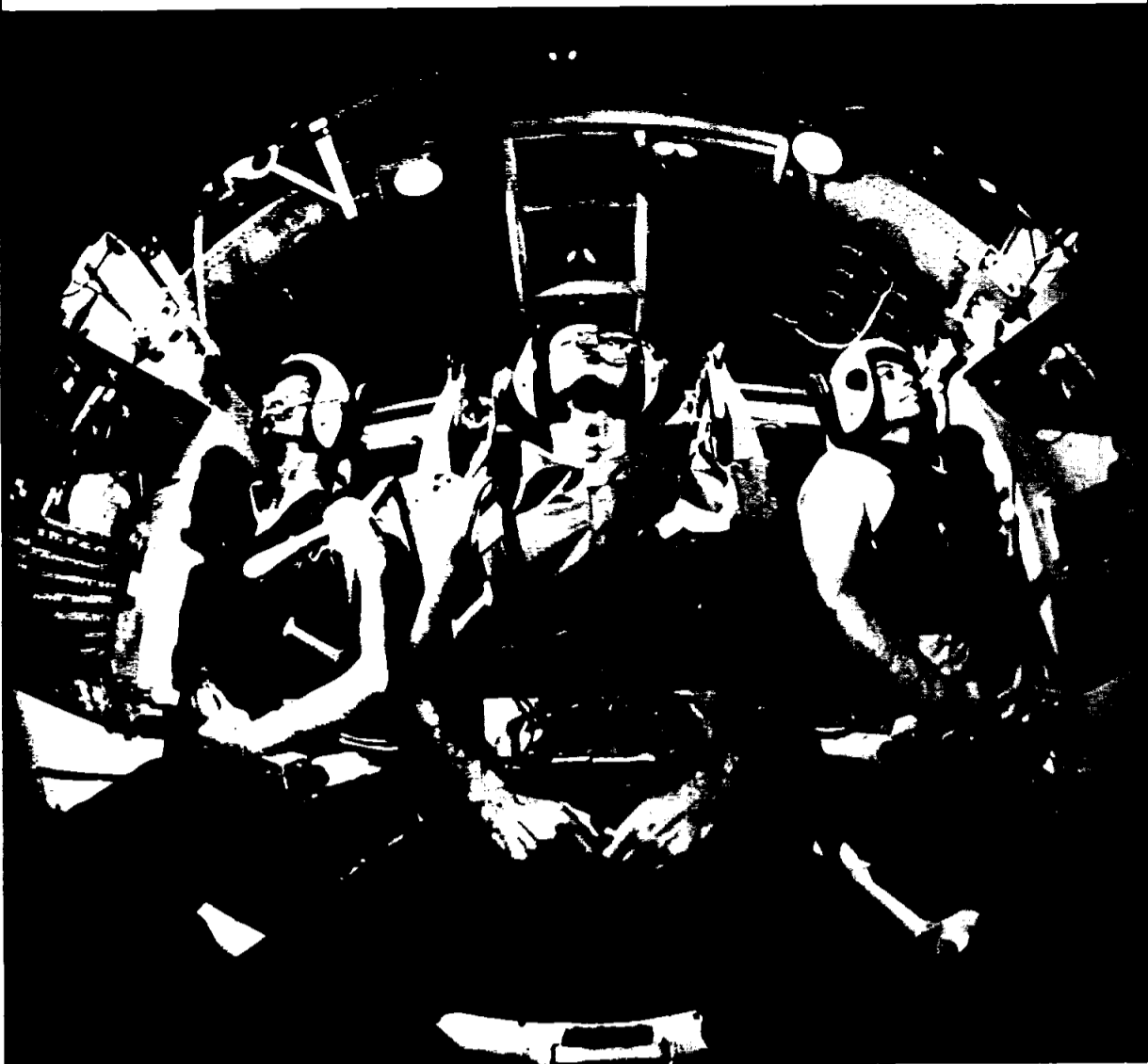


## Acceleration Profile



**EYEBALLS IN**—A fisheye-lens camera mounted in the gondola of the Flight Acceleration Facility 50-foot centrifuge caught this photo of three test subjects as they reach a peak of 10 g acceleration. Left to right are Jerry Kingsmill, Max Fox and Robert Thomas, all of the Occupational and Environmental Medicine Branch. The 12-foot diameter gondola is equipped with Apollo crew couches and simulated control panel layouts.

# Auto Accident Kills MSC Pilot Givens

MSC pilot Edward G. Givens, Jr. was killed in an automobile accident shortly after midnight June 6 south of Houston in Pearland. Officers investigating the accident said Givens apparently failed to make a sharp turn on Knapp Road and crashed into an embankment. Givens was pronounced dead on arrival at Southeast Baptist Memorial Hospital.



Two companions in the car with Givens, Air Force Reserve Lt. Col. Francis Dillorto of Chicago and Reserve Maj. William Hall of Meadville, Pa., were injured. Colonel Dillorto is reported in serious condition at Southeast Baptist Memorial Hospital; Major Hall is in fair condition.

The accident occurred when the officers were returning from a meeting of the Quiet Birdmen, a fraternal aviation organization. The meeting was held at the Sylane Motel on Telephone Road in Houston.

Givens, a 37-year old Air Force major, joined the program in April 1966 as one of a group of 19 pilots. He was a member of the support crew for the first manned Apollo flight. This support crew, composed of pilots Jack Swigert and Ron Evans, in addition to Givens, assisted the prime and backup crews in engineering details and preflight preparations. A successor will be named.

Givens is survived by his wife, Ada, formerly of Bedford, Mass., and three children, Catherine H., 4, Edward G., 3, and Diane,

2½ months. Givens was born in Quanah, Texas, where his parents, Mr. and Mrs. E. G. Givens reside.

Mrs. Givens was notified of her husband's death by Dr. Charles Berry, Director of Medical Research and Operations; Donald K. Slayton, Director of Flight Crew Operations and pilot Stuart A. Roosa.

Pilot Joe Engle, selected to the program in the same group as Givens, has been appointed summary court officer and he will assist the family in arrangements. The body was taken to the Art Simpson Funeral Home in LaPorte.

Memorial services for Givens were held yesterday morning at Seabrook Methodist Church. Funeral services are scheduled for this afternoon at the First Baptist Church in Quanah at 2:30, with burial following. Pallbearers are the prime and backup crews for the first manned Apollo Mission.

# ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



VOL. 6, NO. 17

JUNE 9, 1967

## Tank Welds Rechecked On A/S 501 2nd Stage

NASA announced May 24 plans for additional inspection of the second stage of the first Saturn V vehicle scheduled for test flight later this year.

The S-II stage was removed from the assembled Saturn V in the Vehicle Assembly Building at Kennedy Space Center, Fla., to check weld seams for possible defects.

The inspection is designed to uncover any "hairline" cracks which may have developed in the vehicle's welded joints as a result of pressurizing tests since

manufacture. The decision to take down the S-II stage and make the checks was made after such cracks were found in a later stage (No. 6) of the vehicle at the contractor's facility. The S-II is manufactured by North American Aviation, Inc., at its Seal Beach, Calif., plant.

The first Saturn V flight, designated 501, is scheduled for launch in the third quarter of 1967. The additional checks of the S-II stage at Kennedy Space Center are not expected to affect the launch schedule by more than a week or so.

The checks for weld cracks were made by using x-ray and by a dye penetrant technique in which penetration by the dye can reveal cracks otherwise not observable.

The liquid oxygen tank was examined while the S-II is mated to the overall launch vehicle in an upright position, but the stage had to be de-mated in order to gain access to check the welds in the liquid hydrogen tank.

The LOX tank checked out all right, and at *Roundup* press time, checks of the hydrogen tank had begun.

The 501 second stage has successfully completed test firing of six minutes duration on two occasions.

## AIAA to Hear Combat Chopper Project Leaders

Two program managers for the radically new Lockheed AH-56A "Cheyenne" Army combat helicopter-airplane will be featured speakers at the June 12 meeting of the Houston Chapter of the American Institute of Aeronautics and Astronautics.

The men are Army AH-56A project manager L.Col. Emil Kluever and Lockheed-California vice president and AH-56A program manager Jack G. Real.

Real will also discuss the Lockheed rigid-rotor system used on the AH-56A in its military aircraft applications.

The heavily-armed chopper is designed to escort troop-carrying helicopters while providing suppressive fire in the combat landing zones. The AH-56A is now in systems test and first flight is scheduled later this year. With a top speed of more than 250 mph, the "Cheyenne" will be nearly twice as fast as helicopters now in Viet Nam service.

The AIAA meeting gets under way with a social hour at 6, dinner (\$3.25/person) at 7 and program at 8. For reservations call Kathy Robbins at HU 8-1400 or 591-3030, or Pat Todsen at HU 8-0900.

## NAVIGATION HAZARD—

# Mutinous Boilerplate Scuttled by Gunfire

An Apollo boilerplate command module was sunk in the Pacific Ocean about 100 miles southwest of Hawaii after its towline was broken in rough seas during night pararescue exercises.

