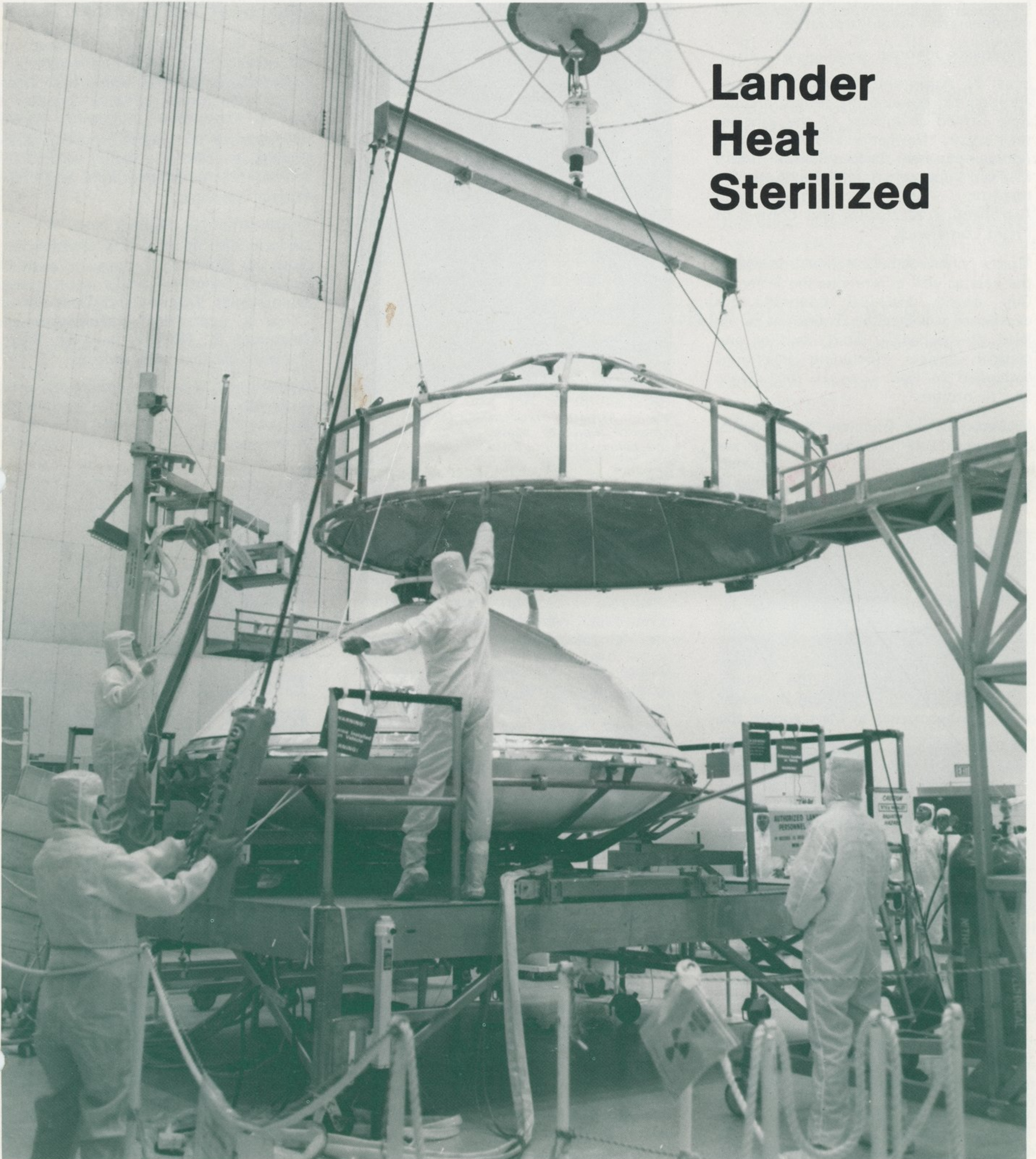


NUMBER 9/1975

**Lander
Heat
Sterilized**



Division employees honored by Corporation

Thirteen Denver division employees were participants in the 14th Annual Martin Marietta Corporation Honors Night held at the end of June in Washington, D.C.

Seven of them received Thomas Jefferson Cups for attaining "preeminence by virtue of superior accomplishments and superior contributions to the progress and movement of a great Corporation."

