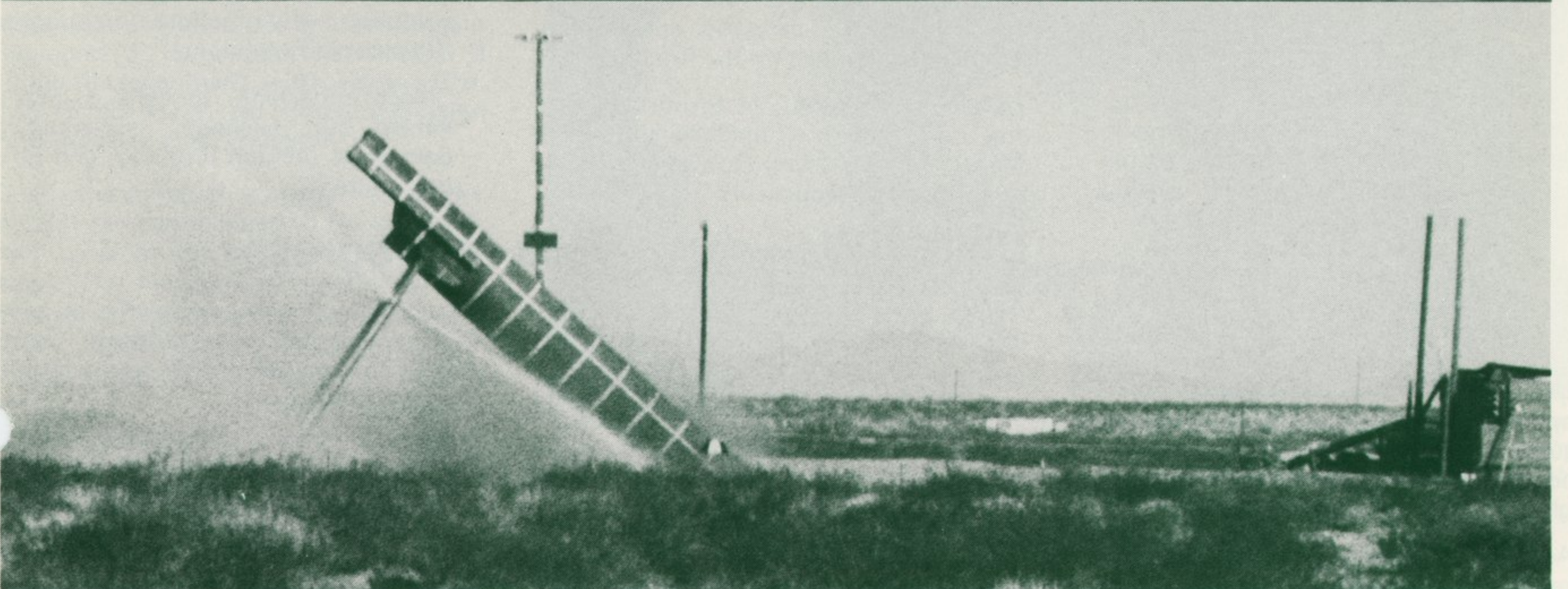
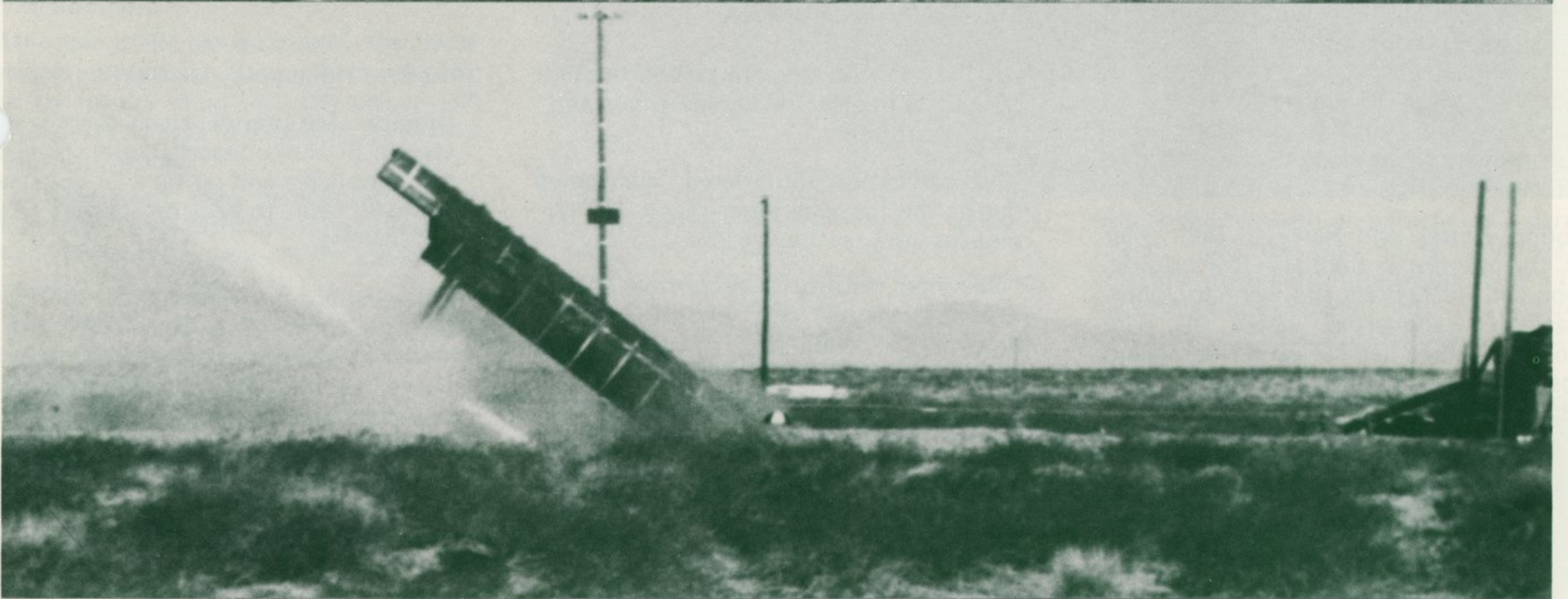
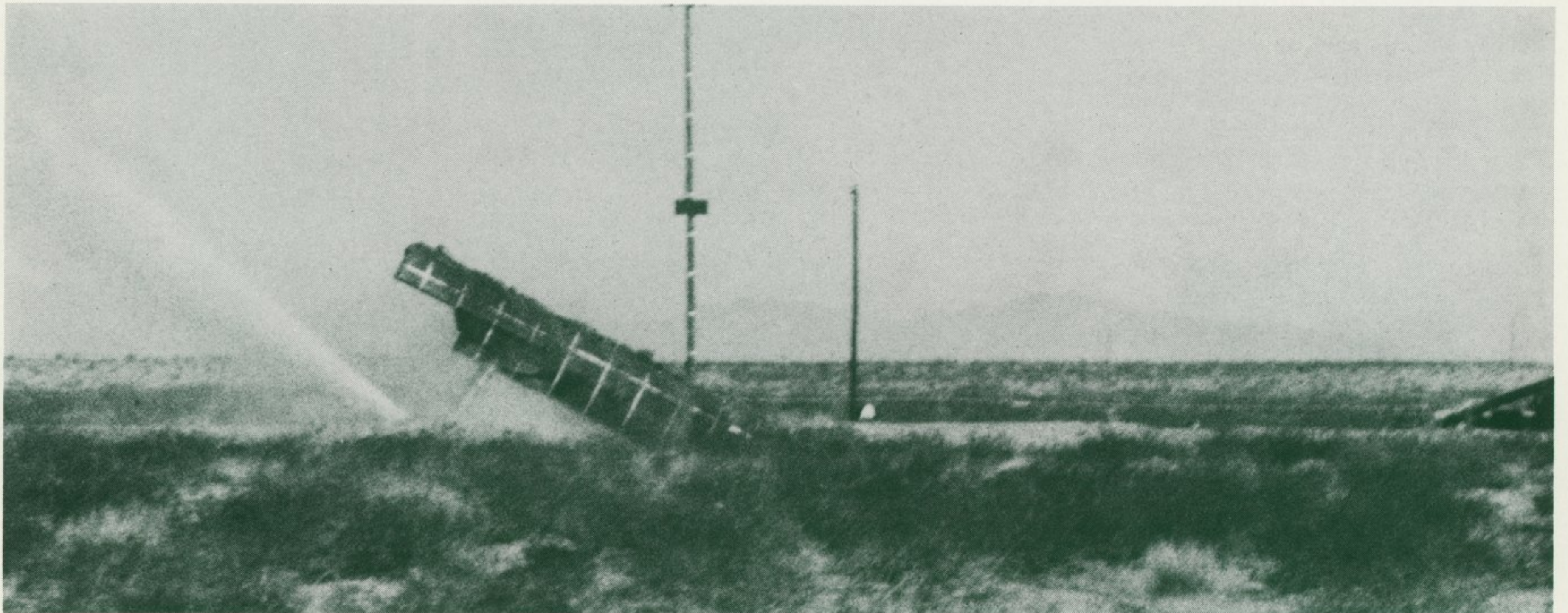


