as computer technology improves," Blankfield said. "We are constantly striving to increase our productivity, to be innovative in the development of techniques and applications of our equipment and its software, and to meet each new requirement as it develops."



All-events winners in the recent spring bowling tournament at Canaveral operations were Victor S. Butkis (left) and Albert F. Morawski. Butkis received his trophy for a 1242 pin total with handicap and Morawski his trophy for an 1169 pin count without handicap. Other prize winners in the tournament were George Walters, singles without handicap; Ronald Halcomb, high game without handicap; Edith Nance, singles with handicap; and Lynn Johnson, high game with handicap. The doubles event was won by Johnson and Butkis who rolled a 1265 series with handicap.

### Students gain on-the-job experience at Michoud

Martin Marietta's cooperative education program with engineering students at the University of New Orleans is a tremendous success according to company personnel, participating students, and their professors.

"I could put Mike at a desk tomorrow and he could take over as if he were one of the engineers," said Gregory F. Kaminski, chief of fabrication planning and processes for Michoud operations.

Michael Roberts, a student in the program, is assigned to Kaminski's department as a production planner. He is updating and compiling information for the standard tool manual for transfer to computer.

A sophomore at UNO, Mike earned a BS in biology in 1977 and decided to also get a degree in electrical engineering. "I hope to combine the two degrees and become a biomedical engineer," he said.

The cooperative education program was formed at UNO to "help undergraduate students appraise their talent and abilities in engineering," said Marjorie McKay, director of career placement and cooperative education at the university.

Cooperative education students must be full time engineering students with the university, and must have at least a 2.5 grade point average.

During the program, semesters of school are alternated with semesters of work.

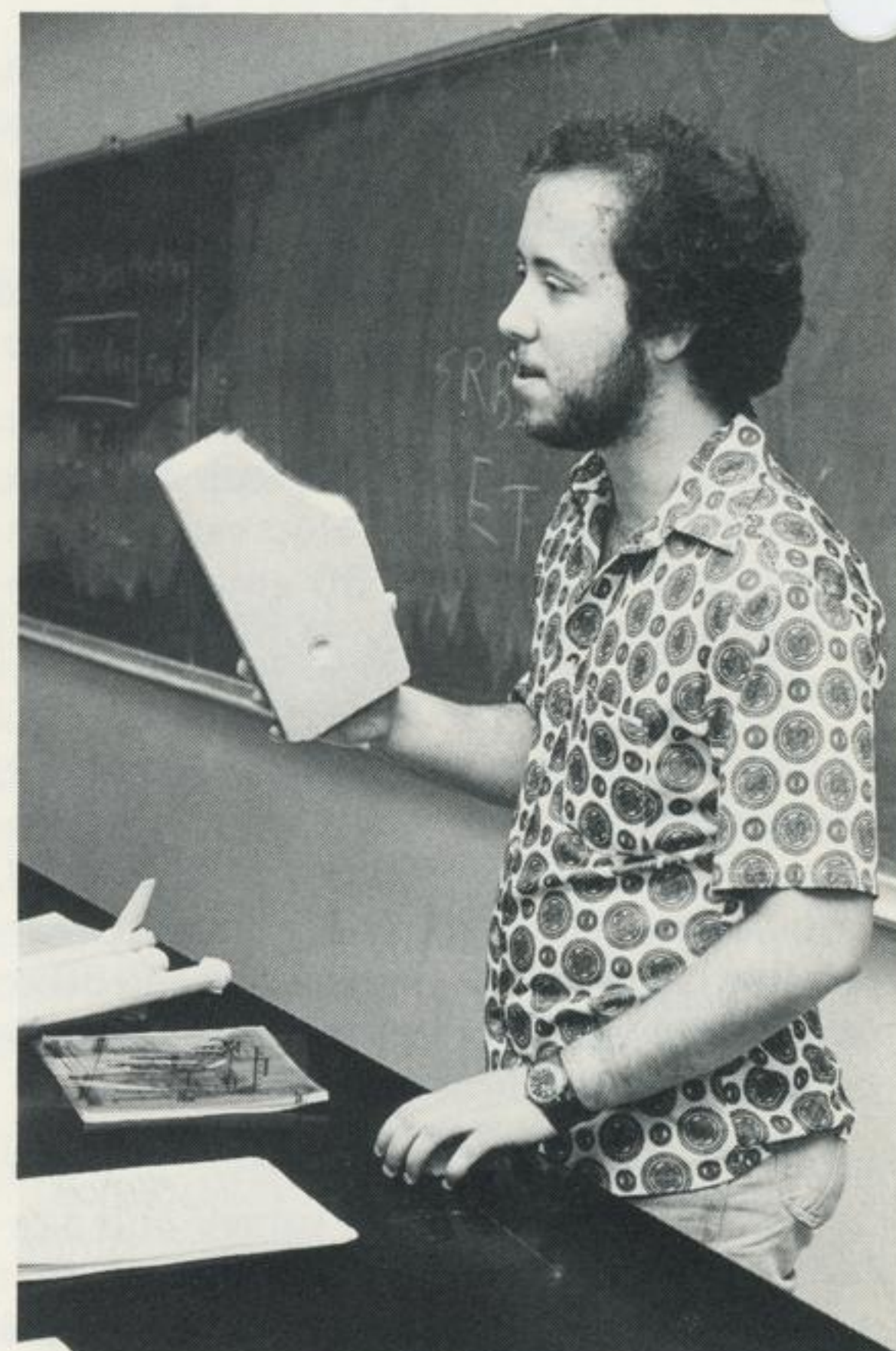
"They're not wasting a year in industry. They're adding it to their education," said UNO engineering dean, Dr. Fritz E. Dohse. "We are grateful to Martin Marietta for providing this unique opportunity for our students. There is no better education than a classroom industry situation."