The destroyer USS *Philips* sank the boilerplate, valued at approximately \$10,000, with gunfire after trying for more than an hour to re-connect the towline in high waves and winds.

The boilerplate was put overboard by the *Philips* May 23 in four to seven-foot seas at the beginning of the night exercise. While the boilerplate Apollo was being retrieved, the hold-off-ring on the davit crane failed and the boilerplate had to be released. The hold-off-ring prevents the spacecraft from crashing into the side of the ship during lifting or lowering.

The *Philips* was ordered to tow the boilerplate back to port, rather than attempt to bring it aboard without the stabilizing device.

During the towing Wednesday, the recovery loop on the boilerplate parted and could not be re-connected. The *Philips* was instructed to sink the boilerplate to prevent its becoming a navigational hazard.

Charles Filley, a member of the Landing and Recovery Division who was aboard the destroyer, suffered bruises on the body when he was thrown to the deck while switching on the beacons and flashing light on the boilerplate prior to the beginning of the recovery exercise.

## Pilots Go Tarzan In Jungle School

Twenty-two MSC pilots are scheduled to attend the US Air Force Tropic Survival School in Panama June 11-17. Included are the 18 of the latest group and four of the scientist-pilot group. The remainder of the pilot team has completed the training.

Monday and Tuesday will be devoted to lectures and demonstrations at Albrook AFB, Panama Canal Zone.

On Wednesday, the pilots will be helicoptered into the jungle to establish three-man campsites. Each team will be equipped with an Apollo survival kit and each campsite will be out of sight and earshot of other teams.

The pilots will remain in the jungle until Friday, utilizing survival techniques, including food foraging, learned in earlier lectures.

## AFGE Installs Officers

New officers will be installed at the June 12 meeting of Lodge 2284 of the American Federation of Government Employees. The meeting will be at 5 pm in the Bldg 30 Auditorium.

New Lodge officers are: President Alma Hurlbert, First Vice President Paul Folwell, Second Vice President Billie Rowell, Recording Secretary Jean Stone, Secretary-Treasurer Norbert Philippi, Chief Steward Herman Fisher, Sergeant-at-Arms William Laycock. Mevy James will be chaplain and Helen Ragsdale will be the parliamentarian.

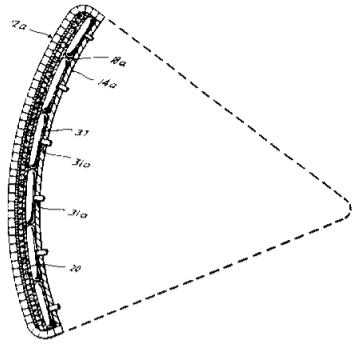
Lodge meetings are open to all MSC employees.

## Two Patents Awarded For Hardware Designs

US patents have been awarded to three employees of MSC for their design of a parachute line cutter and liquid-cooled heat shield.

Joseph A. Chandler and Thomas M. Grubbs received U. S. Patent Number 3,320,669 for their design of an improved parachute line cutter. Chandler and Grubbs are design engineers with the Spacecraft Design Branch, Advanced Spacecraft Technology Division of the Engineering and Development Directorate.

The new line cutter was successfully used during unmanned



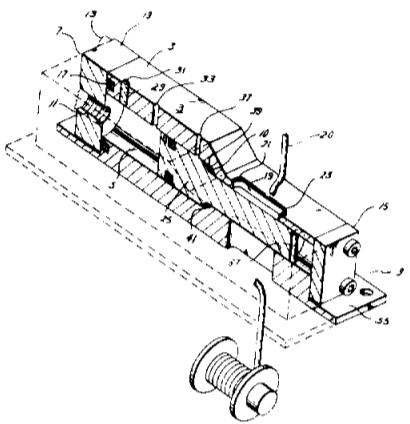
The design calls for a system to independently cool the leading surface of the ablator (heat shield) during the early, crucial moments of reentry when the amount of radioactive heat is at its highest point. Dr. Downs is with the Structures and Mechanics Division of E&D.

This brings to 36 the number of employees who have been awarded US patents for inventions related to manned space flight.

### Bridge Scorings

MSC Duplicate Bridge winners in recent play were: Tuesday, May 23: North-South/Mary Scott and Kay Dearman 1st; W. Hamby and R. Cohen 2nd; E. Brown and L. Walsler 3rd; East-West, Mr. and Mrs. R. L. Fagan 1st; R. Lynch and R. Donovan 2nd; and C. Castle and D. Boydston 3rd.

Tuesday May 30: Overall winners P. Swanzy and M. Powell 1st; Ann Bragg and Johann Oldfield 2nd; A. Manson and P. Neilsen 3rd; Mr. and Mrs. D. McCreight 4th.



landing development tests of the Gemini boilerplate spacecraft. The device was used to sever the turn control lines on the chute.

The liquid-cooled heat shield is the work of Dr. William R. Downs. His design is for advanced liquid-cooled heat shield for use on high-speed reentry vehicles returning from interplanetary space flights.

## Northrop Picked to Run Parawing Test Program

NASA has selected the Northrop Ventura Co., Newbury Park, Calif., for negotiations of a contract to conduct a research flight test program using an all-flexible parawing.

Experiments will be performed at various scales with remotely controlled unmanned vehicles to establish a body of parawing technology which could be potentially adapted to manned spacecraft recovery systems.

Total value of the contract is expected to be about \$3 million. The project will be managed by NASA's Langley Research Center, Hampton, Va.

The goal of this research project is to establish the suitability of the parawing for providing manned spacecraft with a capability for controlled descent in a shallow glide, thereby allowing a wide latitude for selection of a touchdown point on land or water. It is NASA's goal to extend recovery capabilities for the Apollo Applications Command Module to include land landings in the early 1970's.

The contractor will be re-

quired to develop all technical knowledge needed for the final design of a recovery system capable of handling a 15,000-pound spacecraft. This will include technology for materials, fabrication techniques, folding and packaging, deployment, aerodynamic performance and reliability.

Based on technical knowledge developed in earlier phases of research at Langley, Northrop will evaluate parawings in small size with 200 to 600-pound payload capacity and intermediate sizes of 5,000-pound capacity. Following test flights of these two versions, the contractor will design a large-scale 15,000-pound payload system.

In scaling the design of the different sizes, the contractor will follow the "single keel" and "twin keel" configurations developed in the parawing research program conducted through the years by Langley.

The flight tests will be made at two locations—the Joint Parachute Test Facility, El Centro, Calif., and MSC.

### Lunarfin's Offer Scuba Instruction

The MSC Lunarfin's skin and Scuba diving club will offer a certified course in the use of self-contained underwater breathing apparatus (SCUBA) beginning the last of June. The course will include technical diving information and supervised practical experience in the use of Scuba gear.

Spearfishing trips to the Gulf in recent weeks have been hampered by rough water, but two successful trips to the oil rigs south of Galveston reported 15 feet underwater visibility and 80° water temperature.

Lunarfin's have two boat charters planned for June to points 30 miles south of Galveston.

Several weekend trips to lakes in the Austin-San Antonio area were made by club members during April and May, and two days of diving and other water sports are planned for the first weekend in July at Canyon Lake near New Braunfels.

Lunarfin's have equipment and air refills available to members for diving trips. Persons interested in courses or other club activities should call Bill Moran at 2831.

### Ping-Pong, Anyone?

Persons who think they are pretty good with a ping-pong paddle, or who would like to become that way, are asked to call Manfred "Dutch" von Ehrenfried at 2337 to get an informal ping-pong league off the ground.

### Somebody Up There Likes Us



HALO ON STRAIGHT—Fighter jockeys etched a halo in contrails over the Center one day at noon last week and G. C. Fajardo of Lockheed Electronics unlimbered his 35mm Bolexy to capture the ice crystal corona on film.

## Lewis Scientists Test New 'Super' Magnet

The most powerful field ever produced in a large-bore superconducting magnet was achieved recently at the NASA Lewis Research Center.

The NASA magnet produced the 140,000 gauss magnetic field in a large-bore, superconductive solenoid. Such a high field over such a large volume has never been obtained before in either conventional or superconducting magnets.

Although immediate use of such "super" magnets may well be limited to research projects, future broader uses include possible applications to such well developed items as transformers, motors and generators. These could be significantly improved

by using superconducting materials. Electric power savings could be substantial, and such systems could be reduced in size by factors of 10 to 100.

Superconducting magnets are made of materials with the remarkable property that they lose virtually all electrical resistance at temperatures near absolute zero (-460°F.) There are 23 elements and numerous compounds and alloys which have superconducting properties.

Near absolute zero, internal activity in the atoms of any material is reduced. This allows electrons to pass more easily through the internal lattice structure. Thus, the material presents less resistance to a flow of electrons, or electricity. In the case of a true superconductor, however, the resistance vanishes completely and, once achieved, an electric current can flow as long as the low temperature is maintained.

### ALSEP Contract Changed to Include Heat-Flow Station

MSC has amended its contract with the Bendix Corp., Ann Arbor, Mich., for the Apollo Lunar Surface Experiments Package.

