

**25<sup>th</sup>**  
ANNIVERSARY  
DENVER AEROSPACE

**NUMBER 10 / 1981**

**MARTIN MARIETTA**

**news**

**DENVER AEROSPACE**





# Neil Sedaka to headline 25th anniversary celebration

Denver Aerospace will celebrate its 25 years in Denver September 26 at McNichols Arena.

The event will begin at 6:00 pm and includes an historical review of activities here, featuring remarks by J. Donald Rauth, chairman of the Martin Marietta board and former general manager here.

There will be special recognition for employees who joined the company in Denver in 1956 or who were transferred here that year.

Neil Sedaka will begin a concert at 8:00 pm. Appearing with Sedaka will be the comedy team of Skiles and Henderson.

More than two decades of hitmaking, both as a performer and as a composer, have made Sedaka a musical institution.

He began his songwriting career at 13 with a neighbor, Howard Greenfield. They have remained songwriting partners for 25 years.

Sedaka's performances are a blend of the '60s, '70s, and the new material of the '80s.

He has just released his 25th album and six times he has received the BMI award for having his songs played more than 400,000 times on radio and television. Three of his songs, "Breaking Up Is Hard To Do," "Love Will Keep Us Together," and "Laughter In The Rain," have been performed more than a million times.

Although Skiles and Henderson are primarily known as comedians and creators of sound effects, they, too, are talented musicians. "They do it all," one critic said.

They have made more than 80 appearances on the TV game show, "Hollywood Squares," have co-hosted the Mike Douglas Show, toured England with Andy Williams, and have co-starred with Loretta Lynn in Las Vegas.

## On the cover

A tri-band antenna for use in MX flight tests is undergoing testing in an anechoic chamber at Ball Aerospace in Boulder to measure its radio transmission pattern. The anechoic chamber simulates free-space conditions, eliminating reflections, or "ghosts." The 94-inch diameter ring is a cross section of the last stage. The unusual antenna is flush mounted around the circumference of the vehicle. During missile flight tests beginning in 1983, the antenna, which is part of the instrumentation and flight safety system, will receive and return radar signals from Air Force tracking stations and transmit telemetry on the missile's performance. Ball Aerospace is building 11 flight models of the antennas under a subcontract to Denver Aerospace.

## Address correct?

Employees are urged to have their correct address on file before September 1 to assure receiving tickets for the 25th anniversary concert.

An Employee Personal Change Notice, available from department secretaries, should be used to file the correct address.

**Tickets will not be mailed to employees using Denver Aerospace post office box numbers.**



John Turcheck demonstrates the prototype of a demating tool for rectangular connectors. The tool permits greater production efficiency for connector demating.

## Credit union staff at 'branch' offices

Members of the Red Rocks Federal Credit Union staff will set up "branch" offices each Thursday.

The staff will be at the Denver System Center in an office next to the cashier and in the conference room in building 6030 at Greenwood Commons from 9:00 am to noon.

Although limited services will be available, the staff member will bring the member's transaction information if the the member calls the main office on Wednesday.

The credit union's main office is open from 10:00 am to 2:00 pm on Monday, Tuesday, and Friday, and from noon to 4:00 pm on Wednesday. Telephone calls are accepted from 8:30 am to noon daily, except on Thursday.

## 25 years in Denver?

Earlier this year, employees who have worked in Denver for 25 years—since 1956—were asked to register. To date, more than 280 have done so. If you have worked for Martin Marietta in Denver for 25 years, but have not registered, fill in the coupon and send it to Leroy Hollins, Mail No. 1321, as soon as possible.

Name \_\_\_\_\_ Dept. \_\_\_\_\_ Badge # \_\_\_\_\_ Mail # \_\_\_\_\_ Ext. \_\_\_\_\_

Home Address \_\_\_\_\_ Home Telephone \_\_\_\_\_ Date Hired/Transferred \_\_\_\_\_



Neil Sedaka

## Inventors earn cash awards

Five employees have earned cash awards for inventions. Those receiving the awards and their inventions:

Frank V. Bilek and Robert H. Mann, MX assembly, test, and systems support: continuous roller suspension using an integral drive system.

Philip R. Horkin, electronics: analog offset weight circuit.