Employees honored:

Scott K. Asnin and Arthur L. Satin, in addition to receiving the Jefferson Cups, were named co-authors of the year for their paper, "Navigation and Performance Analysis of a Mars Surface Sample Return Mission," presented at the American Institute of Aeronautics and Astronautics' Mechanics and Control of Flight Conference.

Morley V. Friedell was named inventor of the year as well as receiving the Jefferson Cup award. He was honored "for excellence reflected by inventions in the field of mechanical fluid handling and control devices, including inventions embodied in the Titan III and Space Shuttle orbiter.

Michael K. Mann was cited "for technical competence and leadership that led to the

resolution of technical challenges associated with the Viking Guidance and Control Sequencing Computer."

Norman A. Osborne received an award "for innovations resulting in significant improvements in precision pointing technology that enabled Martin Marietta



Martin Marietta president J. Donald Rauth presents awards to, above, Morley V. Friedell and, below, Arthur L. Satin.

Aerospace to achieve a singular competitive position for the Large Space Telescope program contract award."

Herbert D. Wilkening was honored "for contributions toward developing the state-of-the-art gust loads analysis criteria that permitted timely launching of the Helios-A spacecraft aboard the Titan IIIE."

Albert R. Schallenmuller received the Jefferson Cup "for outstanding performance in integrating the Viking Flight Operations Software Systems at the Jet Propulsion Laboratory, creating new testing techniques, shortening the process, and creating highly constructive relationships with Laboratory and Viking Project Personnel."

Others attending Honors Night for their performances at the Denver division were Reid H. Clausen, business acquisition; Felix J. Scheffler, profit contribution; Leonard G. Taignan and Dominick D. Ferrarini, operational performance; and Raymond S. Wiltshire and H. Wayne Terbush, personal achievement.

Representing division management at the presentations were L. J. Adams, M. C. Bennett, Walter O. Lowrie, and George W. Morgenthaler.

Viking landers complete sterilization

Two Viking landers have completed heat sterilization in preparation for launch in August for their journey to Mars.

The landers were sterilized to honor the international agreement the United States has made with other countries to prevent contamination of Mars until the year 2018 and to prevent the lander biology unit from detecting life which might otherwise be carried to Mars aboard the lander.

Prior to heat sterilization, the Viking lander capsule was sealed inside its aeroshell and bioshield capsules. The seal isn't broken until the bioshield cap is jettisoned in Earth orbit.

To insure that no organisms enter the bioshield following sterilization, the bioshield is pressurized with sterile nitrogen gas. Pressure is vented just prior to bioshield cap separation.

The Viking lander capsules were sterilized at about 233 degrees Fahrenheit for about 40 hours.

The combination of these three methods ensures that heat at a sterilization temperature reaches all internal parts of the lander.

The sterilization chamber is an electrically fired oven 23 feet long, 23

feet wide, and 14 feet high with stainless steel walls insulated with polyurethane.

Dry nitrogen gas inside the chamber is circulated through an ethylene glycol-filled heat exchanger, which, in turn, is heated by the electrical elements.

Before the final sterilization of the lander, all internal components on the lander and its aeroshell were heat sterilized during manufacturing to kill organisms which could live inside the materials of which they were made.

FAMILY DAY TICKETS

Tickets entitling employees and their families to free admission to Lakeside Amusement Park July 19 have been mailed to all employees.

The park has been reserved from 10 am to 5 pm for Family Day and rides will be free during this time.

To facilitate traffic flow into the park, employees are encouraged to approach the park from north on Sheridan and to use the Lakeside Shopping Center exit when leaving.

In case of rain, Family Day will be held July 26. Listen to KDEN, 1340 on the AM dial, for information or call the Martin Marietta switchboard.

On the cover --

The Bioshield Cap is lowered atop the aeroshell containing Viking lander 2 prior to sterilization. The bioshield will be sealed and pressurized to prevent biological invasion during the launch of the Viking spacecraft on its journey to Mars.

Division signs contract for 10 new Titan IIIs

The Denver division has signed a follow-on contract to produce 10 additional Titan III standard launch vehicles for the U.S. Air Force.

The contract for \$74,677,997 will continue the production of Titan IIIs into early 1979. They will be produced at the division under the executive management of the Space and Missile Systems Organization of the Air Force.

The Titan III, which just passed its 10th anniversary of operational service, is the largest and most powerful launch vehicle used by the U.S. Air Force. After more than a decade of service, 86 Titan IIIs have flown carrying 123 satellites and spacecraft into space.