The contract amendment, which adds a heat flow experiment substation to the experiments package to be placed on the moon by US lunar crews, is valued at \$2.4 million. Total value of the contract is now estimated at \$23.6 million, plus incentive fees.

The heat flow subsystem will measure the net outward flux of heat from the moon's interior, providing a comparison of the radioactive content of the moon's interior and the earth's mantle, a thermal history of the moon, a lunar temperature-depth profile, and thermal parameters of the first three meters of the moon's crust.

When combined with seismic measurements, the heat flow experiment will provide information on the composition and physical state of the moon's interior.



ROJO GRANDE—Oilwell firefighter Paul "Red" Adair will be one of the drivers entered in the June 18 Clear Lake Rendezvous Cup Race. Several MSC space pilots are also expected to enter the 250-mile race which begins at noon and will last more than three hours.

## Three-Hour Boat Race Offers \$13,000 in Prizes

Several MSC and contractor throttle-benders will spend more than three vertebra-jolting hours pounding across wakes at 120 mph June 18 as they compete in the Second Annual Clear Lake Rendezvous Cup Race.

Prize money totaling more than \$13,000 has been posted for the race, and entries are expected from all over the state as well as from California, Flor-

ida, Arizona, Tennessee, South Carolina, Michigan and Oklahoma. First prize is \$2500 plus the DeMontrand Trophy. Lap prizes of \$50 for each of the 62 laps are in the kitty.

Spectator and pit areas will be on the north shore of Clear Lake south of Boat Town, but thousands of spectators are expected to view the race from several points around the lake.

INCLUDES POLAR AREAS—

# Orbiter IV Ends Job After 99% Coverage

Lunar Orbiter IV has completed its photographic survey mission by returning telephoto pictures of 99 per cent of the moon's front face.

The pictures provide scientists ten times finer resolution than best existing telescope views. For most of the area covered, this is a hundredfold increase in discernible detail.

The NASA spacecraft acquired high-resolution photographs of the moon's polar areas never before viewed from a near-vertical position, disclosing geological details previously unknown.

By its telephoto coverage of the eastern limb areas, it provided the basis for extending the cartographic grid system established for front-face mapping around to the hidden side, so that features there can be precisely located for future mission planning and operations.

In conjunction with its three predecessors, Lunar Orbiter IV raised to more than 75 per cent the total coverage of hidden side features.

The photographic mission of Lunar Orbiter IV was completed early June 1 with readout of the last of the 163 frames of photography taken and processed. Final readout had been

## Score Yourself On Service

Courteous and cooperative with visitors? Cheerful and friendly on the 'phone? Helpful in solving problems? Fair and open-minded about complaints? Accurate in providing answers? Letters really responsive, clear and concise? Less than 100% on these is failing!

## STADAN M&O Goes to RCA

The Radio Corporation of America Service Co. of Cherry Hill, N. J. was selected June 2 for contract negotiations to maintain and operate a portion of the NASA Space Tracking and Data Acquisition Network (STADAN).

The contract becomes effective next October 1 for a three-year period with NASA options of two one-year extensions for the agreement. The award, estimated at approximately \$38 million for the initial three-year period, will cover actual cost plus incentive award based on performance.

RCA Service Co. will provide services at the Rosman, N. C. and Fairbanks, Alaska STADAN sites, and at control centers for individual spacecraft at the Goddard Space Flight Center, Greenbelt, Md., NASA's STADAN headquarters.

underway since May 26 when the last pictures were taken.

Analysis and interpretation of the wealth of photographic detail returned by Lunar Orbiter IV will occupy scientists, map-makers, and planners of future missions for months to come, and the picture survey is likely to stand as the definitive source of lunar surface information for many years.

One Lunar Orbiter IV photograph released by NASA June 2 shows Mare Orientale, a huge and relatively young impact crater whose center lies beyond the western rim of the visible face of the moon. Its detailed geological interpretation, made possible by the vertical photography from Lunar Orbiter IV, should contribute importantly to a fuller understanding of the processes by which the moon was formed.

A study of the Lunar Orbiter IV photography is being made to support and confirm the selection of front face scientific sites to be photographed from lower altitudes during the fifth Lunar Orbiter mission, now scheduled for the third quarter of this year.

In preparation for that mission, engineers from NASA's Langley Research Center, Hampton, Va., controlling the flight of Lunar Orbiter IV, adjusted its orbit this week to one similar to that planned for Mission Five. The adjustment will lower the perilune or low point of the orbit to about 60 miles and reduce the apolune to about 2,000 miles. Tracking the spacecraft in the lower orbit will provide knowledge of the moon's gravity as applied to the high inclination, low altitude orbit planned for the fifth Orbiter mission.

The adjustment was made in two steps, with a velocity control engine burn Monday to adjust the perilune and a second burn yesterday to lower the apolune.

Before the orbital adjustments, Lunar Orbiter IV was operating with a perilune of 1,623 miles, an apolune of 3,844 miles, a period of 12 hours, and an inclination of 85.8 degrees.

During its mission, the spacecraft has performed 670 maneuvers and has executed 7,067 commands. It has recorded two micrometeoroid punctures on its sensors.

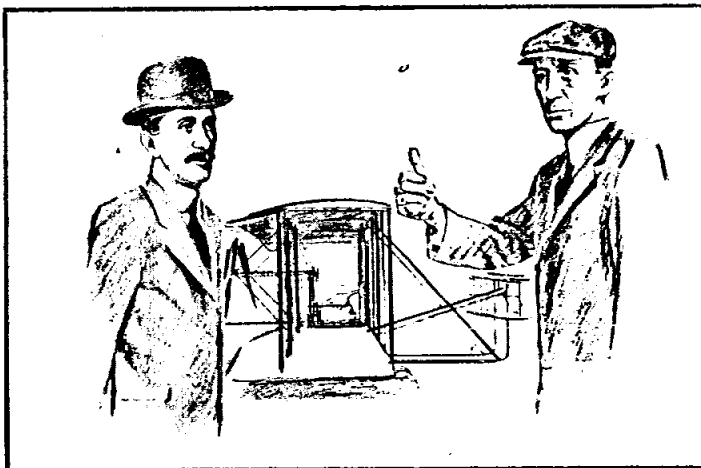
Sufficient attitude control gas remains in the spacecraft for all planned velocity change maneuvers and an extended life of several months.

Lunar Orbiter IV is managed for NASA by the Langley Research Center. The spacecraft is operated by engineers from Langley and from the prime spacecraft contractor, The Boeing Co., of Seattle. Tracking is provided by NASA's Deep Space Network operated by the NASA Jet Propulsion Laboratory, Pasadena, Calif.

## A Majority of One



**GETS GOLD LEAVES**—Lt. Col. Vince Lipovsky, commanding officer of Marine Corps Reserve Squadron VTNAVN-4, presents Corps orders to Squadron administrative officer Wayne Koons, chief of Recovery Systems Branch, notifying him of his promotion to major in the Marine Reserves. Squadron training officer Lt. Col. James Godbold is at right. Lipovsky is AVCO local representative and Godbold is manager of the Houston office of World Book Science Service. Koons was aircraft commander on two Mercury spacecraft helicopter pickups, and on the crew of five other Mercury recovery choppers before joining MSC.



## December 17, 1903...

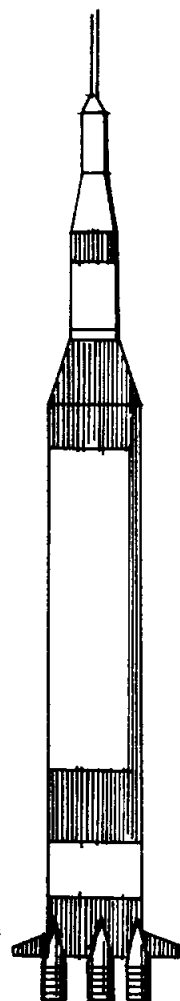
The Wright brothers' flight was not much, at least by Space Age standards; 120 feet traversed - twelve seconds aloft - in a trembling, fragile craft.

Not much, you say, yet without the knowledge, craftsmanship, and courage of these early pioneers, the advance of civilization would have been very slow indeed.

In today's Apollo, there are more than five and one-half million parts; many that must function with unprecedented accuracy when called upon, whether near the earth or a quarter million miles in space.

This is the year of Apollo, when the craftsmanship heritage of our pioneering forefathers is being put to the test; when quality in everything we do really counts.

Apollo success depends on it; depends on the best of each of us - every day of the year.