MARTIN MARIETTA

news

DENVER DIVISION

NUMBER 13/1978



Division fire fighters battle Deer Creek Canyon blaze

Reports of the fire in Deer Creek Canyon were just coming in and there was only a hint that it might develop into a major forest and brush fire.

But those Sunday afternoon reports were enough to set in motion the emergency fire plan for the Denver Division.

Dorrall A. Young, chief of plant protection, alerted the duty officer and the division's fire department was put on standby. Robert H. Snodgrass, in charge of facilities and services, called on maintenance crews to check fire fighting equipment and assure it was ready for use.

Knowing the fire might be worse where there was no water supply, maintenance crews readied two tank trucks to transport and pump water.

When Jefferson county authorities called to say the division fire department might be needed under mutual aid agreements with Bancroft and Inter-Canyon fire departments, Young was able to offer immediate assistance.

By Monday morning, the fire was posing a threat to the north end of the division's property. Young, Snodgrass, and Albert H. Hessel, plant protection lieutenant in charge of the fire department, drove to the point where the fire was nearest division property. The decision was made to activate the division's fire-fighting plan.

Young, Hessel, and Harry C. Bull, chief of the division's auxiliary fire brigade, took six fire fighters and went to Johns-Manville headquarters where the Bancroft fire chief had set up his command post. Snodgrass returned to brief division management.

The Bancroft chief asked for 20 fire fighters and put Young, Hessel, and the six men with them to work immediately.

Bull waited to take charge of the additional fire fighters being dispatched from the division.

Art Vos, assistant fire brigade chief in charge of administration and training, earlier had begun alerting fire brigade members and equipping them for fighting the fire. There was no delay in getting more men and equipment to the fire.

"We have perhaps one of the best equipped fire departments in the area," Young said. "When it comes to fighting forest and brush fires, we can provide 200 fire fighters with rakes, shovels, chain saws, flappers, clothing, and water handling equipment. We also have about a million and a half gallons of water in storage to fight fires on our own property.

"And, without bragging, our full-time firemen and volunteer members of the



Reviewing aerial photo of division property and adjacent Deer Creek Canyon fire area are those who directed division fire fighting at the recent blaze. Left to right are Art Vos, assistant fire brigade chief for administration and training; Albert H. Hessel, plant protection lieutenant; Dorrall A. Young, chief of plant protection; Art Arndt, assistant fire brigade chief for facilities and maintenance; and Harry Bull, chief of the fire brigade.

auxiliary fire brigade are among the best trained and most dedicated anywhere," Young asserted.

That dedication and training was shown during the fire when more than 210 employees were on the fire line.

"Our first priority is to protect Martin Marietta people and Martin Marietta property," Young said, "but when we can help a neighbor, we do. Johns-Manville and the people who work there and all the people who live in the Deer Creek area are our neighbors. There was never any question that we would help them in any way we could."

That help extended beyond the fire fighting itself. More than 40 employees in maintenance, the cafeteria, and in management helped behind the fire lines.