How does Martin Marietta benefit? Students go through a ready-made recruitment program and training is on-the-job, thereby reducing company cost. Students also bring new talent and ideas into the organization. Veteran Martin Marietta engineers are free to perform more difficult assignments.

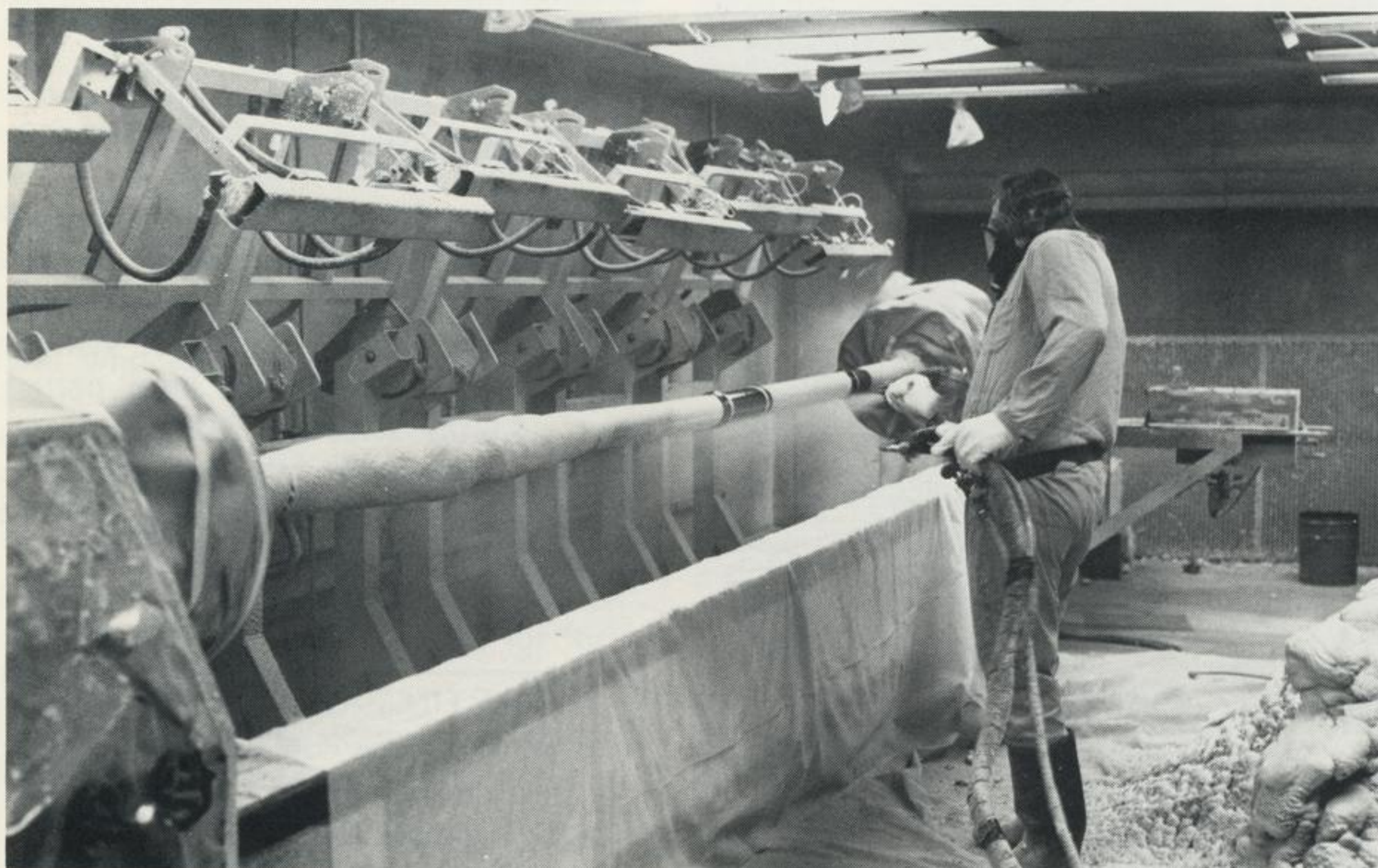
However, students are not shunted to menial tasks. "Each cooperative student is given a meaningful job," Kaminski explained. None of our students is ever given a 'go-for' job around here."

One student, now back in regular classes, once set a competitive pace for company engineers. Herbert Duvoisin, employed by Martin Marietta for four work assignments, successfully completed a heat transference model. "The regular guys out there had a good laugh because my model worked and one of their's didn't," he smiled.

Mike Roberts said "When I go back to school after working here a semester, I feel highly motivated. The engineering courses I take have new meaning."



Herbert Duvoisin, co-op student at Michoud, discusses thermal protection system on external tank in University of New Orleans classroom.



A technician in protective gear sprays foam insulation on an external tank pressure line in the Michoud thermal protection system component area. The foam insulation prevents ice buildup

on the tank resulting from the extremely cold liquid hydrogen and oxygen propellants. It also protects portions of the tank from the orbiter main engine heat during launch.



Peter J. Gannon (left), mechanical engineer at Kennedy Space Center external tank operations was recently awarded a "Silver Snoopy" award from Astronaut Deke Slaton (right). The award is given by astronauts to persons who demonstrate considerable skill, job understanding and leadership, and have contributed to the advancement of the space shuttle effort. Gannon was recognized for his efforts during the external tank mated ground vibration test at the Marshall Space Flight Center, Huntsville, AL.