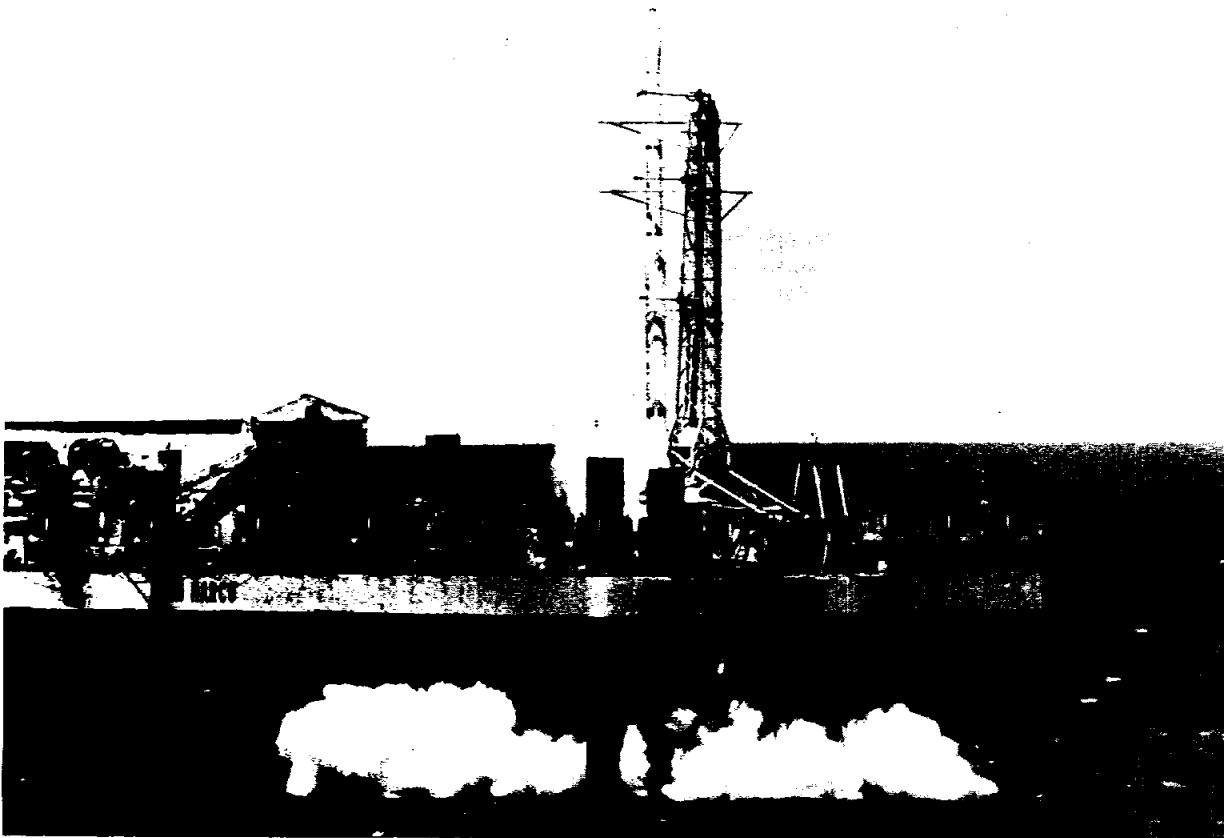
Keep



the Symbol of Excellence

MANNED FLIGHT AWARENESS

### First Sea Platform Launch



**EQUATORIAL ORBIT**—The Italian San Marco B April 26 was launched from a platform at sea off the coast of Kenya atop a NASA-supplied four-stage Scout launch vehicle. The satellite was designed to measure equatorial air densities continuously, and was inserted into an orbit with a 465 mile apogee and 136 mile perigee. Designed and built by the Italian Commission for Space Research, the San Marco project was carried out under a cooperative international agreement between the Commission and NASA.

### Has Paul Bunyan and Great Blue

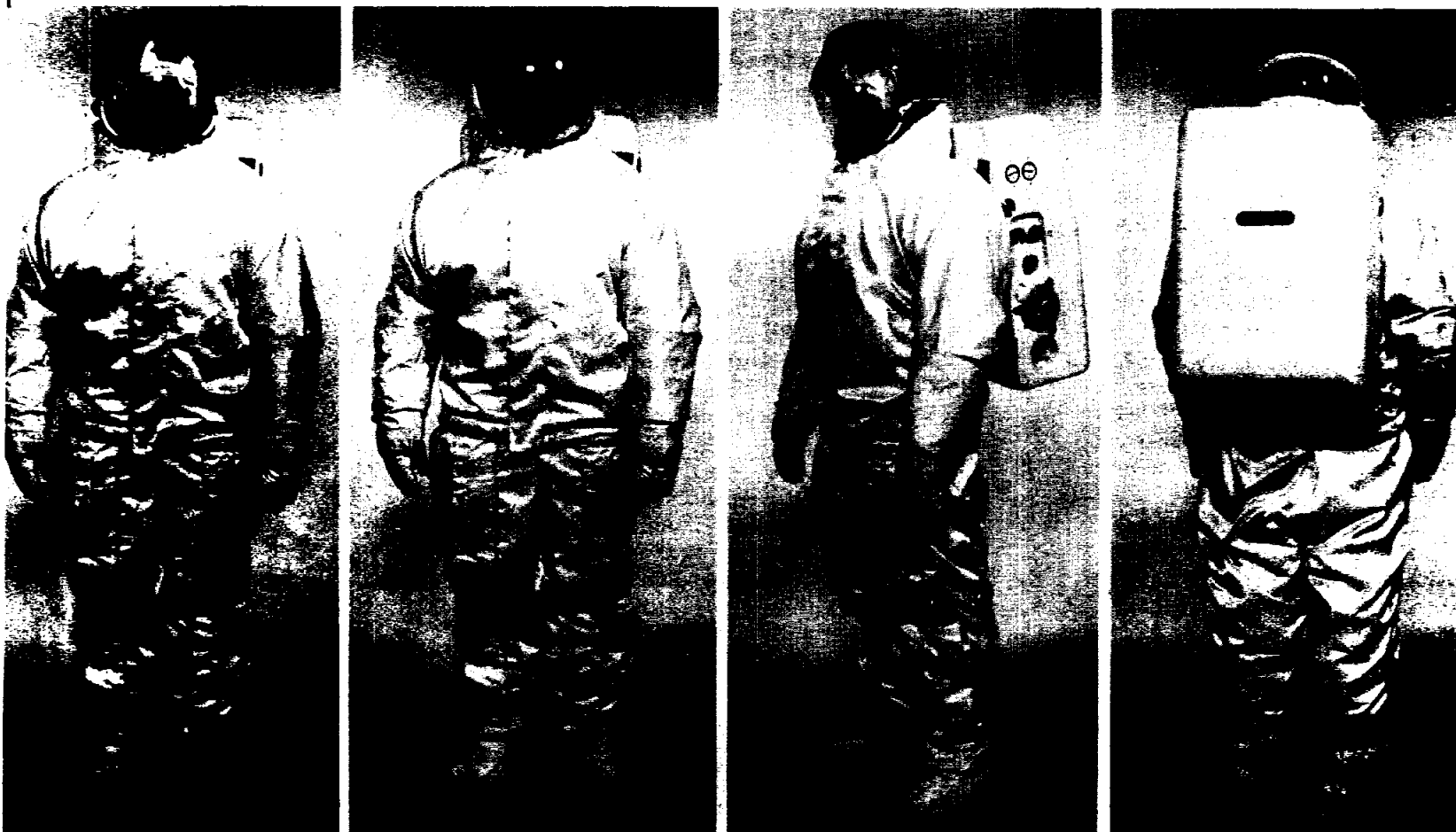


**MOON CRACK**—Lunar Orbiter IV's camera located a 150-mile long trough older craters and its freshness suggests that it is fairly young, but it is older outward from a large crater outside the photo and may have been induced.

# PHOTO ROUNDUP

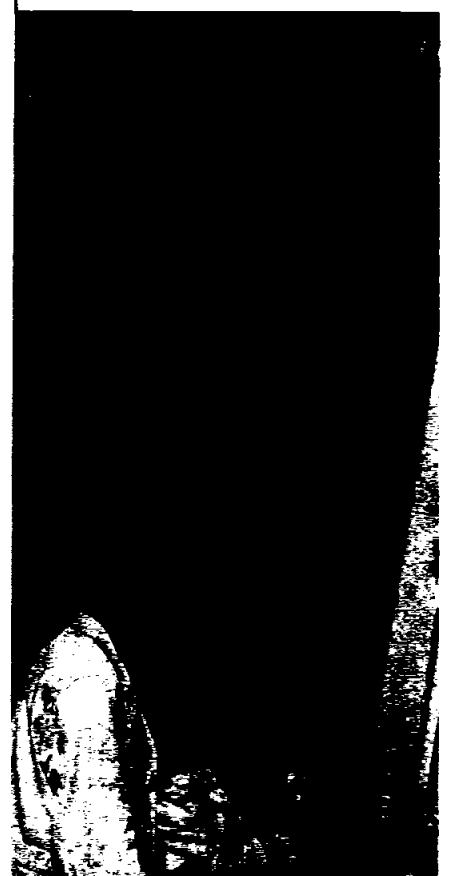
*...the space*

### On Twiggy, It Would Be An Improvement



**LUNAR STYLES**—An MSC test subject models an Apollo Block II Extravehicular Mobility Unit (EMU) in the pressurized mode. The photos show the thermal meteoroid garment consisting of extravehicular gloves, jacket, trousers and lunar boots, and with extravehicular visor assembly attached to helmet. Attached to the subject's back is the Portable Life Support System (PLSS). It is passe to say "space suit" or "pressure suit" nowadays; the term is EMU, not to be confused with the Australian bird of crossword puzzle fame.