Cafeteria employees, in addition to having food ready at all times for the Martin Marietta emergency crew, also made huge quantities of sandwiches to be distrib-

United Way campaigns in progress

Annual United Way campaigns are in progress in all Denver Division locations.

In Denver, campaign coordinators met today for the organization meeting. The campaign will run until October 27.

Kickoff of the drive in Cape Canaveral was September 22. It will continue until mid-October.

Campaigns began September 18 in

uted to nonemployees fighting the fire.

Division vice president and general manager C. B. Hurtt cancelled a business trip to be available and set up a 24-hour management team to provide support to the fire fighters.

Col. Gerhard L. Schopen, the Air Force plant representative, came off leave to lend his support. He arranged for two Air Force 14,000-gallon tankers for water transport, provided a bulldozer to cut additional firebreaks on division property, and arranged for a fully-equipped Air Force fire-fighting crew to standby for use by the division fire department.

"I could spend hours naming people and recounting their actions," Young said. "It was a job well done."

"Most important, though, is that we helped our neighbors, prevented any damage to division property, and no one was injured."

Michoud and Vandenberg. The drive will continue until October 16 at Vandenberg; in Michoud it will run through the week of October 2.

In each location, the goal is 100 percent employee participation and increased giving. More than 200 United Way agencies will benefit from the giving in all locations.

News to publish candidates' views

The views of candidates for the U. S. Senate and for three seats in the U. S. House of Representatives will be published in the October 20 issue of Martin Marietta News.

Objective of the articles will be to provide employees with information on which to base voting decisions in the November 7 general election.

Each candidate has been asked to comment on three general questions:

1. What do you believe the national policy should be regarding future space exploration?
2. What should be the nation's posture on research, development, and manufacture of new military weapons systems?
3. What do you believe can be done to reduce the cost of government and to reduce the impact of regulatory agencies on individuals and businesses?

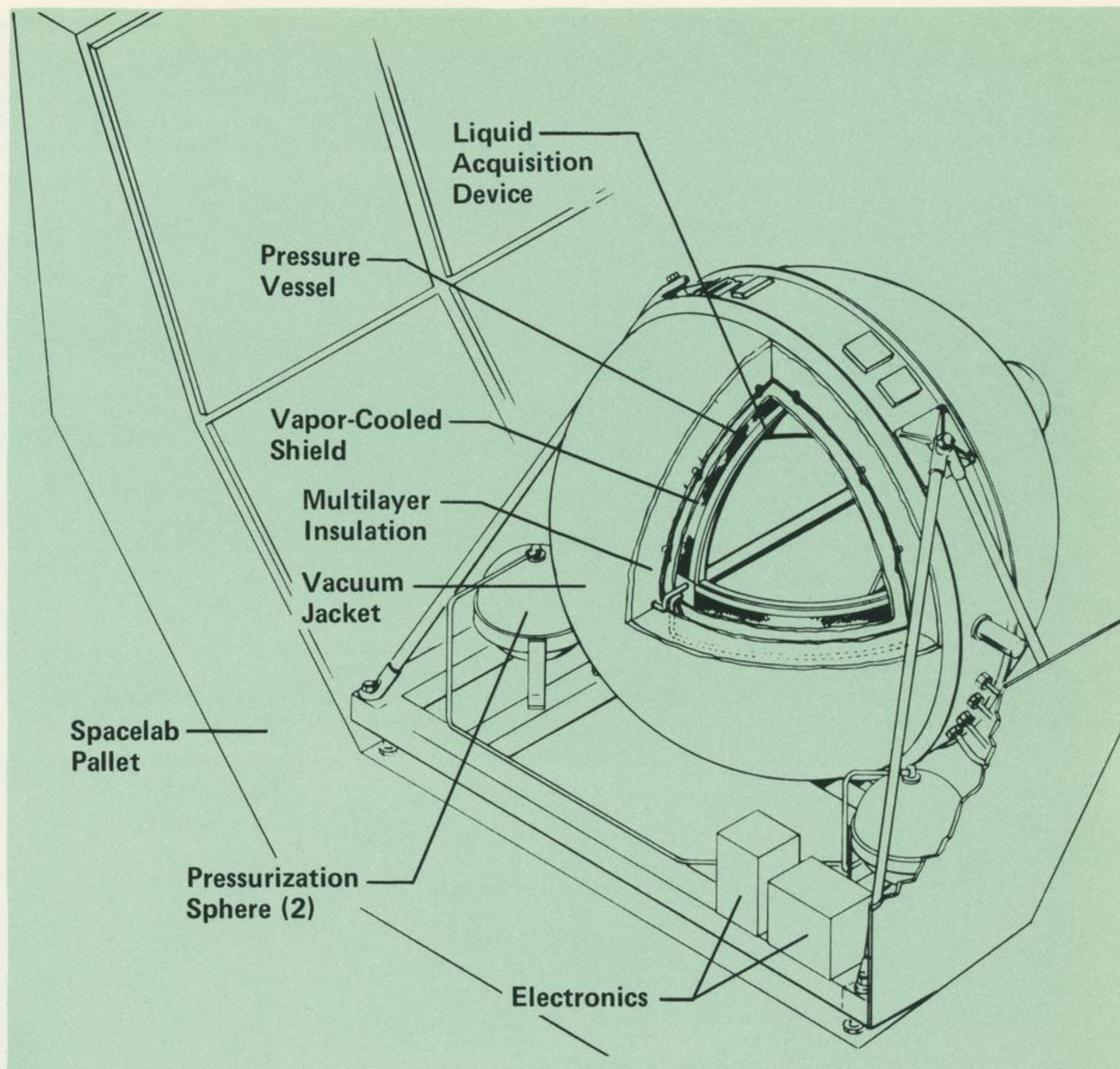
The candidates have been asked to provide biographical information and photographs.

"We believe it is important for each employee to vote in the general election," John H. Boyd Jr., director of public relations for the division, said. "By publishing the views of the candidates, we hope to provide information that will help each employee select the candidate that most closely supports the employee's own views.

"We encourage all employees to read the articles, choose a candidate, vote for that candidate, and perhaps aid the candidate as a volunteer worker or by making a financial contribution to the campaign," Boyd said.

