

NEWS RELEASE LOG

NUMBER	TITLE	RELEASE DATE
79-01	Invention by Hoyt McBryar Helps Extend Life of Space Shuttle Fuel Cells	1/15/79
79-02	NASA to Present the Aerospace Education Project Services	1/23/79
79-03	Skylab Flight Control Activities to Be Reduced	2/1/79
79-04	Chinese Vice Premier Visits JSC	2/2/79
79-05	NASA Extends Lockheed White Sand Contract	1/29/79
79-06	Shuttle Orbiters Named after Sea Vessels	2/1/79
79-07	Space Shuttle Orbiter Procurement Contract Signed	2/5/79
79-08	Antarctic Meteorite Expedition Successful Again	2/18/79
79-09	Conceptual Space Construction Equipment Tested	2/20/79
79-10	Tenth Lunar and Planetary Science Conference	2/20/79
79-11	Science Sessions Open to the Public	2/20/79
79-12	NASA to Move Space Shuttle Orbiter to Florida	2/23/79
79-13	NASA Buys "Super Guppy" to Haul Space Hardware	2/28/79
79-14	NASA Selects GE Subsidiary for Life Sciences Contract	2/28/79
79-15	New Mexico Lakebed Airstrip Named as Shuttle Backup Landing Site	3/1/79
79-16	Space Shuttle Columbia Flight - California to Florida	3/1/79
79-17	at 18 Years Old, She Mans A Mission Control Console	3/19/79
79-18	JSC Expands Center Tour	3/30/79
79-19	NASA Picks Serv-Air to Maintain 747 Carrier Aircraft	3/28/79
79-20	Schooling of Astronauts, 35 New Candidates Is Varied, Exciting	4/8/79
79-21	JSC Selects Metro Services for Logistics Contract Talks	4/18/79
79-22	JSC Hosts the 13th Aerospace Mechanisms Symposium	4/18/79
79-23	NASA Signs Add-Ons to Orbiter Contract	4/25/79
79-24	JSC Deputy Director Sjoberg Retires	5/4/79
79-25	NASA Aircraft Surveys Arctic Ice	5/1/79
79-26	JSC Deputy Director of Safety Assigned to Three Mile Island Task Group	5/14/79
79-34	Astronaut Fred Haise to Resign from NASA	5/23/79

79-35	NASA to Present the Aerospace Education Services Project	5/29/79
79-36	RMS Contract Award	5/25/79
79-37	Skylab Maneuver Plan	6/1/79
79-38	NASA Signs Supplement to IBM Contract	6/1/79
79-39	Kleinknecht Assumes New Role	6/4/79
79-40	NASA Extends Northrop Aircraft Maintenance Contract	6/6/79
79-41	McCall's Space Mural to Be Dedicated June 14	6/6/79
79-42	England Returns to Astronaut Program	6/7/79
79-43	Pan Am Contract Renewed at JSC	6/8/79
79-44	Summer Space Program Briefings	6/11/79
79-45	NASA Will Try to Adjust Skylab's Attitude	6/15/79
79-46	Gartrell Retires	6/15/79
79-47	Astronaut Candidate Kathryn Sullivan Sets Altitude Record	7/2/79
79-48	NASA Modifies Rockwell Orbiter Contract	7/3/79
79-49	Johnson Space Center to Hold Open House for Tenth Anniversary of Man's Landing on the Moon	7/10/79
79-50	NASA to Recruit Space Shuttle Astronauts	8/1/79
79-51	Charlesworth Named Acting Deputy Director of Johnson Space Center	8/10/79
79-52	JSC Selects Pan American for Engineering Support Contract Talks	8/24/79
79-53	35 Astronaut Candidates Complete Training and Evaluation Period	8/31/79
79-54	DSAD Director Bill Tindall to Retire from NASA	8/31/79
79-55	NASA Tests New Space Maneuvering Backpack	9/10/79
79-56	Hispanics Are Encourage to Apply for Astronaut Program	9/12/79
79-58	Astronauts May Repair Orbiter Heat Shield In Flight	9/20/79
79-59	Special Aerospace Medicine Course Scheduled	9/24/79
79-60	NASA Supplements Orbiter Contract	9/27/79
79-61	Koons Named to New Post	9/28/79
79-62	TRW to Analyze Shuttle Avionics	9/28/79
79-63	NASA to Develop Manned Maneuvering Unit	10/2/79
79-64	Heads Up Display for Orbiter	10/16/79

79-65	US, Soviet Space Medicine Group to Meet 10th Time	10/19/79
79-66	MATSCO gets NASA Life Sciences Payloads Contract	10/29/79
79-67	NASA Negotiates with Westheimer Rigging for Support Contract	11/14/79
79-68	NASA Negotiates with Alpha for Construction Contract	11/28/79
79-73	Orbiter Integrated Test	12/11/79
79-74	NASA Receives 3,278 Applicants for Astronaut Program	12/11/79

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-01

January 15, 1979

The life of electric fuel cells on the Space Shuttle has increased from 700 to 5,000 hours as a result of an invention by Hoyt McBryar, former Chattanooga area resident and graduate of the University of Georgia at Athens.

The invention reprocesses asbestos so fibers are distributed evenly, making the material uniformly strong. The asbestos matrix contains the electrolyte for conversion of chemical energy into electricity in Space Shuttle fuel cells.

"We used ordinary kitchen equipment to do it," McBryar said, describing his work in 1972, when fuel cell life was short due to weak spots in the electrolyte holder. He and fellow lab workers tore sheets of asbestos into one-inch squares and put them in a kitchen blender with alcohol. They poured the resulting "slurry" through a filter box. The product was a mat of asbestos fibers at random orientation, which they dried and trimmed and put to work as an electrolyte holder.

In December, NASA's Inventions and Contributions Board awarded McBryar \$2,500 for the invention. The board originally recognized McBryar's contribution in 1973. Since then, Rockwell International has selected an electrical power system for the Space Shuttle Orbiter that uses McBryar's asbestos-structured electrolyte holder.

The invention contributes to the reusability of the Space Shuttle which is set for its first launch at the end of 1979.

McBryar, a 20-year NASA employee, was raised in the Chattanooga area and his father, Lewis McBryar, is a resident of Trenton, Georgia. Hoyt McBryar received his B.S. in 1959 and M.S. in 1961, both in Chemistry. He is currently an electrochemist at the Johnson Space Center in Houston, responsible for development of electrochemical energy conversion and storage concepts for manned spacecraft, and for orbiting power platforms for future use in space.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

James D. Poindexter

For Release

AC 713 483-4433

Immediate

RELEASE NO: 79-02

NASA TO PRESENT AEROSPACE EDUCATION PROGRAM

The National Aeronautics and Space Administration's lecture-demonstration program will be conducted by Thomas J. Hill. Hill is assistant professor of aerospace education in the Foundation program at California State University, representing the Johnson Space Center, Houston, Texas.

Hill has served four years as coordinator and senior specialist for an eight-state region of the NASA Aerospace Educational Program and is the author of Earth Science curriculum guides, Landsat activities for schools and the Lunar Sample Educational Program which is in use nationwide.

Hill received his Bachelor of Science degree from Sam Houston State University, Huntsville, Texas, and his Master of Science degree from Oklahoma State University. He has done graduate work in oceanography at Texas A & M University and in astrophysics, geophysics, and meteorology at the Michigan Institute of Technology. For seven years he has served as space science education specialist while on the faculty of Oklahoma State University, in addition to ten years as a science teacher and department chairman in the public schools.

1781111

NOTICE TO EDITORS:

Newsmen planning to cover the visit of Deng Xiaoping (Teng Hsiao-Ping), Vice Premier of the People's Republic of China, to the NASA Johnson Space Center, February 2, should make application for accreditation through the Houston Chamber of Commerce prior to noon CST January 30th. Badges must be picked up before 5 p.m., Thursday, February 1. Contact Mary Midkiff, 713/651-1313. There will be no accreditation or badging of newsmen at Johnson Space Center.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-03

February 1, 1979

SKYLAB FLIGHT CONTROL ACTIVITIES TO BE REDUCED

Flight controllers at the Johnson Space Center will cease round-the-clock monitoring activities for the space station Skylab on Friday, February 2. This decision follows earlier decisions to abandon reboost/deorbit attempts using the Space Shuttle.