### Joint Japan-US



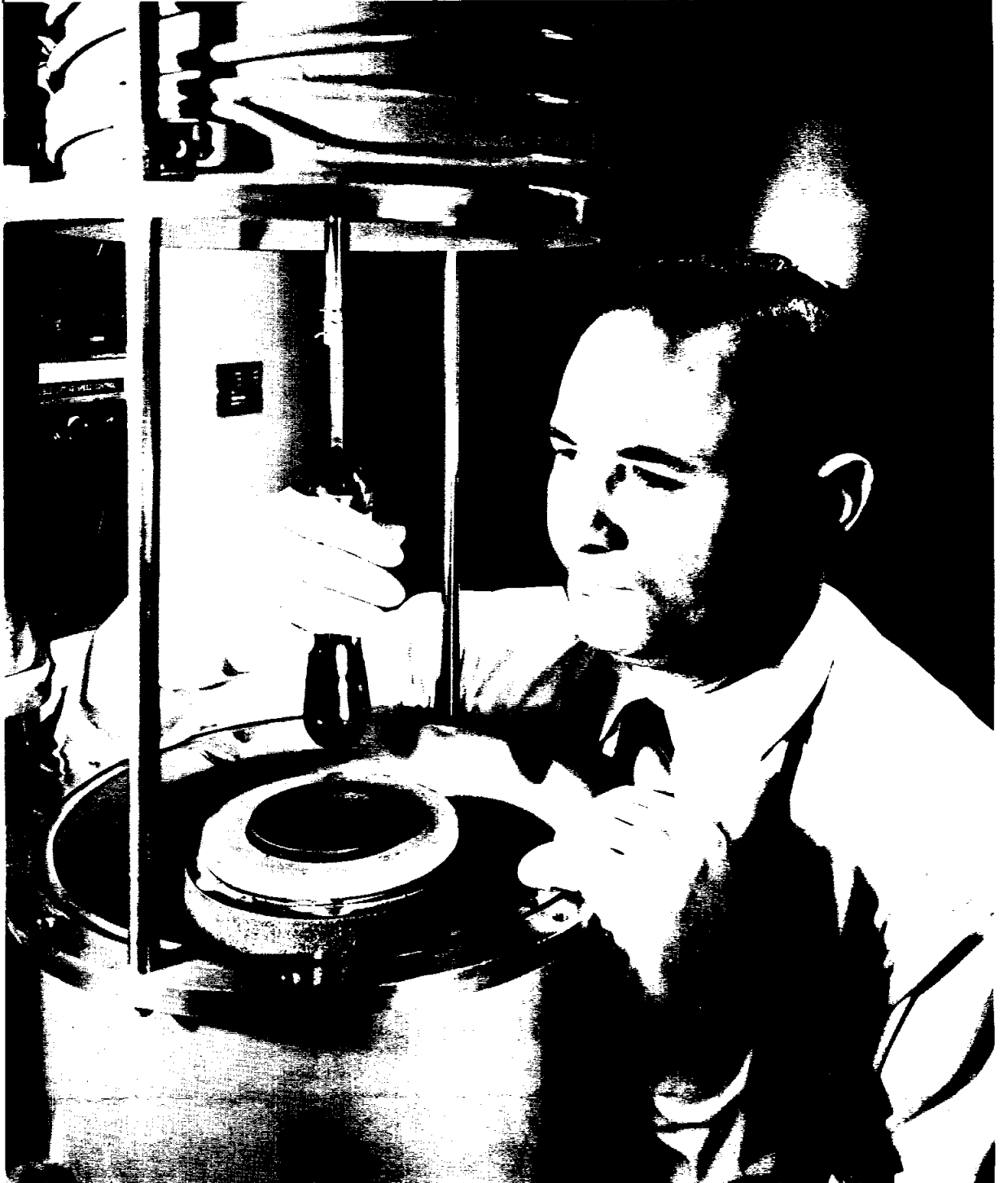
**TAKING AIM**—Members of the Japanese crew set the final elevation for the first of joint Japan-US flights. Comparison: the Japanese MT-135 launches and re-enters the atmosphere under an agreement between the Japanese Space Agency and the Meteorological Agency and the Meteorological Agency and the Meteorological Agency.

### Ox Babe Been Plowing the Moon?



on the lunar backside near the south pole. The trough cuts through several than the small crater that straddles one rim. The trough extends radially ed by shock from the impact which created the crater.

### Where the Silicon Ingots Grow

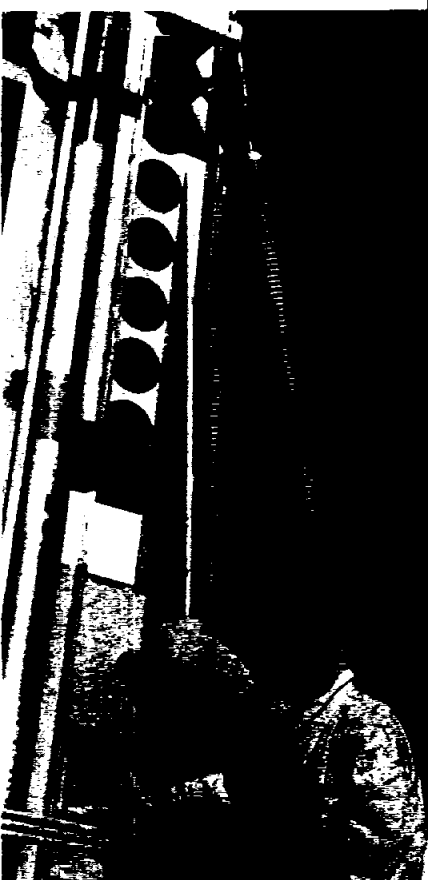


CRYSTAL GROWING—An ingot of single-crystal silicon is taken from a crucible after a six-hour growth process at NASA Lewis Research Center. The ingot is sliced into thin wafers for use in experimental solar cells being investigated by Lewis for their possible higher resistance to space radiation. Damage from radiation can severely cut the useful power output of a satellite's solar cells. The experimental silicon solar cells are exposed to a wide range of environments, including simulated space radiation in the Lewis cyclotron.

# NDUP

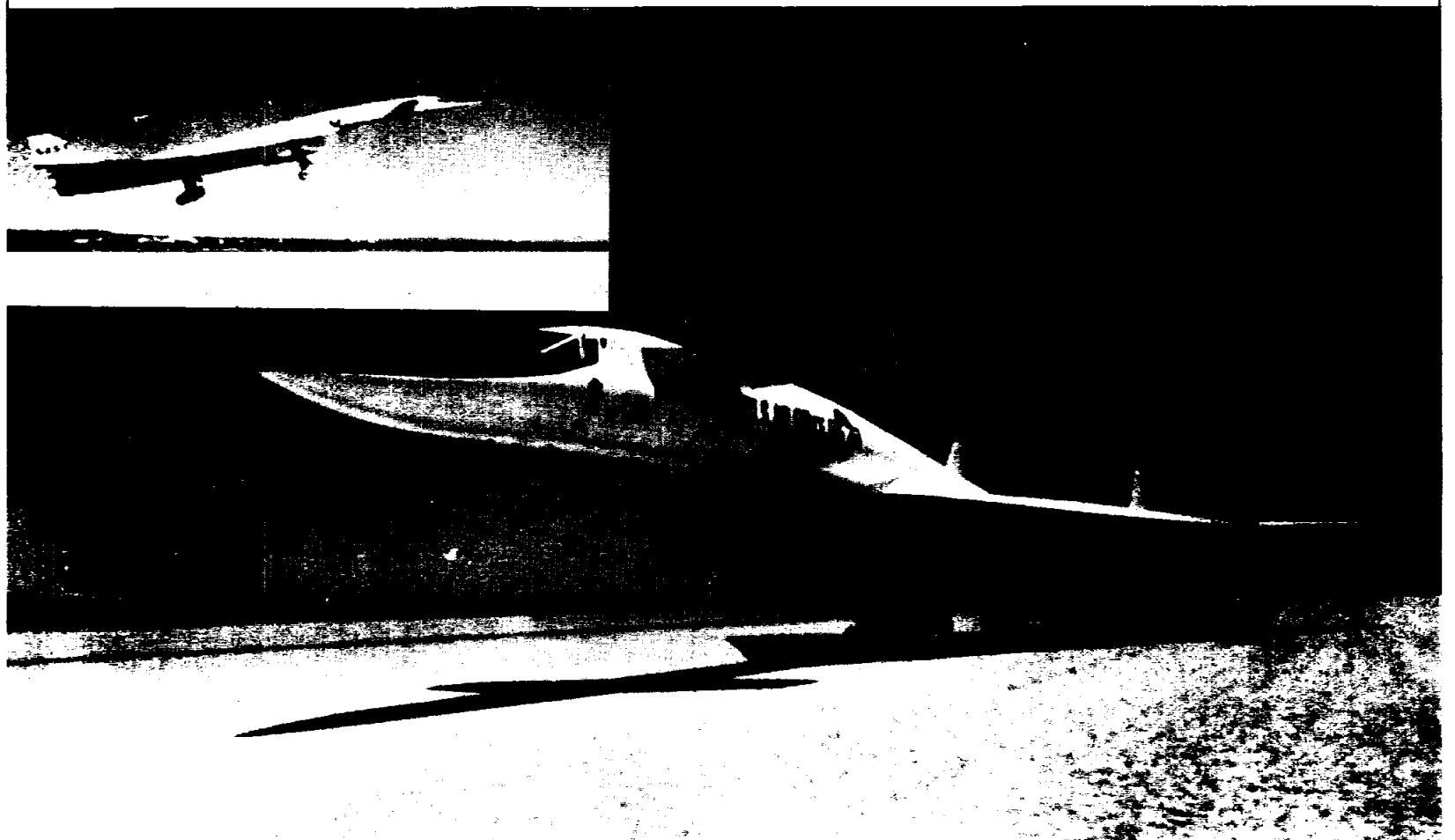
## *program in pictures*

### Weather Probe



the MT-135 meteorological rocket launch NASA Wallops Island launch in a series and cross-calibrations are run between altant data and information from NASA between NASA and the Japanese Science rological Agency.