On the cover

A 360,000-pound large-scale MX launch canister is pushed through the roof of a 10-inch thick underground tunnel covered by five feet of compacted soil and raised into launch position—all in 25 seconds. The setting for this recent breakout and erection test was the Arizona desert near Yuma. The test on the division-provided breakout system was successful. This series of photos was taken by Ed Sparhawk, deputy director of the MX multiple aim point/vehicle design critical test program.



Engineering drawing shows installation of cryogenic fluid management experiment on Spacelab pallet.

Work to begin soon on contract for fluid management experiment for Spacelab

Work will begin soon on a 42-month contract for delivery of a Spacelab cryogenic fluid management experiment. The experiment will investigate the orbital storage and supply of liquid hydrogen.

The experiment hardware consists of a pressure vessel approximately 3½ feet in diameter for liquid hydrogen, a liquid acquisition device, a thermal control system, and a vacuum jacket. The thermal control system is activated by a microprocessor, which will also control the entire operation of the experiment while in space.

Objectives of the experiment are to obtain engineering data for establishing design criteria for subcritical cryogenic storage and to demonstrate the feasibility of combining a fine mesh screen fluid acquisition system with a thermal control system.

Dale A. Fester is program manager and Ralph N. Eberhardt, who was proposal manager, is technical director for the project. The work is being done for the NASA Lewis Research Center.

The contract calls for engineering and

fabrication of flight hardware as well as assistance in installing the hardware on a Spacelab pallet which will be flown in the payload bay of Shuttle orbiter. An extensive ground test program prior to delivery of the experiment hardware to the Kennedy Space Center includes thermal vacuum, vibration, acoustic, and electromagnetic compatibility environmental tests. The division will also provide mission support of launch and orbital flight activities.

Although the equipment is being designed and verified for liquid hydrogen use, data from this experiment are applicable to any cryogenic system, including those using liquid oxygen and liquid nitrogen.

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Word processing is important to division growth

Words are an important ingredient in the Denver Division's daily business operations. As the division's business grows and as efforts to acquire new business are increased, the number of reports, the number of proposals, the number of contract documents, and the volume of correspondence all increase.

To assist in processing this increased volume, the division is installing sophisticated, shared logic "display" work processors. The new equipment will take its place with the currently installed magnetic card/tape equipment in a coordinated word processing program.

The responsibility for the division word processing program rests with G. B. Macaulay, Manager of Publication Services. Macaulay has appointed Vi Hall as the division word processing coordinator. Mrs. Hall is assisted by Polly Speranza who has the responsibility for training the operators on the new word processors.

"No longer can clerk-typists or secretaries—even with electric typewriters or the aid of typing pools—produce all the typed sheets of paper necessary for the business," says Mrs. Hall. "The volume is overwhelming."

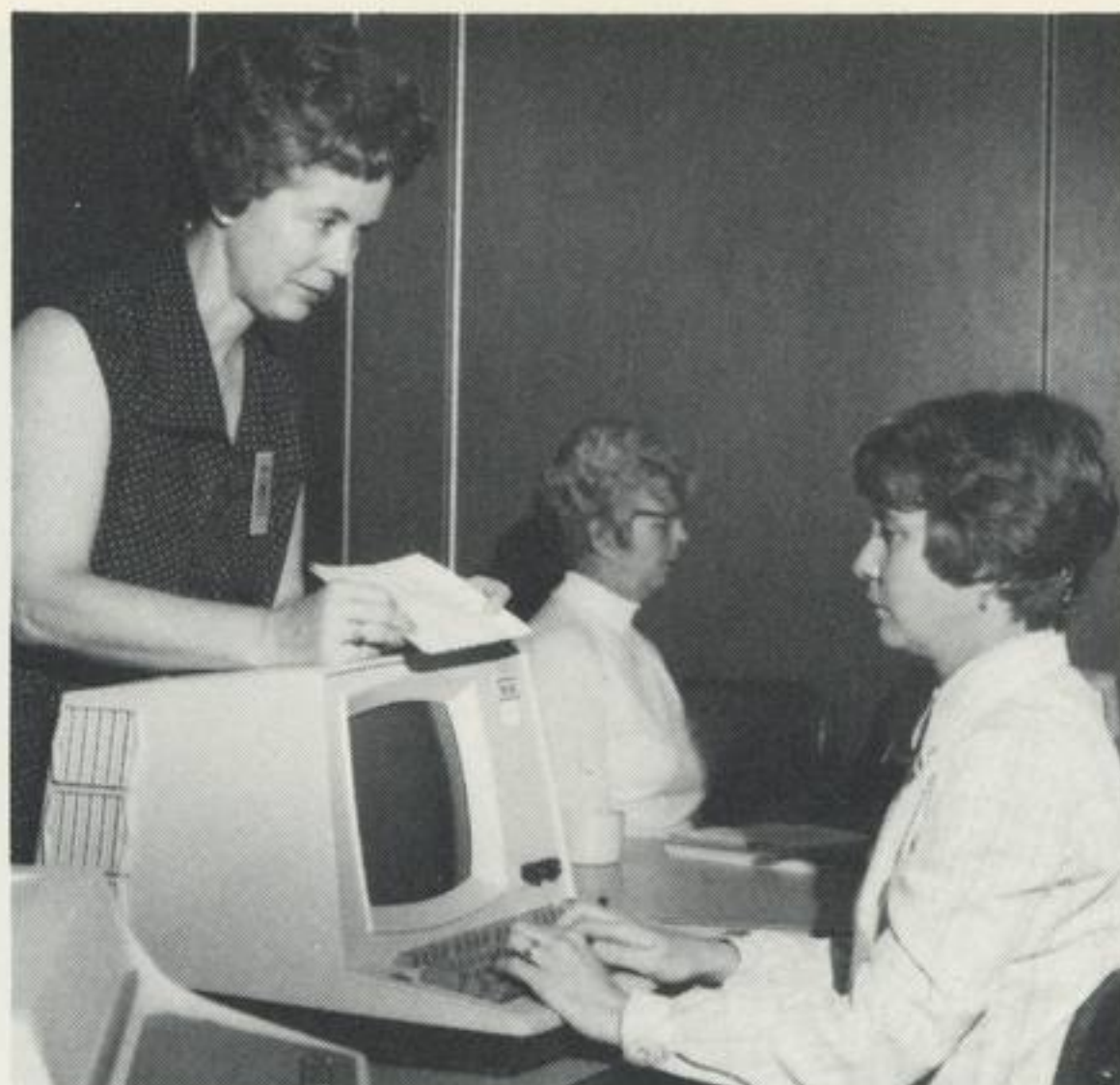
Mrs. Hall and Mrs. Speranza have been assigned the task of evaluating division areas to determine the type of word processing equipment applicable in an effort to increase productivity. This is an on-going study and, if your department has not yet been visited, call Macaulay or Hall and arrangements will be made to analyze your production requirements.