H. Michael Thomas, electronics: digital encoder using a resolver as a phase modulator.

John J. Turcheck, personnel: demating tool for rectangular connectors.

## Employees earn NASA cash awards

Employees have earned cash awards and recognition certificates for inventions during performance on NASA contracts and for publication of new technology disclosures in *NASA Tech Briefs*.

Earning invention awards were Ronnie L. Campbell and Ronald E. Graese, engineering mechanics, for a thermal protection system flight repair cure-in-place material.

Receiving awards for publications were Virgil F. Young and David D. Wilson, electronics, for a study of digital charge coupled devices, and Elvis D. Simon and Dr. Wayne E. Simon, engineering mechanics, for a method of improving performance of Shuttle external tank diffuser.



## Minority, female professional hiring is growing here

An aggressive affirmative action program has increased the number of minorities and females in professional positions here. According to Tom J. Perry, manager of personnel administration and affirmative action programs, minority professional employment has increased 222 percent since 1976 and female employment has increased 426 percent in the same period.

The increase has been achieved despite the relatively few female and minority engineers being trained. Perry said that nationally only 2.4 percent of those being trained in the technical disciplines are female and only 5.2 percent are minorities.

To overcome this statistical disadvantage, Denver Aerospace is using several methods.

Typical of the effort is the working relationship developed with the National Society of Black Engineers chapter at the Polytechnic Institute of New York in Brooklyn. Since 1979, the Society has worked closely with Denver Aerospace in the selection of co-op students for the summer intern program and also to recruit talented professional people for permanent positions.

Two students who were interns last summer, Trevlin Blackman and Kelvin Grimes, became permanent employees this summer. Both are mechanical engineers. Four other students were hired following graduation. They are Lennox Ruiz, John Wang, Marconi Nicholls, and Kirby King. Ruiz is returning to Polytechnic to complete his master's degree in mechanical engineering.

This year's summer interns are Nicholas Mitchell, Fritz Armand, Kenwyn Gooding, and Gary Horsham.

Mitchell, a senior majoring in aerospace engineering, is president emeritus of the Society and is serving his second year as an intern here. He is working in analytical mathematics.

Armand, a senior, and Horsham, a junior, are majoring in mechanical engineering. Armand is assigned to propulsion engineering and Horsham to stress analysis.

Gooding is assigned to communications electronics. He is a senior in electrical engineering.

Dr. Charles Hall is serving as technical adviser.

## Four earn awards for issued patents

Four employees have earned awards for patents issued on their inventions.

They are:

Robert L. Gates, space systems, and Norman A. Osborne, electronics: isolation system.

Dr. Jackie O. Bunting and Dr. Wayne E. Simon, engineering mechanics: ejector utilizing a vortex flow.



Students and graduates from the Polytechnic Institute of New York are among new employees and summer interns here. Left to right are Fritz Armand, intern; Kevin Grimes, an employee; Gary Horsham, intern; Trevlin Blackman, employee; back row, Nicholas Mitchell, intern; Lennox Ruiz, employee; Tom J. Perry, manager of personnel administration and affirmative action; and Kenwyn Gooding, intern.

## Family day at Lakeside August 22

The annual Family Day will be held at Lakeside Amusement Park, 45th and Sheridan, Saturday, August 22.

Park gates will open at 11:30 a.m. exclusively for employees and their families.

Rides, except for the speed boats and the sky slide, will be free from noon until 6:00 p.m.

Ongoing events include:

12:00 to 6:00: El Jebel clowns  
1:00 to 4:00: Fish pond, children 10 and under.  
1:00 to 4:00: Free miniature golf  
2:00 to 5:00: Disco music, Royal Grove Plaza

Special events:

12:30 to 1:10 and 1:30 to 2:10: "Rare Moment," song and dance group in Central Park  
2:30 to 2:45: Treasure hunt, 5, 6, 7 year olds  
3:15 to 3:30: Treasure hunt, 8, 9, 10 year olds  
3:00 to 3:30 and 4:00 to 4:30: Puppet show in Central Park.

Department administrators will pick up Family Day tickets August 10 or August 11 from 9:00 a.m. to 4:00 p.m. in the recreation office, Eng. 124G.