Flight controllers will instead monitor the Skylab during one eight-hour shift, five days a week. "The weekly schedule will be arranged so that Skylab monitoring includes one day during the weekend to preclude a two-day absence of coverage," said Charles Harlan, chief of the Payloads Operations Division at the space center.

On Thursday, January 25, flight controllers maneuvered the 78.5 ton space station from a minimum-drag orbital position to one where the space station's solar panels constantly track the Sun. This maneuver was carried out to prepare the Skylab for possible "last chance" maneuver just prior to the craft's reentry. "The Sun-facing attitude will take less flight control effort to maintain," Harlan said.

- more -

Repositioning the Skylab from the minimum drag orbital position will also speed up the decay of the vehicle's orbit. Present estimates now place reentry sometime between June and August of this year.

The space agency has been studying ways to alter the reentry path of the space station, although views differ among agency experts as to the degree of active control which might be effected just prior to reentry.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-04

February 2, 1979

CHINESE VICE PREMIER VISITS SPACE CENTER

Deng Xiaoping, Vice Premier of the People's Republic of China state council, will spend three hours Friday visiting the NASA Johnson Space Center for briefings on the U.S. manned spaceflight program.

JSC Director Christopher C. Kraft, Jr. will greet the vice premier at the JSC Exhibit Hall, where the group will hear descriptions of the current status of the Space Shuttle program as well as view historical space artifacts.

Moving to the JSC crew training facility, the vice premier and his group will be hosted at the Skylab full-size trainer by Alan Bean, lunar module pilot for Apollo 12 and Skylab 3 commander. The vice premier next will make a "flight" aboard the Shuttle Mission Simulator piloted by veteran astronaut Fred Haise, named to fly an early Shuttle orbital test flight.

If time permits, the group will visit a full-scale mockup of the Space Shuttle and remote manipulator.

A luncheon for the visiting group will be held at 12:30 p.m. in the Gilruth Recreation Center. Departure is scheduled for 1:30 p.m.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-05

January 29, 1979

NASA EXTENDS LOCKHEED WHITE SANDS CONTRACT

The NASA Johnson Space Center White Sands Test Facility, Las Cruces, New Mexico, has awarded a contract to Lockheed Electronics Company, Inc. of Houston for support services at White Sands.

Valued at \$14 million, the cost-plus-award-fee contract covers test stand operations, laboratory support services, and maintenance and operations at the facility. The contract covers 12 months starting February 1, 1979 and is the fifth year of contract performance by Lockheed.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-06

February 1, 1979

ALSO RELEASED AT NASA HEADQUARTERS

SHUTTLE ORBITERS NAMED AFTER SEA VESSELS

The National Aeronautics and Space Administration has named the first four Space Shuttle orbiters to operate in space after sea vessels used in world exploration.

Orbiter 102, scheduled to be launched into Earth orbit late this year, will be named Columbia. Subsequent orbiters will be named Challenger (Orbiter 099), Discovery (Orbiter 103) and Atlantis (Orbiter 104).

The first orbiter constructed (Orbiter 101) was named Enterprise in 1976 after the flagship in the popular television series "Star Trek." Enterprise also was a sailing ship which took part in an important arctic expedition between 1851 and 1854.

Enterprise, which flew the Shuttle approach and landing tests in 1976, now is undergoing vibration tests at NASA's Marshall Space Flight Center, Huntsville, Alabama.

- more -

The Challenger made a prolonged oceanic exploration cruise from December 1872 to May 1876 gathering data about the Atlantic and Pacific Oceans that filled 50 volumes. Challenger also was the name of the Apollo 17 lunar module that landed on the Moon in December 1972.

The sea-going Columbia, out of Boston, entered and explored the mouth of the Columbia River in 1792. Captain Robert Gray named the river after his sloop. Columbia also was the name of one of the first U.S. Navy ships to circumnavigate the globe and the name of the Apollo 11 command module which circled the Moon during the first manned landing on the lunar surface, July 20, 1969.

The Discovery was used to explore Hudson Bay in Canada and to search for a northwest passage from the Atlantic to the Pacific in 1610 and 1611.

The Discovery also was one of two ships in the 1770's used to discover the Hawaiian Islands and explore the coasts of southern Alaska and western Canada.

During the Revolutionary War, Benjamin Franklin issued a safe-conduct request for the English ship Discovery because of interest in the scientific objectives of its expeditions.

The two-masted ketch Atlantis logged half a million miles between 1930 and 1966 as the first American-operated vessel designed especially for ocean research.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-07

February 5, 1979

ALSO RELEASED AT NASA HEADQUARTERS

SPACE SHUTTLE ORBITER PROCUREMENT CONTRACT SIGNED

The National Aeronautics and Space Administration has signed a contract with Rockwell International Corp., Space Systems Group, Downey, California, for the manufacture of two Space Shuttle orbiters (OV-103 and 104), conversion of a ground-test orbiter (OV-099), and modification of the first flight orbiter (OV-102).

Completion of the work will provide NASA with four orbiters for Space Shuttle operations.

Under terms of the \$1.9 billion cost-plus-award-fee contract, Rockwell will perform the work at its Downey and Plamdale, California, facilities and at the NASA Kennedy Space Center, Florida. The NASA Johnson Space Center, Houston, Texas, will administer the contract.

- more -

Contained in the contract is the clause "Certification-Wage and Price Standards (1979 Jan)." This clause means that Rockwell will adhere to the wage and price standards promulgated by the Office of Federal Procurement Policy in conformance with the President's anti-inflation policies.

The Space Shuttle is the major element in the nation's new Space Transportation System which becomes fully operational in 1981.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-08

February 18, 1979

ANTARCTIC METEORITE EXPEDITION SUCCESSFUL AGAIN

The third scientific expedition to look for frozen meteorites on the Antarctic ice shelf has been completed successfully. The expedition, headed by University of Pittsburgh professor Dr. William Cassidy and consisting of teams of American and Japanese meteorite searchers, found 309 meteorite fragments during the three-month expedition. The expedition occurred during the southern summer months, November, December and January.

The expedition was supported with equipment and lunar-style storage and retrieval material from NASA's Johnson Space Center. JSC associate lunar curator John Annexstad took part in the expedition. Annexstad says the samples collected this time were even more carefully collected than the samples retrieved during last year's, second, expedition, the first to use lunar-style collection techniques.

- more -

The samples are being curated and prepared for scientific examination at the JSC lunar and planetary science division laboratories. The antarctic meteorites are of greater scientific value than most meteorites because of the preserving qualities of the extreme cold and arid conditions on the ice shelf. They are collected and stored under conditions very close to those used for the lunar samples retrieved from the Apollo missions.

The 309 meteorite fragments collected this year are still at McMurdo Station, Antarctica, awaiting shipment by boat to the U.S. They are expected to arrive at the space center by early April.

Samples collected last year are in the final stages of being identified, photographed, and prepared for distribution. About 50 of these samples were sent to U.S. and foreign investigators for further study this past September.

Dr. William Cassidy is a University of Pittsburgh geologist who has devised a theory for finding meteorites on the antarctic ice shelf. The first expedition by him, three seasons ago, was to test his theory. He found very few meteorites, although he did confirm the theory. The second expedition was equipped by NASA with special gear to maintain the pristine qualities of the meteorites. The second expedition found 310 meteorite fragments.

The National Science Foundation, NASA, and the Smithsonian Institution are supporting the expeditions.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-09

February 20, 1979

CONCEPTUAL SPACE CONSTRUCTION EQUIPMENT TESTED

Spacecraft design engineers at the Johnson Space Center last week tested a conceptual "cherry picker" attachment which would be used with the Shuttle Orbiter remote manipulator arm.

This "proof-of-concept" test is the first step in the research and development of a set of space construction devices, which if approved and developed would enable Space Shuttle astronauts to carry out near term (1980's) satellite servicing, maintenance and repair and far term (1990's) large construction projects in earth orbit.

The test involved the use of a prototype Space Shuttle suit which physician-astronaut Joe Kerwin wore while following a series of procedures in the Space Center water immersion facility. The "cherry picker" or manned remote work station, was underwater in the tank.

Kerwin simulated operation of the "cherry picker" in the neutral buoyancy of the water tank.