"We look first at departments and sections where reports and new business proposals are essential to the division's business growth and then at areas where there is heavy correspondence." Mrs. Hall said.

In preparing new business proposals, for example, it isn't unusual for writers to prepare as many as 10 drafts to assure accuracy and effectiveness of the proposal.

"Time is critical in proposal preparation," Mrs. Hall pointed out, "and we were spending too much time typing, and retyping the drafts."

Equipment now in use stores the first draft in one of several memory devices—memory core, magnetic tape, magnetic card, or floppy disk. When changes are made they are inserted in the memory devices and almost at the touch of a button, a new draft is produced.



Vi Hall and Polly Speranza check word processing equipment.

The operator needs only to type changes; the rest of the typing is done by the automated equipment at a speed few typists can achieve. The operator is free to do other work while the new draft is being typed.

Thirteen "display" word processing units have been installed in heavy use areas. The long-term objective is to establish word processing centers so equipment will be available not only to heavy users, but also available to departments and sections that have occasional use for repetitive typing.

Golf tourney winners announced; play starts in three other sports

With winners in the annual Martin Marietta open golf tournament named, the division's recreation department has announced the beginning of play in three other sports—volleyball, bowling, and basketball.

Golf tourney awards were presented to:

George Munger, medalist low gross, 78; Bob Franklin, runnerup low gross, 79.

Bernie Winslow, medalist low net, 70; Norm Wright, runnerup low net, 72. L. J. Faber and George McGee, closest to the pin.

W. J. Kacena and Dwaine Robey, longest drives.

Thirty-two teams have begun volleyball league play with eight games scheduled on Tuesday and Thursday nights. Three Denver Public Schools in the Bear Valley area are being used for the games. Albert Henry Junior High School is used both nights; Doull Elementary School Tuesday night; and Traylor Elementary School Thursday night.

The Tuesday night mixed bowling league has 10 teams rolling at Bellview Bowl.

The basketball league is being organized and play will begin October 4 at Ken Caryl Junior High School and Sheridan Middle School. Employees interested in playing should contact John Anderson, ext. 4609.

Global positioning system ground segment proposal submitted to SAMSO

A proposal to complete the preliminary design for the command and control ground segment for the Global Positioning System (GPS) has been completed by the Denver Division and submitted for evaluation to the NAVSTAR joint project office at the Air Force Space and Missile Systems Organization (SAMSO).

GPS is a proposed navigational system using 24 satellites to aid surface and air navigation. Users will be able to pinpoint their locations within 10 meters by using receivers collecting navigational data from the system.

The proposal effort was managed by Curtis D. Brudos. Neil R. Ferryman was his deputy.

The division teamed with TRW and BDM in bidding on the command and control facility to be located in Fortuna, North Dakota. TRW provided software support and BDM added communications capability.

It is anticipated that three industry teams will be selected about mid-December to begin a 15-month competition in which each will complete a preliminary design. These designs will be evaluated and one team will be selected to proceed with final design and fabrication of the command and control facility—a contract estimated at \$65 million.

Those who had lead positions in the proposal preparation were C. E. Velez, technical director; Edward A. Euler, mission operations; George E. Heyliger, software; William Richter, technical proposal manager and systems engineering; A. B. Huff, electronics systems design; Garrett Burton, management volume; Larry Kilstrup, executive volume; and Walter T. Price, planning.

Martin Marietta day set for football game

October 14 will be Martin Marietta Day at Falcon Stadium when the Air Force Academy plays Colorado State University in the Academy's homecoming football game.

Tickets will be on sale outside the division cafeteria October 3, 4, 5, 10, 11, and 12. Adult reserved seats are \$4 with special youth end zone seats selling for \$1.

Solid rocket booster recovery subsystem delivery being made

A division-made solid rocket booster decelerator (SRB) subsystem will be among the first flight subsystems delivered for the Space Shuttle SRB.

C. William Spieth, program manager for the subsystem, said deliveries began September 22. "To our knowledge, we are among the first to deliver SRB subsystem flight hardware to the Kennedy Space Center. This is significant since the go-ahead in July 1976 for the decelerator subsystem development was a year later than the original start date."

Pioneer Parachute Co. is subcontractor for the parachutes used in the subsystem.

Robert E. Vosbeek, operations deputy for the program, has completed plans for the division field team that will conduct final operations before the hardware is turned over to KSC personnel.

The decelerator subsystem provides for impact survival and reuse of the jettisoned SRBs. Each subsystem has a pilot parachute, a drogue parachute, three main parachutes, and a main parachute support structure with attachment fittings. The subsystem is installed in the SRB nose assembly.

After the SRBs are jettisoned, the decelerator subsystem slows their descent, gently lowers them into the ocean, and provides for easy retrieval and eventual refurbishment.

The subsystem uses parachutes heavier than any previously designed. Each of the 115-foot diameter main parachutes weighs 1700 pounds.