Rain date for the event is September 5.

## Thank you

The family of Cleveland A. Claxton gratefully acknowledges the kind expressions of sympathy to all those whose donations, in his memory, benefitted the Burned and Crippled Children's Hospital in Salt Lake City, Utah.

## Recreation

**Ski Club:** The Satellite Ski Club has planned three summer events. A beach party will be held at the Chatfield Recreation Area August 1; a motorcycle trip will be taken August 7-9; and the club will go back-packing in the Aspen area August 14-16. Details of the outings may be obtained from Dee Hale, the club's vice president, Ext. 6191 or 4295. Other officers for 1981-82 are Alan Rice, president; Sandra Piallet, secretary; and G. Gordon Duncan, treasurer.

**Parapsychology:** Jai Sodhi will speak on palm reading August 20, 5:00 pm, in the engineering presentation room.

**Show discounts:** The Turn of the Century is offering discount tickets to employees for Bill Cosby appearances. Employees may purchase tickets for \$10.00 (a \$3.95 discount) for shows Friday, August 7 at 8:00 and 11:00 pm; Saturday, August 8, midnight show; and Sunday, August 9, 7:00 and 9:45 pm shows. Call the Turn for reservations and identify yourself as a Martin Marietta employee to receive the discount. All tickets are subject to a 40-cent service charge.

## RTD monthly passes to be available

The share-the-ride office is offering monthly RTD local bus service passes to employees. The unlimited ride pass is \$24 per month—a 20 percent discount over the cash fare based on 22 roundtrips per month.

Most bus service to Martin Marietta facilities is classed as local service.

An RTD policy change has reduced the discount on tokens to 10 percent.



# Quality circles offer employees opportunity to solve problems



**Bailey**



**Hence**



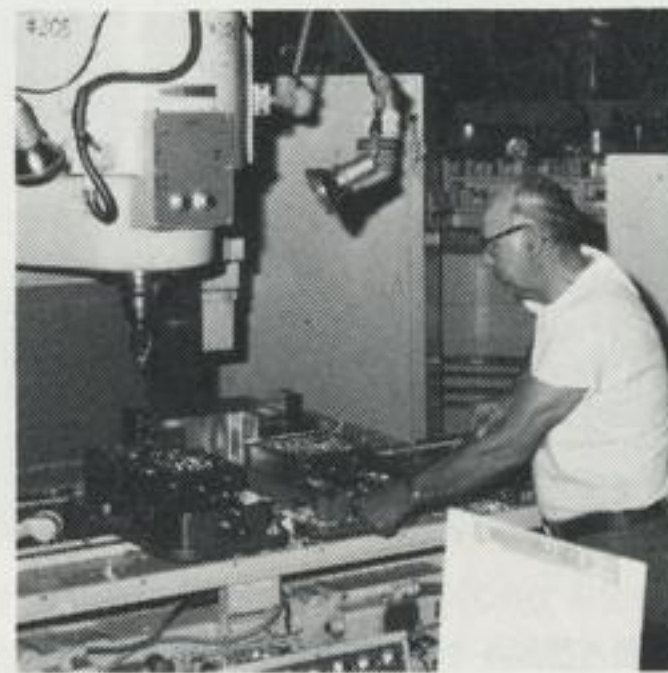
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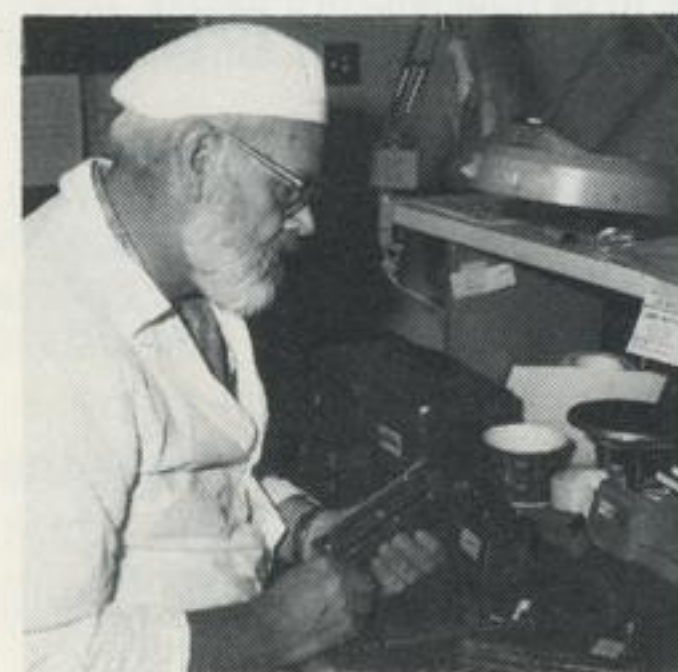
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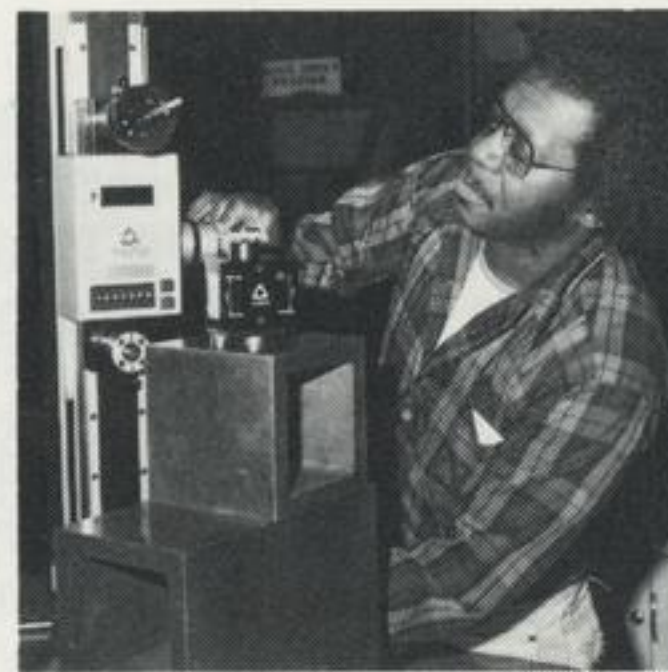
**Oswalt**