The water immersion facility simulates some of the difficulties of performing tasks in space.

The conceptual "cherry picker" has controls at the work station so the astronaut can control the motions of the remote manipulator system (RMS). Normally the RMS would be controlled by the mission specialist from inside the Orbiter.

Release no: 79-09

The envisioned use of this device would be to service on-orbit satellites which are attached to the Orbiter without an astronaut floating freely in space.

The manned remote work station concept was designed after a series of studies by Space Center engineers and outside contractors. The test model was manufactured by the Grumman Aerospace Corporation, Bethpage, N.Y.

Following the test, the concept model is being returned to Bethpage, and Space Center and Grumman engineers will confer about any needed modifications.

These early tests will provide the basis for the manufacture of a development test article which is expected to be delivered to the Space Center early in 1980. The development test article will then be tested on an air-bearing floor with the "cherry picker" attached to the end of an engineering development RMS using either engineer test subjects or astronaut test subjects wearing the Shuttle suit. The results of those tests are expected to be used as the basis for the development of a flight test article which would then be tested in space on one of the Space Shuttle Orbiter flights.

The "cherry picker" concept is envisioned as the "Model T" of a series of space construction work platforms - some of which are completely enclosed and pressurized; some like the "cherry picker" are open and require a suited crewman; some would be miniature space vehicles capable of carrying cargo or personnel from the Orbiter to other points in space.

-more-

All these concepts are presently in the study and preliminary design stage. The space agency has not received funding for the development of any of this equipment. If developed, though, all construction support equipment would be for various types of construction envisioned in both low and high earth orbits (from 100 to 600 nautical miles) and would have to be reusable and compatible with the Orbiter payload bay.

In addition to the studies at the Johnson Space Center, the Marshall Space Flight Center also studies concepts for space construction projects.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-10

February 20, 1979

TENTH LUNAR AND PLANETARY SCIENCE CONFERENCE

The tenth annual Lunar and Planetary Science Conference will be held at the Johnson Space Center, Houston, the week of March 19 through March 23, 1979.

The conference opens Monday, March 19, with concurrent science sessions beginning at 8:30 a.m which will continue throughout the week at several sites on the space center.

As with previous conferences, papers to be presented are divided into seven categories:

- 1) Constraints on structure, composition, and history of planetary interiors.
- 2) Characteristics and movements of materials on lunar, planetary and asteroidal surfaces.
- 3) Characterization and evolution of volcanic landforms.
- 4) Characterization and evolution of planetary crusts.
- 5) Nature and effects of impact processes.
- 6) Extraterrestrial materials as solar/interplanetary/interstellar probes.
- 7) Earliest history of the solar system.

More than 700 scientists from the U.S., Western Europe, Africa, Australia, and the Soviet Union are expected to attend. The first conference was held shortly after the Apollo 11 expeditions returned the first lunar samples and drew 1,700 participants.

During the past several years the conference scope has grown and evolved to include not only reports on the lunar studies, but other related planetary studies and even some astrophysics. This year's conference includes several special sessions which expand, once again, beyond the confines of lunar studies. The 21 sessions include lunar and planetary topics, including the Earth from the viewpoint of planetary science.

On Monday night there is a special session on the "Future Lunar Exploration" will be held beginning at 7:30. The session will include considerations of extended geologic surveys of the moon, lunar rovers, remote sensing satellites, and gravity surveys.

On Tuesday night there is a session on "The Earth from Space, " covering the earth application of satellites. Areas of consideration will be the atmosphere, oceanography, global geology/tectonphysics, plate motions, resources, and climatology.

On Thursday night a special presentation on the Pioneer Venus mission and the Voyager Jupiter encounter will include updates on those missions from the project scientists. The Pioneer Venus mission continues with data

Release no: 79-10

being sent from the orbiting probe and Voyager. It will have just passed its close encounter with Jupiter. Also on Thursday night a specially prepared three-dimensional film on Mars taken during the extended Viking mission will be shown.

Since this is the tenth anniversary conference, a special presentation on the history and future of lunar and planetary science will take place Wednesday afternoon.

On Friday, session summarizers will present a synopsis of the papers presented during the week.

The conference is co-sponsored by NASA's Johnson Space Center and the University Space Research Association's Lunar and Planetary Institute, which is adjacent to the space center. Conference co-chairmen are Dr. Michael Duke, chief of Lunar and Planetary Science at the space center, and Dr. Thomas McGetchin, director of the Lunar and Planetary Institute.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-11

February 20, 1979

SCIENCE SESSIONS OPEN TO THE PUBLIC

It has been nearly ten years since man first set down on another world. We brought back to Earth over 840 pounds of lunar soil and rock. For the past nine years scientists have met annually in Houston to confer on their findings and theories concerning the Moon. For the past three years these same scientists have used their lunar knowledge to advance their studies of the other planets in the solar system, including the Earth.

As in the past, this year's Tenth Lunar and Planetary Science Conference will feature a special series of evening programs which will be open to the public. The Conference runs March 19 - 23, 1979.

On Monday Dr. James Arnold (University of California at San Diego) and Dr. David Criswell (Lunar & Planetary Institute) will host a session on "Future Lunar Exploration." The session will cover extended geologic surveys of the Moon, lunar rovers, remote sensing of the Moon, and gravity surveys.

On Tuesday Dr. Leon Silver (California Institute of Technology) and Dr. Edward Flinn (NASA Headquarters) will host a session on "The Earth from Space." The session will explore the applications of planetary investigations

-more-

to the Earth, particularly to our atmosphere, oceans, global geology, plate motions, resources, and climate.

On Thursday Dr. William Quaide (NASA Headquarters) and the project scientists involved with the Pioneer Venus and Voyager missions will present the results from recent Venus probes and the Voyager Jupiter encounter, which will have just occurred. A special 3-D film of Mars made during the extended Viking mission will be shown also.

All of the evening sessions will occur at the Johnson Space Center main Auditorium, Building 2. They will start at 7:30 p.m.

On Wednesday afternoon a special session on the history and future of planetary exploration and science will take place. Details of this program will be announced.

The Johnson Space Center is located southeast of Houston off Interstate 45 (the Gulf Freeway). Visitors should exit at NASA Road 1 and continue east two miles to the center's main gate.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-12

ALSO RELEASED AT NASA HEADQUARTERS

NOTE TO EDITORS

NASA TO MOVE SPACE SHUTTLE ORBITER TO FLORIDA

The Space Shuttle orbiter Columbia (OV-102) will be moved to the Kennedy Space Center (KSC), Florida, in March.

NASA's 747 Shuttle carrier aircraft will depart with Columbia from the Dryden Flight Research Center, Edwards, California, March 9 to arrive at KSC March 10.

The Columbia will be moved overland from Rockwell International's Plant #42, Palmdale, California, to Dryden March 8.

The 747 will make three intermediate stops at military air bases during the cross-country flight.

News media wishing to cover events of the move may contact:

Bob Gordon
Johnson Space Center
Houston
Phone: 713/483-5111

Ralph Jackson
Dryden Flight Research Center
Phone: 805/258-3311

Hugh Harris
Kennedy Space Center
Phone: 305/867-2468

Jim Kukowski
NASA Headquarters
Washington
Phone: 202/755-3090

-more-

Background information pertinent to the ferry flight, overland move and Space Shuttle program will be available at all of the above locations.

News information centers will be established at the Desert Inn, Lancaster, California, March 7 and 8; Dryden Flight Research Center, March 8 and 9; Kennedy Space Center, March 10.

February 23, 1979

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

NEWS RELEASE NO: 79-13

2 p.m. CST
February 28, 1979

NASA BUYS "SUPER GUPPY" TO HAUL SPACE HARDWARE

The NASA Johnson Space Center has signed a firm-fixed-price contract with Twin Fair, Inc. of Buffalo, New York for the purchase of the "Super Guppy" aircraft.

"Super Guppy" is a modified Boeing KC-97 with an extensively enlarged fuselage for carrying oversized loads, and was used during the Apollo and Skylab programs for hauling spacecraft and other hardware from manufacturing plants to Kennedy Space Center and other NASA facilities. The aircraft will haul Space Shuttle hardware in a similar role.