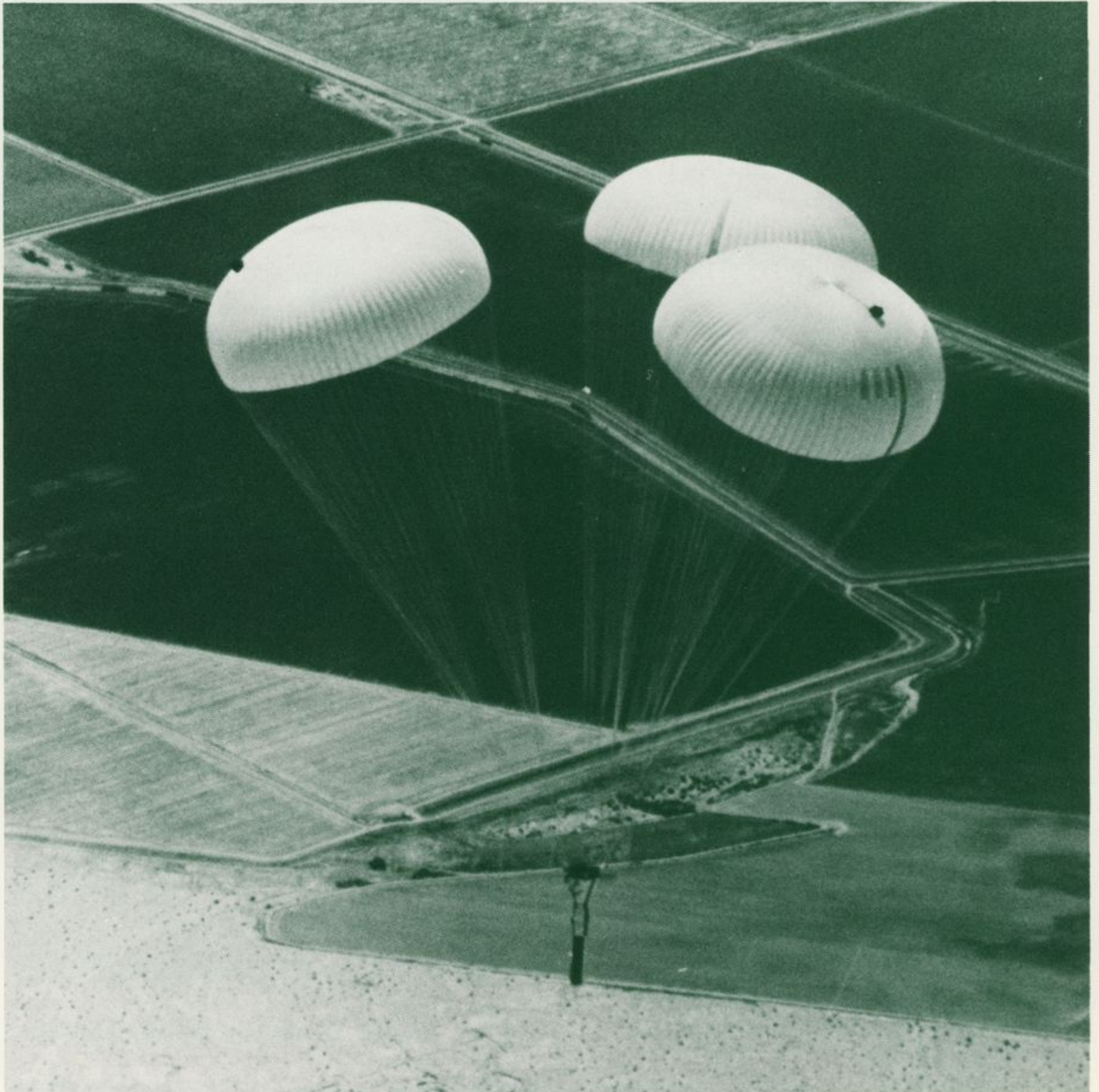
"The three main parachutes combined are large enough to carpet an entire football field," Spieth added.

Air Force officers begin EWI program

Major Howard W. Clark Jr. and Captain Raymond J. Gunterman have begun a 10-month assignment at the Denver Division in the U. S. Air Force Education with Industry (EWI) program.

This is the sixteenth consecutive year the division has participated in the graduate-level program for career Air Force officers. The management internship program is administered by the U. S. Air Force Institute of Technology (Air University) at Wright-Patterson Air Force Base.

After completing the program at the division, the officers are assigned to Air Force procurement functions.



A test earlier this month was called a "significant milestone" by William R. Woodif, the program's technical director. After being released from under the wing of a B52, a 48,000-pound drop test vehicle, also manufactured by the division,

descended to earth on a single main parachute. "The test was designed to overload the main parachute by applying 115 percent of the designed limit load. It successfully withstood that load," Woodif said.

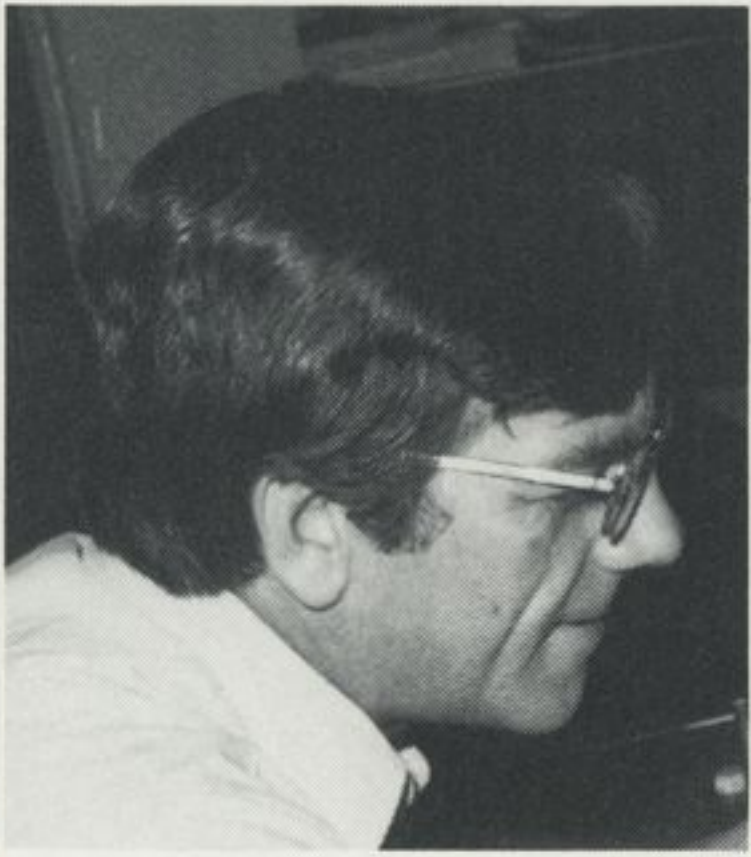


Canaveral operations was presented the National Safety Council's research and development division's first place award for the best safety record for 1977. Shown with the award plaque in the Titan vertical assembly building are, left to right: T. H. Allen, safety engineer; R. N. Halcomb, chief, safety engineer; and H. G. Senter, senior safety engineer.