The Air Force currently has 41 Titan IIIs being built in Denver and at launch sites in Florida and California.

College students learn by doing in division cooperative program

Classroom theory is no longer just theory for nine college students who are part of the Denver division's cooperative education program.

The nine divide their time between college study and work assignments at the division, generally in three to six-month periods.

Work assignments are designed to give students first-hand industrial experience in their chosen career fields. A mentor—or adviser—is named for each student to provide advice, guidance, continuity, and assure work assignments contribute to the student's professional development.

Is the program working for the students? Here are a few of their comments:

"School is individualized. You are being tested against everyone. Here, we get the feeling of real team effort. It is great to be part of the team."

Another student said, "The experience is valuable—even if it turns out to be a bad experience. I feel it is just as important to learn what you don't want to do in life as it is to learn what you do want to do. I'm getting exposure to both."

"I'm learning how to think, thanks to the engineers I am associating with," said a program participant. "I'm sure that will make me a better student and, in the long run, a better engineer."

Participants in the program are top students, with grade points in the 3.0 to 4.0 range.

The students, their colleges, and their majors:

Teresa A. Curlander, University of Colorado, applied mathematics.

Sandra S. Fugami, University of Washington, mechanical engineering.

Richard Gonzales, University of Colorado, mechanical engineering.

Nina J. Hargis, University of Oklahoma, aerospace engineering.

Ronald F. Korsch, University of Washington, electrical engineering.

Cynthia D. Tollerson, University of Colorado, business and accounting.

Katherine A. Weeks, University of New Mexico, electrical engineering.

Robert P. Wessels, University of Cincinnati, electrical engineering.

Mary F. Zenk, Iowa State University, aerospace engineering.



Sandra Fugami

Richard Gonzales



Cynthia Tollerson

DIVISION AWARDED 10-MONTH STUDY CONTRACT

The Denver division has been awarded a 10-month, \$373,000 study contract for the conceptual design of an astronaut maneuvering unit for use in the Space Shuttle program.

Under the contract, awarded by the NASA Johnson Space Center, the division has been asked to investigate the

Three AF officers complete EWI

Three Air Force officers recently completed their nearly year long Education with Industry (EWI) program at the Denver division and received certificates of graduation from the Air University.

The three and their new assignments:

Capt. Paul W. Crank III, procurement officer, Kelly AFB, San Antonio, Texas.

Capt. James W. Medford, base procurement officer, Eielson Air Base, Fairbanks, Alaska.

Capt. Linda A. Lowe, base procurement officer, Beale AFB, Sacramento, Calif.

The EWI program will resume in September when two officers who have been assigned by the Air University to the program report to the division.

On The Job

With medical costs going up, the Martin Marietta group insurance program takes on greater importance for all employees. Benefits from the program help reduce the economic impact of illness and, in fact, add to employee compensation for the job being done.

But, for the program to be effective, someone has to see that claims are processed properly and promptly. That task is being done by Phyllis Siefkes and Patricia Freeman in the division's insurance office.

These two employees receive an average of 200 claims each working day. Their goal is to take no more than three days to process the claim, helping to assure prompt payment by the insurance company. Checks to employees are sent out by the insurance company from seven to 14 days after the claim is received.

"Employees can help speed payment," the two say. "Most delays are because the employee has failed to completely fill out the employee portion of the claim form."

"When this happens, we try to call the employee, but often we have to send the form back for additional information. That delays processing."



Phyllis Siefkes



Patricia Freeman

Phyllis and Patricia are the link between employees and the insurance company. They also verify insurance coverage when hospitals or physicians call.

Want to talk about your insurance coverage? Or check on your beneficiaries? Or find out when you will get your check? Phyllis and Patricia are available to talk to you any day between 1 and 4 pm in room 117 in the Administration building.

MARTIN MARIETTA NEWS

Published by Public Relations
MARTIN MARIETTA AEROSPACE

Denver Division
P. O. Box 179
Denver, Colorado 80201

July 1975

Division to build solar panels for Parker junior high

A special black coating, developed by the Denver division for Skylab optical experiments, is being adapted to collect solar heat for the new junior high school in Parker.

The black coating, which has one of the highest known absorptive rates for collecting the Sun's energy, is being used on solar heat collectors on the roof of the new school.