**Reed**



**Yamada**



**Williams**

## Ramon J. Bailey

*"Through our Quality Circle we have been able to get help in organizing our supplies and tools. The time and space saved has helped us all in the model shop. We look for solutions to problems that benefit everyone."*

## Betty J. Hence

*"I'm a firm believer in Quality Circles. They help everybody. Writing down the problems is a sure way of seeing that they become action items and that someone is working on each problem. The right people listen to our suggestions."*

## Ray R. Jereaw

*"Replacing worn dies had the number one priority in our Quality Circle. Just as we do with all problems discussed, we researched the solutions and the costs and then made our recommendations. I am interested in solving problems because it makes my job easier and I can be a little bit proud of the work I turn out."*

## Mary Loy

*"We have successfully solved a problem in our Quality Circle regarding hand tools. When we made our presentation on hand tool requirements management listened. We got to pick out the tools we needed to do work properly on the wiring harnesses. We have accomplished a number of changes that help us in our work."*

## Morris Z. Neely

*"We have 104 items we are working on in our Quality Circle. We can work on anything we set our minds on. Older heads and young employees get together and work on the ideas. We do get things done."*

## Ellis T. Oswalt

*"Through the Quality Circle we have gotten better lighting—both overhead and on each machine. Solving problems makes my work easier. Through Quality Circles we can get people to listen to our suggestions for improvements. The improvements make for a more content shop and we can keep some of the young people who have come to work for us."*

## George A. Reed

*"By standardizing replacement screws in the encapsulation molds we will save about 240 hours of labor a year. We had to have a bunch of screwdrivers to work on the molds because bad screws had been replaced with whatever was handy. We are replacing them with three standard-size hex head screws. We have about 100 molds and each time a mold is used the screws are used three times."*

## Edna Yamada

*"I named our Quality Circle 'Kiva' for the circles in Mesa Verde where the Indians gathered to discuss and solve their problems. That's what we do. Naturally, I approve of the Circles because of their connection with Japan, even though I am a native born American. We have accomplished many things, including getting better lighting for our work."*

The Quality Circle, a technique U. S. experts taught the Japanese at the end of World War II to aid Japan's industrial recovery, is coming back home to aid industry here.