At Michoud



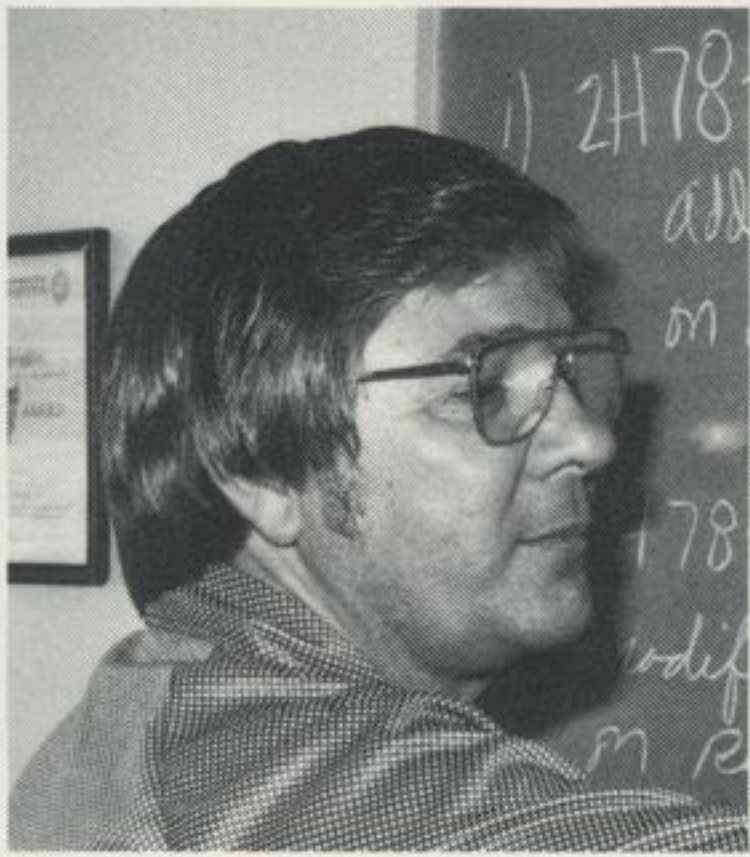
John Klinger



Richard Karchner



Vickie Sellers



Robert Reightley



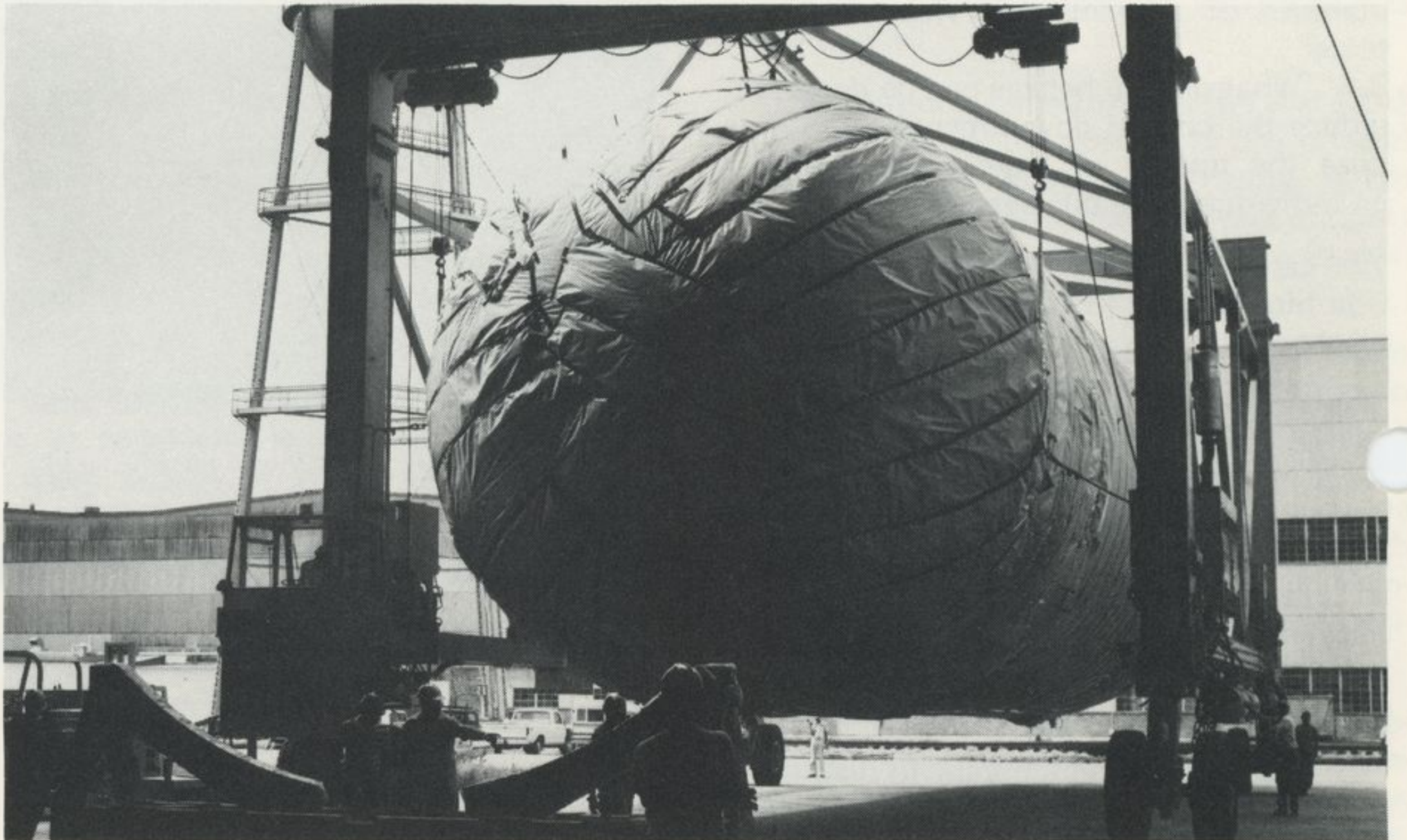
Marjorie Seeman

Each of these Michoud employees received \$200 tax paid this past month for referring a new employee who has been hired by Martin Marietta. The Michoud employee referral program provides the finder's fee to an employee