The collected solar energy will augment the school's heat pump principle heating and cooling system. Although the solar heat collectors alone cannot warm the building, architect Donald H. More predicts they will reduce the building's energy requirements by a minimum of five percent.

The solar collectors, to be built by the division, will be installed this Fall by the general contractor.

This is the first solar energy application on a Colorado public school and the state's Department of Education is monitoring the project as a pilot program for other schools.

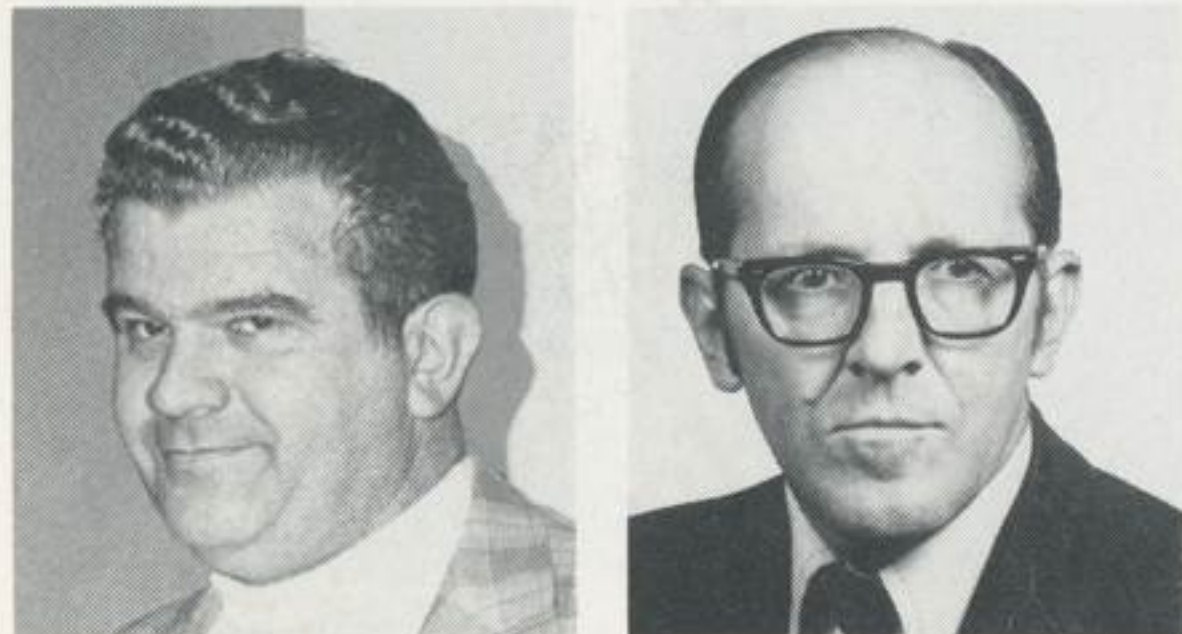
Although this is the largest single application for the black coating, the division is using the material in a variety of products.

AFPRO staff members honored for work

Two members of the staff of the Air Force Plant Representative office have been awarded Outstanding Performance Ratings for accomplishments during a one-year period.

Honored were Carl R. Kennemer and James A. Zalmanek.

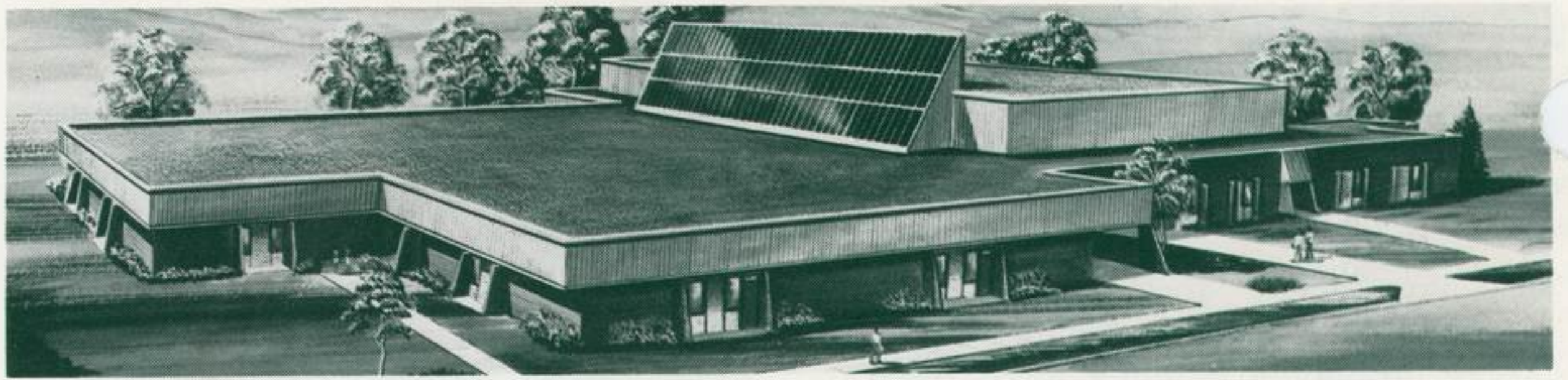
Kennemer was cited for his work as chief of the AFPRO contract administration