The contract with Twin Fair is valued at \$2,935,000 and covers spares, ground support equipment and manuals, and flight crew and maintenance training. Twin Fair has delivered the aircraft to Hayes International Corporation at Birmingham, Alabama for airworthiness inspection prior to delivery to NASA. Flight crew and maintenance training will take place at Johnson Space Center flight operations facility at Ellington AFB near Houston.

#

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

NEWS RELEASE NO: 79-14

February 28, 1979

NASA SELECTS GE SUBSIDIARY FOR LIFE SCIENCES CONTRACT

The National Aeronautics and Space Administration has selected Management and Technical Services Co., Houston, a subsidiary of General Electric Co., for negotiations leading to the award of a cost-plus-award fee contract for the performance of Life Sciences Flight Payload Development, Engineering and Operations.

The contract will be for engineering, planning, technical management, operational support and acquisition of equipment to support a life sciences experiment program for flights aboard the Space Shuttle.

The contract will run from March 1979 through February 1984 and will be divided into three contract periods. The contractor's estimated cost for the first two-year period is approximately \$8.6 million and approximately \$22.9 million for the full five-year contract.

The Life Sciences Flight Experiments Program on the Shuttle will open a new era of medical, biological and performance research in space. Scientists, who are not astronauts, will be able to perform experiments during space flight.

The Life Sciences Flight Experiments Program is in the NASA Office of Space Science where it is managed by the Life Sciences Program Division. This contract is under the management and technical direction of NASA's Johnson Space Center, Houston.

#

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-15

Upon Receipt

NEW MEXICO LAKEBED AIRSTRIP NAMED AS SHUTTLE BACKUP LANDING SITE

The great white blotch in New Mexico's Tularosa Valley can be seen from the air for a hundred miles or more. Tourists drive out into the gypsum dunes from Alamogordo to view nearby White Sands National Monument.

The place seems like an illogical location for landing a spaceship, but a flat, hardpacked stretch running north and south across the white dry lakebed has been named the backup landing strip for NASA's Space Shuttle Orbiter, scheduled for first space flight in November.

The Northrup strip on the White Sands lakebed was chosen because it remains dry for most of the year. Moreover, Northrup strip is under the flight path of the critical first Earth orbit after a Shuttle launch. Should the Orbiter not be in a safe orbit, or some other emergency force a landing on the first orbit, the spacecraft would be slowed down by a deorbit rocket engine burn high over the South Pacific east of Samoa. As the Orbiter entered the Earth's atmosphere the flight path would cross Baja California and the Mexican state of Sonora until the

spacecraft was in the denser atmosphere and the crew would fly it "dead-stick" into Northrup Strip.

Shuttle Orbiter Columbia will make six orbital test flights before the Shuttle Transportation System becomes operational. The first four of these test flights will land at Edwards Air Force Base, California, and subsequent Orbiter landings will be on the 15,000-foot Shuttle runway at NASA Kennedy Space Center in Florida.

Edwards AFB has a large dry lakebed extending around one end of its main runway that is hard packed and allows an 11-mile rollout for a landing Orbiter. Winter rains can transform the dry lake into a wet lake, and since there is little natural drainage, water removal is mostly through evaporation.

Standing water on the lakebed at Edwards AFB prior to launch would shift the normal end-of-mission landing to Northrup Strip.

Plans are underway for installing a stiff-leg derrick adjacent to Northrup Strip for hoisting a landed Orbiter onto the top of the Boeing 747 carrier aircraft used by NASA to ferry Orbiters back to Kennedy Space Center for the next launch. Additionally, a ground station for the Shuttle microwave scanning beam landing system -- a landing and approach piloting aid -- will be moved to the Strip from Edwards AFB.

Other landing support equipment to be relocated at Northrup Strip include an S-Band communications van and a mobile tactical air navigation (TACAN) station to provide Orbiter crews with distance and bearing signals from the landing site.

Service workstands, office trailers, towing vehicles and other facilities would be brought to Northrup Strip for Orbiter retrieval and ferry operations. The total cost for installing the derrick and the electronic landing aids is estimated at \$1.5 million. Operational costs for retrieving an Orbiter will run about \$400,000, and up to 200 NASA and support contractor people would be temporarily assigned to the Alamogordo-Northrup Strip area for a retrieval.

###

March 1, 1979

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-17

Upon Receipt

AT 18 YEARS OLD SHE MANS A MISSION CONTROL CONSOLE

At age 18, Jackie Parker is the youngest flight controller in the history of manned spaceflight. She is also among the first group of women to man a console in the Mission Control Center at the NASA Johnson Space Center.

"I work in support of the DPS (Data Processing Systems) console," she says. "I'm in that position during ascent phase, which is launch and the first few hours of orbit." Her post is in the Mission Operations Control Room during upcoming Space Shuttle missions.

Eyes fixed on the console, Parker will monitor and respond to the five computers onboard the Space Shuttle. Like other controllers, she interacts with the computers for data to be uplinked or downlinked by telemetry.

During a Shuttle mission, she and other controllers in her section assess the health of the onboard and on the ground computer system which, in essence, controls major parts of the orbiting vehicle.

- more -

Parker has lived with the space program since childhood. Her father, author W. Dale Parker, retired from JSC in the early 1960's, so from an early age she has aspired to work in space, perhaps as an astronaut.

She was one of the 1700 women who applied during NASA's last astronaut recruiting, and she plans to apply again.

At age 14, Parker entered college to study math. On a gifted student program in the Florida school system, she had skipped the 9th grade and completed her high school credits in one year.

She completed the four-year degree program in three years, including math courses she'd missed in high school and taking 41 hours, mostly computer science, in two quarters. She graduated at age 17 from Florida Technological University (now University of Central Florida).

After working for NASA last summer as an intern computer systems analyst, Flight Control Division hired her as a flight controller in September.

Her favorite hobby is flying. "I got my pilot's license when I first turned 17," she says and laughs. "I learned to drive a car about a week after that. Now I'm interested in aerobatics."

A former member of Mensa, Parker drops comments into a conversation such as "Calculus is a breeze if you know your trig identities."

As to her future: There will be plenty more astronaut selections before she'll think she is too old to keep applying.

Photos available: S 79-28634
S 79-28632

###

March 19, 1979

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-18

March 30, 1979

JSC EXPANDS CENTER TOUR

The NASA Johnson Space Center has added another stop on its public tour. The Space Shuttle Orbiter Mockup Laboratory is now part of JSC's "open house" visitor program. A full-size Shuttle Orbiter mockup and a payload bay training facility are in the lab.

Visitors need first to go to the JSC Exhibit Hall to pick up a folder with driving directions to the new stop, where an escort will explain the facility.

JSC's open house, in addition to the Exhibit Hall, includes Mission Control Center and the Mission Simulation and Training Facility. Open house runs from 9 a.m. to 4 p.m. seven days a week.

Call ac 713 483-4321 for additional tour information.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-19

March 28, 1979
2:00 p.m. CST

NASA PICKS SERV-AIR TO MAINTAIN 747 CARRIER AIRCRAFT

The NASA Johnson Space Center, Houston, has selected Serv-Air, Inc., of Greenville, Texas, for award of a contract covering maintenance of the Boeing 747 transport (NASA 905) used to ferry Shuttle Orbiter spacecraft from one location to another.

Most of the maintenance work will be done by Serv-Air at the NASA Dryden Flight Research Center at Edwards Air Force Base, California. The contract also covers logistics, quality assurance and engineering support.

JSC's Aircraft Operations Division will manage the contract, estimated to total approximately \$573,000 during an initial 19-month period.

Other bidders for the contract were American Airlines, Inc., Tulsa, Oklahoma, and Northrop Worldwide Aircraft Services, Inc., Lawton, Oklahoma.

###

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-20

April 8, 1979

ALSO RELEASED AT NASA HEADQUARTERS

SCHOOLING OF ASTRONAUTS, 35 NEW CANDIDATES IS VARIED, EXCITING

A group of 35 Space Shuttle astronaut candidates has completed months of classroom work and is moving into engineering assignments at the Johnson Space Center. In training since July 1978, the candidates will become full-fledged astronauts in July 1980.

Flight crews and flight controllers at JSC are gearing up for intensive training in Shuttle cockpit simulators and in the Mission Control Center here at Houston.