But it is coming back with a twist. What was taught to production professionals, the Japanese taught the workers on the line.

In its revised version, the Quality Circle is a group of workers who meet regularly, using about an hour a week, to discuss production problems and to research solutions to the problems.

At Denver Aerospace, the Circles deal with work methods, cost efficiency, equipment, safety, the quality of work life, the quality of products and services, and other topics in manufacturing operations.

Under the tutelage of Hal L. Gariety, the Quality Circle administrator, the volunteer Circle members hold brainstorming sessions in which any subject pertaining to production may be suggested for discussion. After listing the subjects, Circle members pick those of greatest importance and set priorities for solving the problems.

When members have completed their research and reached what they believe is the proper solution, a presentation is made to those in management who can approve the recommended action.

Gariety, who lectures regularly on Quality Circles to government and industry groups, says the success of the program is based on two elements.

*"The employees must be thorough in their recommendations and management must be committed to listen and to act," he said. "Although I am never totally satisfied with our progress, I believe we are making great strides in achieving the goals."*

Lee Fryberger, a retired U. S. Navy commander, has recently joined the company to work as a Quality Circles facilitator. He will be assisting in the ongoing program.

There are more than 350 employees participating in 35 Circles.

How some of the employees react to Quality Circles can be seen in their comments on this page.

## Ernest O. Williams

*"I'm not a member of a Quality Circle because I don't have time to participate. I have suggested items for a Circle to work on. They have helped me get some precision equipment that helps me do a better job. I'm not going to join, but I'll keep giving them ideas."*

## A. J. McDonald

*"As a supervisor I am pleased with the way my people participate in the Quality Circle program. The Circles help productivity, give the employees some recognition, and are confidence builders for the employees. The employees are also learning about the company. I don't pressure them to join. It is a voluntary program. I don't believe it would work if there was pressure to join."*



## Lunch schedules, recreation area rules are emphasized

Employees are reminded that schedules have been issued for lunch periods in the cafeterias and that they should be observed.

Recently, lines at the cafeteria, especially when it opens, have indicated that employees are not following the schedules. If you are not certain when you are scheduled for lunch, department administrators, department secretaries, and the cafeteria office can provide the schedule.

Employees also are reminded that lunch periods are for 30 minutes.

Some employees have been observed using the recreation area, jogging, and bicycling on lunch periods. Government audits are conducted regularly of time charged to contracts. Employees who take longer than 30 minutes for lunch are violating contract regulations.

Employees are asked to cooperate in observing lunch schedules in the cafeterias and in adhering to the 30 minutes allowed for lunch.

## 50 carpools are certified at DSC

Following a special share-the-ride promotion at the Denver Systems Center, 50 carpools have been certified and another 150 employees have submitted applications for the program.

The applications have been sent to the Denver Regional Council of Governments (DRCOG) for processing in the computer-matching program. Applicants will receive a list of names of others who live near them and have the same work location and hours. Employees may then call those on the list to establish carpools.

When carpools are arranged, they should be registered with Laurie Sharp, the share-the-ride coordinator, at Ext. 6750.

Carpoolers at DSC will be assigned reserved, covered parking.



A Martin Marietta check for \$9,000 was presented recently by John H. Boyd Jr., director of public relations, left, to Donald R. Seawell, chairman of the board of the Denver Center for the Performing Arts. The gift will support the Denver Center Theatre Company's school tour program.

## Safety goals revised for remainder of '81

Noting that Denver Aerospace has had a lower injury rate than that established as a goal by the Corporation, C. B. Hurtt has asked that the goals be revised.

"I believe that we can maintain or better the performance we achieved during the first quarter of 1981," Hurtt said. "Our record for the first quarter will be our goal for the year."

"I believe safety plays a most important part in our operations and is a key element in meeting high standards of performance," Hurtt added.

Robert B. Morgan, manager of personnel safety, will continue to monitor safety performance.

Three goals were established for each Martin Marietta operation. They were, 1. insure that no fatality occurs; 2. insure that no serious injury occurs; and 3. achieve a lost workday incidence rate not to exceed established goals.

Denver Aerospace has met all three goals.