Carl R. Kennemer James A. Zalmanek

division and as principal administrative contracting officer.

Zalmanek, the AFPRO safety manager, was honored for his development and execution of a safety program which earned the Air Force Contract Management Division Ground Safety Award for three years and earned the National Safety Council's Certificate of Commendation for two years.



This is the artist's concept of a solar heat collector, using the division developed special black coating, as installed on the roof of the new Parker junior high school. The installation will be 24 feet tall and 120 feet wide.

Evening at Pops begins series

The 1975 summer season of Evening at Pops began July 6 over KRMA Channel 6, Denver's Public Broadcasting Service television station. The program is presented through a grant from Martin Marietta.

The program is normally telecast at 7:30 pm on Sunday with repeats each Thursday at 8 pm.

Remaining programs in the series:

July 13—Ferrante and Teicher; July 20—Cole Porter Evening with Bobby Short; July 27—Chet Atkins; Aug. 3—Carmen de Lavallade; Aug. 10—Roger Williams; Aug. 17—Benny Goodman; Aug. 24—Old Timer's Night with Richard Hayman; Aug. 31—Jose Molina; Sept. 7—Peggy Lee; Sept. 14—Ilana Vered; Sept. 21—Richard Tucker and Robert Merrill; Sept. 28—Old Timer's Night with Eubie Blake.

The programs are the best of the Pops programs telecast in the prior four seasons. Arthur Fiedler and the Boston Pops are at work on a special series for 1976 as part of the bicentennial celebration.

AVCO award contract for Space Shuttle work

AVCO Aerostructures of Nashville, Tenn. has been awarded a \$3.2 million contract by Martin Marietta Aerospace to produce aluminum panels for the intertank assembly of Space Shuttle's external fuel tank.

The panels will be mechanically joined into 22-foot long by 27-foot diameter cylinders at Michoud, where Martin Marietta is the principal contractor for producing the external tanks.

AVCO will produce panels for the initial nine tanks to be used in the development program.

The intertank assembly joins the liquid hydrogen fuel tank and the liquid oxygen fuel tank, as well as acting as the main structural attachment point for the twin solid rocket boosters of the Space Shuttle.

16 earn awards for developments

Sixteen employees were granted awards by the division's product development review board following a recent review of their ideas.

Those receiving awards:

Morley V. Friedell for his "Titan III Oxidizer 'Pogo' Accumulator." The metal bellows configuration originally designed to meet Titan IIIM launch vehicle program requirements will be used on the Titan IIIE Centaur launch vehicle.

Gerald E. Johnson for "A Stabilization Technique for Voltage Controlled Sources." The idea was a key factor in the division's win of the Voltage Coupled Oscillator contract.

Russell A. Chihoski and John C. DeFellippie for "Automated Spotweld Monitor."

Arthur F. Goldsby, Frank J. Haberl, and Satish K. Anand for a monitoring system for remote installations of service equipment, like vending machines.

David W. Neiswander, Charles A. Hall, Laurence O. Williams, and Murlin T. Howerton for idea disclosures relating to production of rocket fuels.

Richard P. Warren for his "Superfluid Helium Vent and Flow Control System utilizing both the Mechano-Caloric and Thermo-Mechanical Effects."

William J. Owen for an improvement to his Automatic Space Sextant.

Robert J. Novoryta and Frederick W. Dawson for "Gas-Filled Swivel Joint for Cryogenic Heat Pipes."

Paul M. Lorenz for "Fatigue Enhancement of Fastener Holes."



John P. Donnelly, assistant administrator for public affairs for NASA, describes the Viking mission to Mars at the Viking exhibit at the recently concluded Paris Air Show.