Candidate training coordinator Tom Kaiser said of the classes: "They've been more like briefings than classes. This is the first time we've had this thorough a training program."

"This morning, I was counting the years I've been in class like this," said Steve Hawley, astronomer and mission specialist candidate.

- more -

"There are no real tests, but you recognize you're going to need this information," added geologist Kathy Sullivan.

JSC brings in instructors from universities or other NASA centers to conduct courses titled: Ascent Aerodynamics; Entry Aerodynamics; Space Physics; Tracking Techniques; and Spaceflight Physiology.

Veteran astronauts deliver lectures on such topics as: How to be a CAPCOM (capsule communicator) and other experienced NASA personnel lead sessions in: "Washington Roundup;" "Evolution of a JSC Budget;" and "People and Requirements, It Takes a Bunch to Make Things Work in NASA."

Trainers say they are putting together a videotape library of the classes for use by all JSC employees.

Now that the candidates are getting out of the classroom, their training takes on a new emphasis. "They're being put straight to work like the rest of us," said astronaut Ed Gibson, who coordinates the candidates' technical assignments.

"The first months, they were in more of an observer mode," he said. "Now they'll be assuming responsibility the same as anybody else in the office."

Candidate Hawley has been working on software for payloads on orbital test flights, an assignment that "evolved into how to support operational payloads." Sullivan has been working on a similar assignment for the second flight.

Pilot Fred Gregory is working on Orbiter enhancement, trying to find an ideal cockpit. George Nelson, an astronomer, is working on procedures for getting in and out of a spacesuit.

They all get excited when they talk about the training. "The scientific courses have been fascinating," said Gregory.

"There's an overwhelming amount of information, and it's important to learn every facet," said Nelson.

"The best way to learn how to do it is to go out and do it," said Hawley.

They apply abundant energy to keeping up with a hectic schedule -- flying in T-38's, working one-on-one with veteran astronauts, keeping current in their specialties and keeping fit. Now and then, they find an hour for racketball or other recreation.

With the Space Shuttle's first flight expected before the end of this year the first astronaut crews have begun lesson sequences in the Shuttle Mission Simulator. The 35 astronaut candidates are observers.

DEVIL'S ADVOCATES

Flying a spacecraft calls for total commitment and preparation calls for comprehensive, integrated training, said James Bilodeau, chief of crew training at JSC.

Eight hours a day, until the launch, the astronauts will sit in the cockpit of the fixed-based and the motion-based simulators going through flight procedures. Teams of instructors can feed up to 4,500 malfunctions into a training run. The astronauts respond to each malfunction, carrying out procedures that will keep the Orbiter alive and well.

The lesson plan will cover nine months "not counting real-world problems cropping up," Hughes said. By the launch date, the crews will be prepared for nearly any emergency.

"We are at the very bottom of an incredible amount of stuff they will have to learn," said Frank Hughes, crew training specialist.

The simulation instructor teams work from scripts, sheets that look like working TV scripts. The time of the event is in the left column and a description is in the right. Instructions read: "Delay OMS 1 burn due to prevalve fail;" "Gain switches to low during load relief;" or "Late engine out."

Instructors have spent six months learning how to harass the astronaut crews during simulator exercises.

The instructors sit before the cathode ray screens of the simulator computer watching color graphic and numerical displays. Each instructor has data to monitor. One is checking times of cryogenic pressure cycles, another eyes maneuver rocket systems. They concentrate; eyes always fixed on the screens. They wait for the precise moment to play the devil's advocate.

The constant hum of a roomful of computer databanks drowns out nearby sounds. Occasionally, a loudspeaker voice announces incoming calls. The instructors listen over headphones to communications between the cockpit and other instructors.

In the cockpit, two astronauts run through a procedures verification -- the minutes prior to the de-orbit burn. An astronaut candidate looks on, absorbing everything. The simulated sound of maneuver jets is heard. "OK, OMS engine is on," says the pilot. "I'll burn the engine in manual," says the commander. He grabs the stick and the "current orbit" numbers decrease. With the exercise completed, the instructors reset the computer, and the crew gets ready to perform the task again.

Next morning another commander and pilot sit at the cockpit in the simulator. It is two minutes before launch. There is the sound of engines firing, and on the control panels the velocity and altitude are going up.

An instructor at one of the consoles puts in an auxiliary power unit malfunction command and emergency lights come on in the cockpit announcing "APU underspeed." The hydraulic pressure lights go on.

The pilot throws the correct switches and the emergency is over.

"These malfunctions will get more difficult in the next few weeks," Hughes says.

The system clears and the crew is ready to launch again with more "what-ifs?"

SURROGATE SPACECRAFT

When the candidates become full fledged astronauts, some will also use a different facility, a high-fidelity trainer at JSC, that acquaints astronauts with the close quarters aboard the Space Shuttle Orbiter.

The Orbiter's mid-deck serves as living room, dining area, kitchen, den and bedroom; "all but the drivers' seat and workshop," said Bob Bond, trainer manager. Bond pointed out the drawers in the walls where suitcases go and hooks where orbiting crews will hang in their sleeping bags at night.

Crew members will use the trainer for habitability exercises: food preparation and finding where to stow things -- from instruments to trash. There are 15 lessons for each crew, such as how to operate on-board cameras and emergency procedures for loss of cabin pressure.

The astronauts also will use the trainer to practice going through an airlock to work in the 4.5-by-20 meter (15-by-65 foot) payload bay. Crew members crawl through an opening in the mid-deck and lock their feet into the ceiling.

Then, reading the controls, which on Earth are upside down, they close the hatch, depressurize the airlock, open the outside hatch, and push out to the payload bay.

After 1980's orbital flight tests, living quarters on the Shuttle will be made more spacious. Extra water tanks to supplement the water obtained from the fuel cells will be removed along with

a test pallet that contains data from the vehicle. This will provide room for a set of bunks, "a personalized cocoon you can slide into to read a book or play music," Bond said.

###

Note:

Photographs to illustrate this news release will be distributed without charge only to media representatives in the United States. They may be obtained by writing or phoning:

Public Affairs Audio-Visual Office
Code AP3, Johnson Space Center
Houston, TX 77058

Telephone No: 713 483-5111

Photo Nos: S78-38409
S78-35488
S78-35502
S78-33676

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-21

April 18, 1979
2 p.m. CST

JSC SELECTS METRO SERVICES FOR LOGISTICS CONTRACT TALKS

The NASA Johnson Space Center, Houston, has selected Metro Contract Services, Inc. of Houston for negotiations leading to the award of a cost-plus-award-fee contract covering logistics support services at the Center.

The initial year of the planned three-year program will run from May 1979 through April 1980. The estimated cost of the first year is approximately \$1.7 million. JSC's Center Operations Directorate will manage the contract.

Other bidders were Mercury, of Tustin, California, and Technical Contract Management, Inc., Austin, Texas.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-22

April 18, 1979

JSC HOSTS THE 13th AEROSPACE MECHANISMS SYMPOSIUM

The 13th Annual Aerospace Mechanisms Symposium will be held at JSC on April 26-27, 1979 at the Gilruth Recreation Center.

This is the only symposium in the world devoted exclusively to the interchange of information relative to design, fabrication, testing, and the operational use of mechanisms in aerospace and related fields. The conference is sponsored by NASA, Lockheed Missiles and Space Co., Inc. and California Institute of Technology. Mr. Alec C. Bond, Associate Director for Program Support of the Engineering and Development Directorate, will be the JSC Host Chairman.

The program starts at 8:30 a.m. on Thursday, April 26 and 8:00 a.m. on April 27 and concludes at approximately 5:00 p.m. on both days. Friday's last two hours will be devoted to a tour of the mockup and integration laboratory, Skylab trainer and Shuttle simulator building, and the space environment simulation lab.

Dr. Anna L. Fisher, astronaut candidate will be the banquet speaker. She will talk on her experiences in the Astronaut Training Program. The banquet program begins at 6:30 p.m. at the Sheraton Kings Inn.

#

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-23

April 25, 1979
2 p.m. CST

NASA SIGNS ADD-ONS TO ORBITER CONTRACT

The NASA Johnson Space Center, Houston, Texas, has signed two supplemental agreements to its contract with Rockwell International Corporation Space Division, Downey, California, for the Space Shuttle Orbiter.