### Forerunner of Supersonic Transport



SST RESEARCH—The XB-70 is readied at NASA Flight Research Center for its first flight under NASA program management. The XB-70 research program is to investigate dynamic loads and to define and evaluate stability and control characteristics and handling qualities of large supersonic vehicles as part of the national supersonic transport program. Inset shows XB-70 at takeoff.

# COMMENCEMENT EXERCISES for REDUCING WASTE!!



**COS**  
**REDUCTION**  
**PROGRAM**

The *Roundup* is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

Director ..... Dr. Robert R. Gilruth  
Public Affairs Officer ..... Paul Haney  
Editor ..... Terry White  
Staff Photographer ..... A. "Pat" Patnesky

## Five Ideas for Increased Savings

Have you ever thought that saving is just too difficult for you? If so, you have a lot of company!

But then a good many of our Credit Union members have decided to give it a try, and now saving is a part of everyday living. Here are five ideas they have used to make saving easier:

- A spending plan will help you see where your money goes — help you manage your spending.
- Pay yourself first. Include the amount for savings in your spending plan.
- Whatever the amount, it is regularity that pays off.
- Don't let loose change get away. Use a coin saver. Your Credit Union has banks.
- Let the Credit Union help you with your saving plan. And don't forget—the dividends you earn add to your Credit Union savings. You'll be surprised how fast they build up.

Grade	Annual rates and steps									
	1	2	3	4	5	6	7	8	9	10
GS-1	\$ 3,776	\$ 3,902	\$ 4,028	\$ 4,154	\$ 4,280	\$ 4,406	\$ 4,532	\$ 4,658	\$ 4,784	\$ 4,910
GS-2	4,108	4,245	4,382	4,519	4,656	4,793	4,930	5,067	5,204	5,341
GS-3	4,466	4,615	4,764	4,913	5,062	5,211	5,360	5,509	5,658	5,807
GS-4	4,995	5,161	5,327	5,493	5,659	5,825	5,991	6,157	6,323	6,489
GS-5	5,565	5,751	5,937	6,123	6,309	6,495	6,681	6,867	7,053	7,239
GS-6	6,137	6,342	6,547	6,752	6,957	7,162	7,367	7,572	7,777	7,982
GS-7	6,734	6,959	7,184	7,409	7,634	7,859	8,084	8,309	8,534	8,759
GS-8	7,384	7,630	7,876	8,122	8,368	8,614	8,860	9,106	9,352	9,598
GS-9	8,054	8,323	8,592	8,861	9,130	9,399	9,668	9,937	10,206	10,475
GS-10	8,821	9,115	9,409	9,703	9,997	10,291	10,585	10,879	11,173	11,467
GS-11	9,657	9,979	10,301	10,623	10,945	11,267	11,589	11,911	12,233	12,555
GS-12	11,461	11,843	12,225	12,607	12,989	13,371	13,753	14,135	14,517	14,899
GS-13	13,507	13,957	14,407	14,857	15,307	15,757	16,207	16,657	17,107	17,557
GS-14	15,841	16,369	16,897	17,425	17,953	18,481	19,009	19,537	20,065	20,593
GS-15	18,404	19,017	19,630	20,243	20,856	21,469	22,082	22,695	23,308	23,921
GS-16	20,982	21,681	22,380	23,079	23,778	24,477	25,176	25,875	26,574	27,273
GS-17	23,788	24,581	25,374	26,167	26,960	27,753	28,546	29,339	30,132	30,925
GS-18	25,990									

## President Recommends Civil Service Pay Hike

President Johnson has proposed to Congress a 4.5 percent pay increase for all except the very highest paid Federal civilian employees, to take effect October 1, 1967.

He recommended that Congress "take the final step this year to achieve full (pay) comparability with private industry," and proposed a two-stage plan to remove the remaining com-

parability lag in all grades by October 1, 1969. The first step would take effect in October 1968 and the second a year later.

Submitting the bill, the President said:

"Through the years, this Nation has built a corps of public servants whose quality is unmatched by any other country in the world.

"Our career employees are well-trained and experienced. In everincreasing numbers, they are skilled professionals. They include not only administrators and managers, but doctors, lawyers, diplomats, economists, scientists, engineers, actuaries, systems analysts, law enforcement officers, nurses—and many others critically needed to provide public services in a complex world.

"These men and women come to the public service not by chance but by choice. They come because they are challenged by problems that are far-reaching — and fateful. They come because Government offers unique opportunities for unselfish service.

"From them, we expect unusual dedication. In turn, they have a right to expect from their Government rewards that match their contributions.

Proposed rates for General Schedule employees are as shown above.

## Lunar/Planetary Missions Board Names Members, Expands Scope

The Lunar and Planetary Missions Board of NASA has expanded the scope of its activities and completed its membership.

The Board will assist NASA in the planning and conduct of all manned and unmanned missions to explore the Moon and planets.

The Board will develop scientific objectives and general strategy for such missions including specific recommendations for mission design and scientific payloads.

Principal scientific interests in lunar and planetary missions are:

- the search for information on the origin and evolution of life in the solar system including evidence of extra-terrestrial life; and
- the study of the origin and evolution of the solar system itself by observations of the environments, atmospheres, sur-

faces, and interiors of the Moon and planets.

A continuing examination of policy concerning transfer of living material between the planets will be conducted by the Board as well as an evaluation of the best means by which NASA can engage the scientific community in the study of the Moon and planets.

The Board will report to the Administrator of NASA, James E. Webb, through the Associate Administrator for Space Science and Applications, Dr. Homer E. Newell.

Dr. John W. Findlay, Assistant Director of the National Radio Astronomy Observatory, Charlottesville, Va., was named chairman of the Board on Feb. 20.

Other Board members are: Dr. James R. Arnold, Department of Chemistry, University of California at San Diego, La Jolla, Cal.; Dr. Allen F. Donovan, Aerospace Corporation, Los Angeles, Cal.; Professor Von R. Eshleman, Radioscience Laboratory, Stanford University, Stanford, Cal.; Dr. Thomas Gold, Director, Center for Radiophysics and Space Research, Cornell University, Ithaca, N.Y.; Dr. Clark Goodman, Department of Physics, University of Houston; Dr. John S. Hall, Director, Lowell Observatory, Flagstaff, Ariz.; Dr. Harry H. Hess, Department of Geology, Princeton University, Princeton, N. J.; Dr. Francis S. Johnson, Director, Earth and Planetary Sciences, Southwest Center for Advanced Studies, Dallas, Tex.; Dr. Joshua Lederberg, Department of Genetics,

School of Medicine, Stanford University; Dr. Lester Lees, California Institute of Technology, Pasadena, Cal.; Dr. Gordon J. F. MacDonald, Vice President for Research, Institute for Defense Analyses, Arlington, Va.; Dr. George C. Pimentel, Chairman, Department of Chemistry, University of California at Berkeley; Dr. Colin S. Pittendrigh, Dean, Graduate School, Princeton University; Dr. Frank Press, Department of Geology and Geophysics, Massachusetts Institute of Technology, Cambridge, Mass.; Dr. Eugene M. Shoemaker, Center of Astrogeology, U. S. Geological Survey, Flagstaff, Ariz.; Dr. James A. Van Allen, Department of Physics and Astronomy, The University of Iowa, Iowa City, Iowa, and Dr. Wolf Vishniac, Department of Biology, University of Rochester, Rochester, N. Y.

## What About Interest Rates?

What are you looking for when you borrow money? Low, low interest rates!

What really counts is the total interest you pay for the amount of money for the time span you need the money.

Comparison is the answer. Come to your Credit Union and get a flat answer, and then go to other lending agencies and find out the cost. You'll come back to us in most cases. Besides, you get loan insurance coverage when you borrow from the MSC Federal Credit Union at *no extra cost*.