## Martin Marietta team wins corporate games

The Martin Marietta team won the first Denver Corporate Games, held to benefit the Special Olympics.

Scoring 50 points, employee athletes almost doubled the 26.3 score of the second place Public Service Company team.

Thirteen teams participated in the event.

Events, results, and employee participants:

10 kilometer race: Team second place. **Men:** David Crain, 38:30; Michael McTague, 36:13, 1st in age group; Richard Croteau, 38:08, 6th in age group; Thomas Bailey, 36:20, 1st in age group. **Women:** Laurie Fester, 39:36, 1st in age group; Cynthia Pickering, 44:15, 2nd in age group; Susan Douglass, 49:57, 5th in age group; Beth Wade, 60:12, 4th in age group.

800 meter relay: Team first place (1:49.4). Marlene McGregor, George Lane, Laurie Glauth, and Steven Price.

1500 meter run: Team first place. **Men:** Michael Kelly, 4:16.97, 1st; **Women:** Rochelle Baker, 5:58.6, 4th.

Racquetball: Team ninth place. **Men:** Richard Truax, 6th. **Women:** Jennifer Hoette.

Volleyball: Team first place. **Men:** 2nd, David Wolff, Robert Williams, Neil Swanson, John Fisher, Gregory Drew, William Castor, Rex Fornsworth, and Charles Blum. **Women:** 1st, Barbara Wooley, Donna VanDyke, Kathryn Hrouda, Mary Ann Baker, Linda Wilmot, Jean Stephens, Sheri Leonard, and Leslie Hanna.

Bowling: Team first place, 6704 total pins in 6 games. Robert Baker, Richard Watts, Terry Delp, Mary King, Kathryn Johnson, and Judy Geilbert.

Tennis: Team fifth place. **Men's singles:** Brian Gallagher, 3rd. **Men's doubles:** Peter Rex and Ernest Berlinger, 3rd. **Women's singles:** Margaret Condon. **Women's doubles:** Helena Spindler and Kay Herder, 4th. **Mixed doubles:** Mary Ireland and Dwaine Robey.

Assisting the recreation office in organizing the teams were Glen Greisz, Anthony Robnett, Mark Jafrate, Dennis Long, Robert Baker, and David Wolff.

## Softball team turns rescue team at Vandenberg operations

A women's softball team at Vandenberg operations became a rescue team recently, rushing to the aid of a youth trapped under a car.

The 17-year-old boy had been replacing a rim on his car when the car slipped off the jack. The youth was trapped under the car and his thumb was caught under the rim.

Working together, seven team members and the manager, lifted the two-ton car and pulled the youth to safety. They treated him for shock and administered first aid until professional help arrived.

Doctors who treated the broken and badly cut thumb, surgically repairing nerve damage, said the women may have saved the youth's thumb.

Those involved in the rescue were Julia Ball, Lisa DeCaires, Michele Miclette, Gina Pendarvis, Sandie Warnock, June Yee, Joette Zeeman, and team manager John Broome.



Members of the Vandenberg softball team that turned rescue team were, left to right, Sandie Warnock, Joette Zeeman, team manager John Broome, Lisa DeCaires, and Gina Pendarvis. Other team members involved in the rescue were Julia Ball, Michele Miclette, and June Yee.

**MARTIN MARIETTA NEWS**  
Published by Public Relations  
**MARTIN MARIETTA AEROSPACE**

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Denver Aerospace

P.O. Box 179 • Denver, CO 80201

July 1981



## Canaveral railroad crew operates 21-mile line

Three railroad locomotives that are Korean conflict veterans are being operated on 21 miles of track by a Canaveral operations crew for the Easter Space and Missile Center at Cape Canaveral Air Force Station to move Titan launch vehicles.

Members of the crew are Charles Harris, system lead engineer; Claude Cornett, lead technician; and Robert Gibson and Thomas Nelson, locomotive operators.

The three engines, 16 flat cars, and a set of undercarriages move the mammoth missile transporter with the core booster from the vertical integration building to the solid rocket motor assembly building. When the two solid rocket motors are mated to the core vehicle, the vehicle is moved to the launch pad where the transporter serves as the Titan launch platform.