The first supplement, valued at about \$10.9 million, covers modifications to the Orbiter/payload communications system, changes in Orbiter tire testing, and changes in test requirements for the Main Propulsion Test Article.

The second supplement covers extension of the Shuttle Flight Simulation Program from October 1, 1977 through March 15, 1980, and is valued at about \$11.5 million.

Value of the Rockwell Orbiter contract is brought to approximately \$3,399,836,141 by the two supplements.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-24

May 4, 1979

JSC DEPUTY DIRECTOR SJOBERG RETIRES

Johnson Space Center Deputy Director Sigurd A. Sjoberg will retire from federal service effective May 18 after 37 years with the National Aeronautics and Space Administration and its predecessor the National Advisory Committee for Aeronautics.

Sjoberg will join OAO Corporation as Director and General Manager of OAO Corporation, Houston Operations. OAO is an engineering and computer software firm based in Beltsville, Maryland.

Sjoberg, 59, joined NACA in 1942 as an aeronautical engineer. He holds a BS in aeronautical engineering from the University of Minnesota.

His NASA career has spanned high-performance aircraft research to manned spaceflight programs up to the Space Shuttle currently under development. He came to Houston in 1962 when the Center was relocated from Hampton, Virginia. He was named JSC deputy director in 1972, and had been director of flight operations since 1969.

"I've had as interesting and fruitful career as anyone could hope for," said Sjoberg. "Those years of involvement in our first ventures into space and manned exploration of the Moon are a part of my life that would be hard to match in any other field."

Sjoberg and his wife Elizabeth have three sons: Eric, 31, Stephen, 29, and Robert, 25.

A new JSC deputy director has not been named.

###

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-25

May 1, 1979

NASA AIRCRAFT SURVEYS ARCTIC ICE

Most of man's activities in the Arctic presently occur during a brief summer period when ice-free conditions exist. However, full development and recovery of the vast oil and gas resources in the Arctic region will be dependent upon development of techniques that enable year-round operation in the Arctic ice environment.

The Lockheed NC-130B aircraft (NASA 929), flown by Johnson Space Center, returned March 27 from a three-week mission in Alaska for the Arctic Microwave Ice Properties Experiment. More than 20 American and Canadian organizations, including NASA Lewis and Langley Research Centers, are involved in this experiment.

AMIPE is developing interactions between active and passive all-weather sensors that scan Arctic ice phenomena for commercial use. Data gathered are now being analyzed at a number of government and civilian facilities around the country.

- more -

According to mission manager Jim Lindemann, JSC's involvement in this experiment is significant and essential. Eight people from Johnson Space Center manned the NC-130B aircraft installed with NASA Langley sensors for the mission to the Arctic. They flew 22 flights in 24 days, traversing over 25,000 nautical miles of the globe in 91 hours.

The NC-130B's base of operations while in Alaska was Elmendorf AFB at Anchorage. Flights went over different locations around the Canadian and Alaskan Coast, covering various types of ice and ice formations. Locations overflown were the Mackenzie Delta region of the Beaufort Sea, the GEOS satellite track over Norton Sound, and the Bering Sea ice edge and floeberg region. In each of the areas flown extensive surface truth measurements were made, and samples were collected by people on the ice.

Other bases or airports used during the mission were Langley AFB, Virginia; K.I. Sawyer AFB, Michigan; Minneapolis Airport; Eielson AFB, Fairbanks; King Salmon, Alaska; Inuvik, Northwest Territory Airport, Canada; Galena, Alaska; Edmonton, Alberta, Canada; McChord AFB, Tacoma, Washington; and Peterson Field in Colorado Springs, Colorado.

The NC-130B also took time on its trip home to complete a snow study project in California. The JSC team accomplished all of the planned aircraft mission objectives, Lindemann said.

The AMIPE crew plans to return to the Arctic next winter to continue this experiment.

###

Photos S79-31303 and S79-31305 may be ordered from JSC Public Information Office ac 713 483-4231.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

NEWS RELEASE NO: 79-26

Upon Receipt

JSC DEPUTY DIRECTOR OF SAFETY ASSIGNED TO THREE MILE ISLAND TASK GROUP

Johnson Space Center's William M. Bland, Jr., is on special assignment in Washington to the President's Commission on the Accident at Three Mile Island.

Bland is serving on the technical staff, one of three groups formed to support the 11-member Commission created by Executive Order April 11. The Commission is to report its findings back to the President October 25, and Bland will be traveling between Houston and Washington during that period.

"We are trying to establish the cause of the accident," Bland said. A list of his group's official duties includes evaluation of operator training, equipment maintenance, quality assurance inspection and audits, control room displays, and instrument calibrations.

"And it will probably broaden as we go," Bland said.

Control room displays and operator training have already been cited by the Nuclear Regulatory Commission as major causes of the incident at Three Mile Island.

Before a space flight, mission equipment is tested in conditions as similar to space as possible. Bland's job, through the Apollo program and

News Release No: 79-26

and now with the Space Shuttle, is assuring that equipment meets established quality, reliability and safety levels.

Bland is Deputy Director of Safety, Reliability, and Quality Assurance at JSC. He started with the space program with NASA's predecessor NACA (National Advisory Committee for Aeronautics) in 1947, and has served on the Mercury, Apollo and now the Shuttle programs.

The President's Commission identified its five main tasks May 10: event identification, system safety, public health, public information, and institutional factors--the political, social, and economic environment.

"Initially I will be assisting on Task One," Bland said. "At the same time I will be working on system safety."

The Commission's staff director is Bruce Lundin, former NASA Lewis Research Center director.

Bland received a call from Washington May 1, and was in his new office in the capital by May 7. He has already made one trip to Three Mile Island, "getting orientation briefings," interviewing people from the area and doing preliminary investigations, "although in some areas the radiation level is such that we can't get in for awhile," he said.

The Commission's objectives include a technical analysis of the event and its causes, an assessment of emergency preparedness, how the public's right to information was served, and how future incidents should be handled.

-end-

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-34

May 23, 1979

ASTRONAUT FRED HAISE TO RESIGN FROM NASA

Astronaut Fred W. Haise has announced that he plans to resign from NASA the end of June to join Grumman Aerospace Corporation, Bethpage, New York, as vice president for Space Programs.

His NASA career started as an aerospace research pilot at Lewis Research Center in 1959. This was followed by three years at the Dryden Flight Research Center in California. Haise was one of the 19 astronauts selected by NASA in April 1966.

He was lunar module pilot for Apollo 13, April 11-17, 1970. The flight was to be a ten-day flight landing in the Fra Mauro region of the moon; however, the flight plan was modified enroute to the moon due to a failure of the service module cryogenic oxygen system, approximately 55 hours into the flight.

Haise, and fellow crewmen, James A. Lovell and John L. Swigert, working closely with Houston ground controllers, converted their lunar module into a lifeboat. Their emergency activation and operation of the lunar module systems conserved both electrical power and water in sufficient supply to assure their safe return to earth.

Haise was backup lunar module pilot for the Apollo 8 and 11 missions and was backup spacecraft commander for the Apollo 16 mission.

From April 1973 to January 1976, he was technical assistant to the manager of the Space Shuttle Orbiter Project.

Haise was commander of one of the two 2-man crews which piloted Space Shuttle Orbiter Approach and Landing Test (ALT) flights during the period of June through October 1977. He was named in March 1978 to command one of the early Shuttle Earth Orbital Test Flights.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

James D. Poindexter
AC 713 483-4433

May 29, 1979

RELEASE NO: 79-35

NASA TO PRESENT THE AEROSPACE EDUCATION SERVICES PROJECT

The National Aeronautics and Space Administration's lecture-demonstration program will be conducted by Robert D. Neal. Mr. Neal is assistant professor of aerospace education in the Foundation program at California State University, representing the Johnson Space Center, Houston, Texas.

Mr. Neal received his Bachelor of Science degree in geology, accomplishing both undergraduate and graduate work at California State University, Fresno, and has an extensive background in science and mathematics, education, and counselling. He has taught mathematics and science for six years at the secondary level in the public school systems of California, Texas, and Florida, and has initiated the design and implementation of Mathematics laboratories with an emphasis on manipulative devices.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Robert Gordon

RELEASE NO: 79-36

May 25, 1979

RMS CONTRACT AWARD

NASA has signed a letter of contract with the Canadian Commercial Corporation for the follow-on production of three remote manipulator systems for the Space Shuttle. The work is to be performed by Spar Aerospace Limited, of Toronto.