### Idea Man



**DOUBLE SUGGESTOR**—Eillis B. Guess of the Reproduction Services Branch of Administrative Services Division recently received two Suggestion Awards—one for a copy-camera lens diaphragm control arm and indicator, the other for an improved method of draining developing fluids from an Itek Platemaster.

### Charter Handover



**NEW PRESIDENT**—Albert Naumann, left, newly-elected president of the Apollo Section of the Instrument Society of America, receives the Section Charter from outgoing president Alfred Eickmeier, assistant IESD chief. Naumann is director of the Electronics Branch of Lockheed Electronics Co. The 81-member ISA section's other new officers are Vice President Richard R. Richard, MSC; Secretary G. W. Puckett, Brooks Feeger and Puckett; Treasurer Frank Sawburger, GE; Delegate-at-large Earl Hicks, MSC; Alternate delegate W. L. Moore, Philco-Ford; Membership Chairman John Devillier, TRW Systems, and Publicity Chairman Lawrence W. Lockwood, G.E.

### Superior



**Sylvester Barrett**  
Supply Branch  
Sustained Superior Performance  
Award

# Roundup Swap-Shop

(Deadline for classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue. Send ads in writing to Roundup Editor, AP3. Ads will not be repeated unless requested. Use name and home telephone number.)

### FOR SALE/RENT-REAL ESTATE

5-bdr 3½-bath Early American home in Nassau Bay for lease. Gene F. Holloway, 18702 Point Lookout Drive, Ext. 2586.

5 or 6-bdr family house, living rm, dining rm, family rm, study, breakfast rm, ¾ acre-wooded lot on creek. \$37,500, commission paid. Imperial Estates, Friendswood. Les Thorn, HU 2-7816.

4-bdr (1 paneled) 2½-bath, 2-car garage with utility area, living rm, large paneled family rm with dining area, carpets, drapes, central air, dishwasher, disposal. Beautifully landscaped, large patio, fenced yard, community swimming pool. Assume G.I. loan 5¼% interest. J. W. Thompson, GR 1-2646.

4-bdr in Clear Lake City. Use of community recreation center. \$23,000, assume 5¾% loan. Tom H. S. Brown, HU 8-2310.

4-bdr 2-bath 2-car garage for rent, air, drapes, complete kitchen. 2 blks from El Lago School. 619 Bayview Dr, El Lago Estates. \$275/mo. Jim Cooper, 877-1836.

3-bdr 1½-bath, kitchen with built-ins and dining area, central air/heat, large living-dining rm combined, family rm, 4 walk-in closets, carpeting in living-dining rm, master bdr, and hall. Larger master bdr has dressing rm and unusual offset area suitable for sitting area, television, desk, etc. Drapes included. Back fenced, Reasonable equity and assume 5½% VA. 10310 Tolman. Franklin Mathews, HU 6-2957.

100' front, 120' rear (bayou), sides 140', 165', wooded lot in Bayou Crest subdivision, located ¾ mile west of Gulf Fwy on FM 517, 18-ft elevation bayou property, all subdiv lots sold. Rod Bass, 932-4763.

### FOR SALE—AUTOS

1962 Rambler Classic station wagon 4-dr delux 400 series, factory air, reclining bucket seats, headrests, vinyl interior, radio, autotrans. Orig. owner who ordered it from factory. \$875. Financing can be arranged; consider trade. Floyd Turner, RE 3-7667.

1958 Cadillac Coupe de Ville, extra clean, new double-duty battery, new tires, (no air). Best offer. Chris Critzos, Kemah 877-3218.

1962 Ford Fairlane, 49,000 miles, green and white, new tires, has sticker and plates, runs perfect. \$500. John Bergeron, 932-2148.

1962 MG Midget, 48,000 miles, Nassau Blue w/black top, has sticker and plates, good condition. \$350. John Bergeron, 932-2148.

1964 VW Karmann Ghia coupe, clean, one owner, AM/FM radio, pastel blue. \$1295. D. V. Massaro, HU 2-7976 after 5.

1963 Pontiac Bonneville station wagon, air, FM/AM radio, tilt-wheel, pwr steering, pwr brakes, other extras. \$1495. E. Kuykendall, 591-4096.

1960 Ford, 6-cyl, standard transmission, radio, heat and air, excellent condition. \$400. C. Latour, MI 9-4144 after 6.

1930 Model-A, 2-dr, all original, xclnt condition. See at Gulf station on NASA Rd 1 and Gulf Fwy. Dave Reed, HU 8-2151 or 591-2272.

1964 Corvette convertible, 365 hp, hi-pwr engine, 4-spd with positraction, factory air, AM/FM radio, tinted glass, elect. windows. Genuine leather seats and new Firestone 500 Super Sport tires. \$2495. H. E. Ream, 877-4308, Kemah.

1950 Plymouth, runs well, no rust. \$75. Bill Usitalo, MI 9-5918.

1964 Dodge Dart, Model 270, 4-dr sedan, charger engine, standard transmission, radio, heater and defroster, like new tires, 13,000 miles left on warranty. \$850. S. M. Luczkowski, HU 2-1425.

1963 Valiant Signet 200, 2-dr hrdtp, bucket seats, automatic, air, radio, heater. \$825 or best offer. E. Stewart, JA 9-1418.

1966 Porsche 911, red, 6-cyl engine w/overhead cams, 5 fwd spd gearbox, Blaupunkt radio, has late model 911 accessories, xclnt condition. New, \$7050. Now, \$4800. Rod Bass, 932-4763, League City.

1965 Ford ½-ton pickup, V-8 engine, new tires, air conditioned, heat, radio, spot-lights, 24,000 miles. \$1600. xclnt condition. J. L. Leppard, 498-6232, Houston or 534-3007, Dickinson.

### FOR SALE—MISCELLANEOUS

1966 Ducati motorcycle, 160cc, 70-75 mph, 90 mpg, 1500 actual miles, xclnt condition. Also helmet, tinted bubble, cable lock w/keys tarpaulin. \$300 for all. J. M. Walter, RI 8-5910.

Fender Stratocast guitar, new paint, 3 pickups, tremolo bar; Princeton reverb amplifier, new condition, has vibrato and reverb pedal, 30-foot cord. Vibrato alone \$150; amplifier alone \$100; both \$250. John Bergeon, 932-2148.

First Flite golf clubs, 4 woods, 8 irons, pitching wedge, putter, leather bag and matching cart. Originally \$300, asking \$150, will accept reasonable offer. Nat Hardee, MI 3-6274.

1966 Honda, CL 160 Scrambler Motorcycle, xclnt condition, 75 mph, 100 mpg, mirror windshield, helmet w/bubble shield. All for \$495.00 N. B. Mathews, HU 6-7641.

Sealpoint siamese kittens, \$15. Available June 3. Charles Eldred, GR 1-4332.

Adorable AKC champion sired blank standard poodle puppies. Gentle, loving family pets. H. Fisher, HU 4-1389.

Custom built storage cabinet/drawing table combination, \$15. Fresh kingfish from fishing trips, 20c per lb. Robert L. Carlton, GR 1-4539.

Female Black Toy Poodle, 1½ years old, AKC registered. All shots. \$100. Mrs. Garcia, HU 4-5596 after 6.

Large ceiling lamps. "Dutch" von Ehrenfried, 591-4163.

Puppies—beautiful AKC registered black toy poodles. Xclnt bloodline. One male and one female. Six weeks old. Sensibly priced. Roy Parker, 591-2253.

16' custom deluxe Hollywood boat with 35 h.p. electric start Evinrude, top, side curtains, bail well, bit wheel tilt trailer, water skis and outdoor storage cover. Everything ready to go. \$975. W. Gray, GR 4-2002.

17' boat, 40 h.p. Mercury and trailer. Skiing or bay fishing. R. Courtney, 877-2083, 2014 Shasta Drive (Glen Cove Park) Kemah.

### WANTED

Need small marine inboard engine, such as Kermath Pony 7-hp diesel, Palmer PW-27 8-hp or Universal Atomic Four in reasonably good condition (or needing overhaul) to power 25-foot sloop. Terry White, 932-4472.


Clarinet or Drums. Will trade for Holton cornet in excellent condition. Major C. W. Leaverton, GR 9-3759.

Carpool or ride between Park Place and Bldg. 2, 8:30 to 5:00. M. Rust, x 3044.

Would like to join or form carpool from Sharpstown. 8:00-4:30. D. Hill x 3417 or 774-0056.

### LOST

Gold drop earring Bldg. 2 or Parking Lot. Lost May 26. Reward. M. Rust, x 3044.



**MANNED  
FLIGHT  
AWARENESS**

## Aerobic Experts Highlight Airshow

Chandelles, Cuban-Eights and snap-rolls will highlight the Clear Lake Rendezvous Airshow tomorrow and Sunday at Spaceland Airpark in League City. Mary Aikins, former women's national aerobic champion flying a Pitts Special biplane and North American Aviation's Bob Hoover flying an F-51 are among the featured performers.

In addition to static displays of commercial and private aircraft, the show includes skydivers, a parawing demonstration, jet fly-bys and demonstration of short take-off/landing (STOL) aircraft.