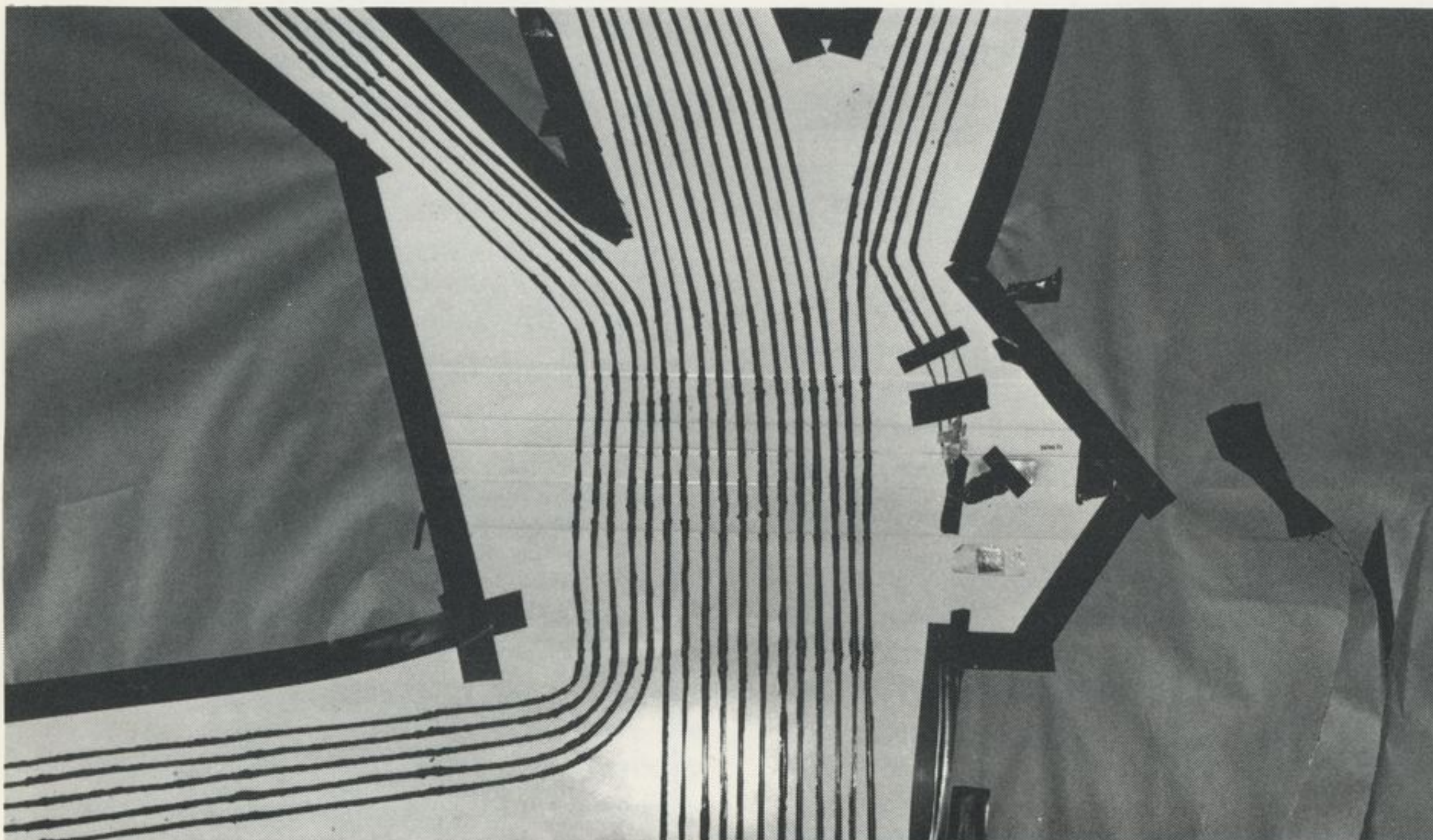
who refers a candidate who is successfully hired into a salary exempt position within 60 days of the referral. Seven new employees have been hired at Michoud as the result of the finder's

program that began two months ago. All employees are encouraged to participate in the program. Forms and additional information are available in the industrial relations office.

Liquid hydrogen tank flight tank 1, wrapped in brown paper to protect it from the elements, is transported to the hydrostatic test building at Michoud for testing. The tank is transported by a huge straddle carrier that supports the tank on slings from above and can be driven from both ends. After testing, the tank will be taken to the vertical assembly building for cleaning and application of thermal protection system.



More than 6 miles of this thin wire weaves around the sides of external tank to record data from 250 test instruments taking engineering measurements on the tank during the first flight. The wires are bonded to the side of the aluminum external tank and covered with the two inches of foam-like thermal protection system which protects. The wires are connected to strain gauges, temperature sensors, radiometers, calorimeters, accelerometers, and pressure transducers.



Michoud hunting and fishing club organizes

A Martin Marietta Michoud Operations hunting and fishing club is being organized to help coordinate the many hunting and fishing activities by interested employees in the broad Louisiana and Mississippi outdoors.

The club plans to sponsor hunting and fishing contests and will organize other sporting activities for the benefit of the group.

Employees interested in joining the club should contact Ron Landry or George Geisler on extension 5-3966.

At Michoud

Call Ext. 3788 with suggestions or information for articles.