The letter of contract is expected to be replaced later this year with a definitive contract valued at approximately \$60 million. The contract calls for three remote manipulator systems, ground support equipment, and logistics support for the Shuttle.

The bulk of the work is to be performed at Spar's facilities in Canada with a portion subcontracted to other Canadian and U.S. firms.

The manipulator system is a 50-foot arm-like device that will allow astronauts in the Shuttle Orbiter to deploy or retrieve payloads in space. Delivery of the three systems to the Kennedy Space Center, Florida, is planned between 1982 and 1984.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-37

June 1, 1979
5 pm EDT

ALSO RELEASED AT NASA HEADQUARTERS

SKYLAB MANEUVER PLAN

NASA is studying maneuvers to shift Skylab into a lower-drag attitude which could add as much as 10-12 hours to the space vehicle's orbital lifetime. By changing Skylab from a high-drag to a low-drag one for eight hours, for example, it may be possible to delay reentry by about four hours. This is equivalent to nearly three revolutions around the Earth, during which time the Earth's rotation would shift the prospective reentry area by several thousand miles.

Skylab is expected to reenter between June 27 and July 21. As many as 500 pieces of hardware may survive reentry and reach the surface, distributed within a footprint approximately 161 kilometers (100 miles) wide and 6,437 kilometers (4,000 miles) long. NASA estimates the chance of injury from this debris to be about 1 in 150; that is 150 Skylab reentries would be likely to cause one injury.

- more -

On the last day of Skylab's flight, if the most populous areas of the Earth (Europe and Asia) lie under the orbital path on which reentry is expected, drag modulation maneuvers offer the possibility of delaying the reentry to subsequent orbit, shifting the likely reentry orbit to an orbit passing over less population, thereby further reducing the statistical hazard of damage or injury.

Studies indicate, that beginning about 24 hours before reentry, it may be possible to identify what areas of Earth lie under the more likely reentry orbits. Even in the last hours, however, it will be impossible to predict accurately the geographic location where Skylab debris might reach the surface.

In order to preserve the action to exercise drag modulation NASA plans to reorient Skylab later this month toward a torque-equilibrium attitude that balances the increasing areal dynamic forces and permits the relatively weak onboard systems to maintain the spacecraft stability. If this initial maneuver is successful and if the onboard systems do not degrade further, the Skylab attitude should remain under ground control up to the last few hours of orbital life. Drag modulation for reentry delay would only be attempted if a significant hazard reduction were possible and if failure of the maneuver would not increase risks of injury.

- end -

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-38

June 1, 1979
2 pm CDT

NASA SIGNS SUPPLEMENT TO IBM CONTRACT

The NASA Johnson Space Center, Houston, Texas, has signed a supplemental agreement to its contract with IBM Federal Systems Division, Gaithersburg, Maryland, covering 12 changes in Shuttle avionics software.

Most of the changes are refinements in software programming resulting from Orbiter avionics testing on Orbiter vehicles at Marshall Space Flight Center and Kennedy Space Center, and at other component test sites.

The supplement is valued at \$9,115,318, and brings the total value of the cost-plus-award-fee IBM contract to \$114,018,030.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-39

June 4, 1979

KLEINKNECHT ASSUMES NEW ROLE

Kenneth S. Kleinknecht, veteran NASA manager for manned space-flight projects, has been named to head Johnson Space Center operations at the Kennedy Space Center, Florida, to complete the manufacture of the Space Shuttle Orbiter, Columbia. He will direct installation of the thermal protection tiles and installation and modification of internal vehicle systems.

Kleinknecht, who joined the National Advisory Committee for Aeronautics (forerunner of NASA) in 1942, will report to KSC late this month from Paris, France, where he has been stationed as Deputy Associate Administrator for Space Transportation Systems (European Operations). That will remain his permanent assignment.

Astronaut Robert Overmyer of the Johnson Space Center will be deputy manager to Kleinknecht in the temporary manufacturing assignment at KSC. Overmyer has been a NASA astronaut since 1969. He is a colonel in the U.S. Marine Corps.

###

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-40

June 6, 1979
2 p.m. CDT

NASA EXTENDS NORTHROP AIRCRAFT MAINTENANCE CONTRACT

The NASA Johnson Space Center, Houston, Texas, has extended for a third year a contract with Northrop Worldwide Aircraft Services, Inc. of Webster, Texas, covering maintenance and modification of Center aircraft operating out of Ellington AFB, Texas.

The extension brings the total estimated costs of the cost-plus-award-fee Northrop contract to \$6,555,000, with a maximum award fee of \$317,000 for the third year.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-41

June 6, 1979

MCCALL'S SPACE MURAL TO BE DEDICATED JUNE 14

Space artist Bob McCall's 72-by-16 foot mural, "Opening the Space Frontier--the Next Giant Step," will be dedicated June 14 at 11 a.m. at the Johnson Space Center Visitors Center, Building 2 Auditorium.

McCall, who has been painting the mural from a scaffold in the visitors center since January, will give a 45-minute talk on his career. "I will review how I came to be so committed to documenting the space program," he said.

His talk will be illustrated by slides of his past work which includes the Viking missions to Mars stamp, the painting "Space Station One" for 2001, A Space Odyssey, space murals at the National Air and Space Museum in Washington, and at NASA's Dryden Flight Research Center in California, and his book of paintings Our World in Space, with text by Isaac Asimov.

Asimov calls McCall "the artist in residence of outer space." McCall has documented the space program in art since the first Mercury flights of 1961.

JSC is co-sponsoring the event with the Cultural Affairs Council of the Clear Lake Chamber of Commerce.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-42

June 7, 1979

ENGLAND RETURNS TO ASTRONAUT PROGRAM

Dr. Anthony W. England returned this week to the Johnson Space Center where he is rejoining the ranks of the scientist-astronaut program, effective June 3.

In August 1972, England left the NASA program to become a research geophysicist with the U.S. Geological Survey, Denver, Colorado. He went to the U.S.G.S. in Reston, Virginia August 1976, as deputy-chief of geochemistry and geophysics.

England said he was happy to be back at JSC. "I am looking forward to getting back into training and making a Shuttle flight," he said.

He was selected as a scientist-astronaut by NASA in August 1967. He completed the initial academic training at NASA and a 53-week course in flight training at Laughlin Air Force Base, Texas. He was a member of the support crews for the Apollo 13 and 16 flights.

England's background is in geology and physics. He earned his Ph.D. in that field from the Massachusetts Institute of Technology in 1970.

-end-

NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-43

June 8, 1979
2 p.m. CDT

PAN AM CONTRACT RENEWED AT JSC

The NASA Johnson Space Center, Houston, Texas, has renewed its contract with Pan American World Airways, Inc., Aerospace Services Division of Houston covering plant maintenance and operations support service at the Center.

Pan Am is responsible for operation of utility systems and maintenance of utilities, buildings, roads, ditches and special equipment at the Center.

Beginning May 1, 1979 and ending April 30, 1980, the cost-plus-award-fee contract is valued at an estimated \$8,529,000. Pan Am employs 274 people for the contract.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-44

June 11, 1979

SUMMER SPACE PROGRAM BRIEFINGS

The Johnson Space Center Public Affairs Office will be holding special briefings on the space program for educators each week through August 20.

The briefings will take place each Monday, Wednesday and Friday at 10 a.m. at the space center. They will cover lunar science, remote sensing and the Landsat satellite, and the Space Shuttle System. Free materials will be available at each session.

Attendance will be limited to the first 35 to register for each session. Attendance at the sessions will qualify educators to use the special lunar sample kits which have been prepared using real material from the moon.

Additional information may be obtained from Jim Poindexter at the Public Services Branch, Code AP4, Johnson Space Center, or by calling AC 713/483-4241.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-45

June 15, 1979

NASA WILL TRY TO ADJUST SKYLAB'S ATTITUDE

The Skylab space station, still stabilized but slowly approaching Earth's atmosphere, will be commanded on or about June 19 to realign its orbital position once more. This maneuver, if successful, will keep Skylab's attitude under control to avoid losing any future ability to adjust attitude and influence reentry if that is determined to be feasible.