The airshow is sponsored jointly by the Aero Club, Inc. and the Clear Lake Chamber of Commerce. Tickets at \$.50 each are available from Spaceland Airpark. Aero Club members and EAA representatives.

## Straight Talk from your Credit Union

Seems like some of our people don't know that the MSC Credit Union lends money for vacations. An article in the last issue of the Roundup noted that your Credit Union welcomes loans for vacations, and we've had people come in from all over the Center just to borrow money for a vacation. We hope more of you will come in. We know it's hard to save money for a vacation . . . so come see us!

Have you ever thought of consolidating your bills? How many accounts are you paying each month? Have you looked at the interest rates you are paying? Why don't you come into your Credit Union—we want to help. Service is what we have to sell.

Boat loans and airplane loans: did you know we are ready and willing to loan you money for these necessities of life? Come and see us. Boats and airplanes are a lot of fun . . . necessary, too (to some people).

Your Credit Union needs savers! We need your money . . . and we are borrowing money to lend to MSC Credit Union members. It costs us (and you) when we have to borrow money to loan to our members. Spare cash is as good for us as it is for you. Come bring your spare cash to us—we'll put it to good use!

### Beetle Bailey



ON TO FINALS—Nine-year-old Kathy Jakir took top points in the talent judging in the Gulf Coast "Our Little Miss" pageant. She competes next month in the state pageant in Dallas.

## Kathy Jakir Top Talent In 'Little Miss' Contest

Kathy Jakir, nine year-old daughter of N. S. Jakir of Reproduction Services Branch, was talent winner in the May 19-20 Gulf Coast area "Our Little Miss" pageant. She will compete in state finals in Dallas in July.

For her talent number, Kathy did a fast tapdance to "Swamp Fire" in a red and white Indian costume. Kathryn Collins Beauty Salon in Pasadena was Kathy's sponsor at the local pageant, and will sponsor her in the state finals. Finals winners compete in the international "Our Little Miss" pageant. Georgia Ann Ruffeno is her dance instructor.

Kathy is in the fourth grade at Fisher Elementary and sings in the Asbury Methodist Church choir.

Among her pageant prizes were a baton, a scholarship from Evonne McCutcheon and the Houston Spinnerettes, a hair style from the Gulfgate Beauty Salon, gifts from Freeland's Pet Shop in Gulfgate and from

### Co-op of Month



VERSATILE—While not attending Virginia Polytechnic Institute, William Jackson works in mechanical equipment design for the Engineering Division. His supervisors say of him that he has the capability of working independently "as would be expected only from graduate engineers or individuals with considerable experience." "Conscientiousness and reliability combined with high productivity, accuracy and versatility make him an outstanding prospect in the field of engineering."

## How Counts, Too

Responsible service to the public depends on the responsiveness of individual Government employees—on how well and how willingly each serves the people. It's not just what we do, the how is important, too.

## Choral Rendezvous



**SING TONIGHT**—Members of the Bay Area Chorus rehearse tonight's concert to be given as part of the Clear Lake Rendezvous. The concert will be at 8 pm at Clear Creek high school in League City. Tickets at \$1 each may be bought at the door. The Chorus, directed by Paul Offield, last December gave a Christmas concert for MSC families in the Auditorium. Six MSC employees are members of the chorus, and they are identified by division. Front row, left to right: Barbara Spencer, Ann Hackler, Harriet Hodgson, Gretchen Grimaudl, Beverly Shapiro and Madeline B. Kline (RMD). Back row: Clark Hackler (G&C), Gerry deVezein (MPAD), Paul Kloetzer (CSD), Gordon Spencer (PPD), Carol Klovis, John Orr (TSD), Eileen Bauerlein and Norma Demming.

## Last Explorer XXXIV Experiment Activated, Checks Solar Wind

NASA has turned on the last of eleven experiments on board the Explorer XXXIV launched May 24.

The spacecraft's spherical electrostatic analyzer (a solar wind experiment) was turned on at 2:30 pm CDT June 1.

Data from this experiment is being analyzed to determine if the experiment is working properly. The remaining ten experiments have been checked out and are working normally as are the spacecraft's electro-mechanical systems.

The spacecraft's experiments are making measurements of solar and galactic cosmic rays

## EAA to Sponsor Kids' Skate Party Sunday at Gulfgate

The MSC Employees Activities Association Sunday will sponsor a roller skating party for children of MSC employees and their friends at the Gulfgate Roller Rink from 7 to 9 pm. Children under 8 must be accompanied by a parent.

Chaperoned buses will leave Gate 1 at 6 pm and will return at 9:45. Skaters may, if they choose, go directly to the rink.

Tickets at \$.20 each, including skate rental, are available from the following EAA representatives:

Barbara Vickers, Bldg 2 Ext 5241; Bob Merrifield, Bldg 4 Ext 3621; Kitty Cornish, Bldg 30 Ext 2403; Tim White, Bldg 31 Ext 2005; Sue Richardson, Bldg 45 Ext 4616, and Jerry Haptonstall, EAFB Bldg 317 Ext 7361.

within and at the boundary of the earth's magnetosphere and in interplanetary space. Data from these instruments will be used in the study of sun-earth relationships. Particular emphasis is placed on how solar events influence the earth's environment during this period of increasing solar activity.

The 163-pound scientific satellite, dubbed the Interplanetary Monitoring Platform-F (IMP-F) before launch, was rocketed into orbit aboard a Delta launch vehicle from the Western Test Range, Lompoc, Calif. Liftoff time was 9:06 am CDT May 24.

The spacecraft is in the planned highly elliptical orbit with an apogee of 131,187 miles and perigee of 154 miles. Inclination to the equator is 67 degrees and the period is four days, seven hours and 51 minutes.

## Buy U.S. Savings Bonds

### Aqui Se Habla de Arte

Cuba born Aida Alonzo of the Houston Museum of Fine Arts will be the guest speaker at the MSC Spanish Club June 13 meeting. Program Chairman John Williams said that Miss Alonzo has a most interesting story to relate about art and especially about her experiences as an exile. The twice monthly meeting of the club will be in the Bldg 13 floor-level conference room. 5:15 PM.

*Vengan todos! Y traigan a sus vecinos!*

## Your Job . . .

Wherever they work and whatever they do, all federal employees have one thing in common—providing service to the public. From clerk to Cabinet officer, laborer to skilled craftsman, messenger to manager—each government employee has been hired to serve the American people.

# ROUNDUP

## SECOND FRONT PAGE

## Crane Hits Powerline One Killed, Two Injured

One man was killed and two others injured when a crane hit a power line at MSC May 26.

The three are employees of the Westheimer Rigging Company of Houston.

Fatally injured was Bert Beeler, 25, 5518 Elms Spring, Houston. He was given artificial respiration at the scene by Alan Bean and Charles Duke who were working out in the nearby flight crew gymnasium at the time of the accident.

Doctors continued resuscitation efforts for more than an hour before pronouncing Beeler dead at 1:45 p.m.

E. E. Sanders, 39, Rt. 1, Pearland, was treated at the MSC dispensary for burns of the right leg and foot and then taken to Baptist Memorial Hospital in Houston. O. P. Tadlock, 58, 209 Super, Houston, was treated for minor electrical burns and released. Russell Schweickart gave first aid for shock at the scene to Sanders.

Apparently the three men were standing near a Westheimer Rigging Company crane which was moving a winch into a storage area when the crane boom struck a 12,500-volt line. They may have been guiding the winch into position. NASA has appointed a board to investigate the accident. Chairman of the board is William A. Milam, Chief, Construction Branch, Engineering Division. Members are H. F. Erickson, Head of the Electrical Section in the Engi-

neering Division's Test Facilities Branch, and Douglas Campbell, engineer in the MSC Safety Office.

Thirty-two buildings in the north area of MSC were immediately affected by the power outage caused by the broken line. They included 12 buildings in the Thermochemical Test area, six in the administrative and storage area, and 14 in the storage and test area.

Power was restored in the Thermochemical Test area and the administrative and storage area within 15 minutes. Power was restored to the remaining buildings later in the day.

## Builders Briefed On Construction

More than 15 building contractors were briefed June 5 on two major MSC projects—Phase II of construction of Bldg 35, Flight Crew Training Facility, and for modifications the Bldg 1 Auditorium.

Bldg 35 will be a 22,300-square foot structure housing flight crew simulators. Phase I construction—site preparations—is currently being done by Aetna Construction Co. of Houston.

A 76-foot x 105-foot addition will be built on the rear of the Bldg 1 Auditorium, doubling the space available for displays and exhibits. A high-bay area will permit display of actual spacecraft and related hardware.

## Brave New World of Incentives



**CONTRACT MANAGERS**—The Houston Chapter, National Contract Management Association April 27 held an educational conference on the "New World of Incentives" at the Nassau Bay Hotel. Left to right at the head table are Jack Fuller, MSC Procurement and Contracts Division; Donald N. Pitts, TRW Systems director of contracts; Orr Scherrer; speaker Bernie Moritz, NASA Hq Deputy Assistant for Industry Affairs; Jack Livingston, DOD procurement management analyst, and Dave Lang, chief of MSC Procurement and Contracts Division.