To move the transporter, two locomotives are positioned side by side on parallel tracks. A boom containing pneumatics and electrical circuits to control both locomotives from the cab of one connects the two engines.

The engines, especially modified for their mission, each sustained direct hits from artillery and small arms fire in Korea.

Average travel speed for the short runs at Canaveral is three and one-half miles per hour.

The railroad crew and the rolling stock also move liquid propellant tank cars and solid rocket motor segment cars from the Florida East Coast Railroad dropoff point to areas on the base.

Emphasizing safety and maintenance, the crew has operated the line for the past seven years with no accidents, no injuries, and no equipment downtime.

## CCMS contract is expanded at KSC

Denver Aerospace has been awarded a supplemental agreement to an existing contract at Kennedy Space Center. The NASA award provides for communications security devices to be incorporated in the Space Shuttle checkout and launch support facilities.

The contract supplement calls for installation of encoding and decoding devices in the checkout, control, and monitor subsystem (CCMS) of the launch processing system used to checkout and launch Shuttle. The new equipment, designed to enhance security for sensitive communications, will be installed in the launch processing system in launch control center firing rooms.

Value of the cost plus fee agreement is \$5,360,676 and brings the total value of the Denver Aerospace contract at KSC to \$101,781,432. The overall contract covers the period February 4, 1980 through January 1, 1982.



Houston employees working on the payload integration contract (PIC) supported the first Space Shuttle flight. Working with the Air Force flight support group at Johnson Space Center, the group monitored the flight control performance of the orbiter and reentry temperatures. In the photo, D. L. Wyche, staff engineer, shown with both hands on the console, was teamed with senior Air Force officers during the flight. Those at the console with Wyche are, left to right, Lt. Col. Michael Reece, Lt. Col. Terry Spencer, Maj. Gordon Ducote, (Wyche), Capt. Daryl Ernst, and Lt. Col. Martin Meers.

## Las Vegas trips won by engineers

Two engineers, one in Denver and one in Sunnyvale, have won Las Vegas trips for two in "The Name Game" drawing held July 6.

Winners were W. J. Weber, a design engineer here who joined the company in June, and Dean Goddard, a principal engineer on the payload integration contract.

The winners were among 343 eligible for the drawing, 219 at Denver and 124 at offsite locations.

Since the beginning of "The Name Game" phase of the employee referral program in March, 1304 employees have received cups and qualified for

Las Vegas trip drawings for qualified referrals. Of those, 415 have qualified for the Acapulco trips when candidates they referred were hired.

Since January, 535 employees have been hired through the employee referral program.

## Savings bond drive shows increase

The U. S. Savings Bond drive has been completed with participation increased over last year, but still lower than in earlier years.

In Denver, 73 percent of the employees have signed payroll deduction cards, up from 58 percent at the beginning of the campaign. However, the participation is down from previous years when it was more than 90 percent.

Cape Canaveral participation is the highest with 98 percent. Michoud division follows with 94 percent. At Vandenberg, participation is 63 percent, up from 48 percent at the beginning of the drive.

## Corporate gifts, grants aid in New Orleans

Martin Marietta gifts and grants of \$9,400 have been presented organizations in New Orleans to aid them in their service to the community.

Slidell Memorial Hospital and Pendleton Memorial Methodist Hospital each received \$2000 grants. The Slidell Hospital will use the funds to help purchase CAT scan equipment. The funds will be used by the Methodist hospital to assist in building an alcohol detoxification unit.

A donation of \$500 went to the New Orleans Sickle Cell Anemia Foundation to help fight the debilitating disease.

The Louisiana Independent College Fund received \$1000. The Fund provides partial support for three independent Louisiana colleges, Centenary College of Louisiana in Shreveport, Louisiana College in Alexandria-Pineville, and Our Lady of Holy Cross College in New Orleans.

A gift of \$700 went to the Opportunity Industrialization Center which provides training and industrial employment opportunities for minorities and the disadvantaged.

Junior Achievement of Greater New Orleans received \$700. The Michoud division also participates in JA by providing volunteer advisers for the teen-age companies and by sponsoring them of the companies.

The New Orleans Symphony Orchestra received a grant of \$2500 to help renovate the Orpheum Theater as a new home for the symphony.