The vehicle is now in a solar inertial attitude, which means that its solar panels are always pointed toward the Sun, but its position relative to the Earth is constantly changing.

As it comes nearer to the Earth, two things happen that affect its stability.

At lower altitudes, the spacecraft is buffeted more and more as the atmosphere becomes more dense. The density of the atmosphere slows the craft's orbital momentum and the buffeting creates disturbances that cause the vehicle to wobble in several different directions. Skylab's attitude control systems were designed to operate at an altitude of 430 kilometers (270 miles) where these forces are quite small so, as the forces become

-more-

greater, it becomes increasingly more difficult for the control systems to damp out the disturbances. It is currently passing through 270 km (167 mi.).

In its present attitude, when the spacecraft descends to about 255 km (159 mi.), the much denser atmosphere will cause disturbances so great that the attitude control system will be overwhelmed. If, at this point, Skylab is still in its solar inertial attitude, further management of the spacecraft's attitude will become impossible.

Aerodynamicists at NASA's Marshall Space Flight Center, Huntsville, Ala., have established that there are certain aerodynamic attitudes, called torque equilibrium attitudes, in which the aerodynamic and gravity forces are balanced, resulting in almost no disturbance to the vehicle.

In such an attitude, control can be maintained well below the 255 km (159 mi.) limit of the present attitude. The June 19 maneuver will be made in an attempt to bring the Skylab to this balanced, torque equilibrium attitude.

The torque-equilibrium orientation has never been tried with a spacecraft before, but computer models indicate the disturbance-free condition exists when the long axis of the spacecraft is aligned approximately perpendicular to the Earth's radius and perpendicular to Skylab's orbital plane. In this attitude the vehicle is approximately parallel to the Earth's horizon and moves through space sideways.

In this position, two separate forces act together to steady the craft.

By twisting Skylab so its solar arrays are on the back side, away from the "wind," the center of pressure is moved slightly aft of the vehicle's centerline. This makes it act somewhat like a weathervane.

The second force at work is due to gravity, with Skylab standing parallel to the Earth's surface, the Earth's gravity pulls equally on all parts of the vehicle.

If, however, one end of the vehicle rotates slightly closer to the Earth than the other, gravity forces tend to accelerate this action much like the rotation that occurs when a child's 'teeter-totter' becomes unbalanced. While this effect is normally destabilizing, but when combined with the aerodynamic forces at the torque-equilibrium point it can be countered by the vehicle attitude control system.

To implement the maneuver and provide controls in the new attitude, a new program will be transmitted to Skylab by the Johnson Space Center, Houston, Texas, flight controllers via tracking stations and stored in the spacecraft's computers until time for the maneuver to the new position.

June 19 was chosen for accomplishing the maneuver for two reasons: First, at that time, the spacecraft is expected to be at about 270 km (166 mi.) altitude, and still stabilized; and secondly, on that date the Sun will be at a favorable angle to provide sufficient power for operating Skylab systems in the torque-equilibrium orientation. In this attitude, the vehicle's solar panels will not receive as much sunlight as they now do in the solar inertial position.

"This will be a new experience in controlling Skylab," said the leader of the Skylab engineering team at the Marshall Center. "If we are successful in getting it into this new attitude," he continued, "we believe we have a good chance of maintaining attitude control, at least until it descends to an altitude of about 137 or 145 km (85 or 90 mi.)."

The latest North American Air Defense Command prediction for reentry is between July 7 and July 25.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-46

June 15, 1979

GARTRELL RETIRES

Harold E. Gartrell, assistant manager of the Shuttle Payload Integration and Development Office at the NASA Johnson Space Center has announced his retirement, effective immediately. He will join the Martin Marietta Aerospace Corporation in Denver, Colorado.

Gartrell has held key management positions at JSC since joining the space agency in 1963. He has worked in advance planning, Skylab and Shuttle, before assuming his current position as assistant manager for payload integration.

Gartrell, a native of Ft. Supply, Oklahoma, graduated from the West Point in 1953. He is married to the former Darlene Rowland. The Gartrells have two children, Alan and Annette.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-47

July 2, 1979

ASTRONAUT CANDIDATE KATHRYN SULLIVAN SETS ALTITUDE RECORD

An unofficial sustained altitude record for women was set July 1, 1979, by Astronaut Candidate Kathryn D. Sullivan in a NASA WB-57F reconnaissance aircraft.

The record altitude of 63,300 feet was reached during a four-hour flight. Sullivan, in a high altitude pressure suit, operated color infrared cameras and multispectral scanning equipment as the WB-57F spent one and one-half hours over the Big Bend area of West Texas.

Piloting the aircraft was Jim Korkowski, one of the NASA Airborne Instrumentation Research Program pilots. The flight was out of Ellington AFB near Houston.

Sullivan who has a doctorate in geology was selected in 1978 as one of 35 astronaut candidates training for the Shuttle program.

She is a mission specialist astronaut candidate and as such will be responsible for maintaining and operating similar equipment, plus additional duties on Shuttle flights. Flights in the WB-57F are training in preparation for her assignment to a Shuttle crew.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-48

July 3, 1979

NASA MODIFIES ROCKWELL ORBITER CONTRACT

The NASA Johnson Space Center has amended its contract with Rockwell International Corporation Space Division of Downey, California to cover some 56 engineering changes to the Orbiter.

The first supplemental agreement is valued at \$14,338,000 and covers 32 changes; the second is valued at \$2,869,833 and covers 24 changes, testing, repairs and spares. The value of the Rockwell contract is now approximately \$3.43 billion.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release

RELEASE NO: 79-49

July 10, 1979

JOHNSON SPACE CENTER TO HOLD OPEN HOUSE

FOR TENTH ANNIVERSARY OF MAN'S LANDING ON THE MOON

Johnson Space Center plans an open house July 20 to celebrate the tenth anniversary of Apollo 11 touchdown, man's first steps on the Moon. Governor Bill Clements has declared July 16-20 Space Week for the State of Texas.

On that day two new Space Center visitor attractions will officially open, and a postal sub-station will cancel special commemorative covers. Buildings that are not usually part of the Space Center tours will be open on a special walk-through basis.

In Mission Control Center tourists will refresh their memories of the Moon landing as videotapes of the last 10 minutes before touchdown play for those in the viewing area.

Apollo 11 films will show continuously in the Visitor Center. Between showings there will be a quick slide show on the Space Shuttle, NASA's Space Transportation System now in development, with astronauts on hand to deliver briefings.

JSC's new Lunar Rock Curatorial Facility will be officially dedicated and open to the public. Here lunar rocks will be on display, and visitors will watch employees at work processing the lunar samples.

-more-

Rocket Park, another new addition to the JSC visitor program, will also be dedicated on Space Day. In the past weeks truckers and haulers have assembled a complete version of a Saturn V, the rocket that sent Apollo missions to the Moon, near the main gate of the Space Center. In the future, picnic tables will be set up for tourists in the shade of space hardware.

Building 32, which houses the 36.6 meter (120 foot) and the 13.1 meter (43 foot) test chambers, will be open that day on a special guided basis, with Space Environment Simulation Laboratory employees on hand to explain machinery on the floor and in the chambers. Also, the Anechoic Chamber (Building 14) will be open that day only for a special walk-by tour.

Schedule of events for the open house is as follows:

- 9:00 a.m. Center Director Christopher C. Kraft, Jr., opens the postal sub-station and makes opening remarks.
- 9:30 Lunar Curatorial Facility dedication (Building 31A)
- 10:00 Dedication of Rocket Park
- 10:20 Media interviews with key persons in the News Center (Building 2 annex, Room 135)

The Center will be open its regular hours, 9 a.m. to 4 p.m., on Space Day. Special souvenirs honoring the Apollo missions will be on sale, and the usual attractions, such as the Skylab and Space Shuttle mockups and the museum of manned space flight, will be open.

The open house is part of NASA's nationwide celebration of the tenth anniversary of the first Moon walk.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-50

August 1, 1979

NASA TO RECRUIT SPACE SHUTTLE ASTRONAUTS

The National Aeronautics and Space Administration will begin accepting applications for Space Shuttle astronauts on an annual basis. This year, the period for submitting applications by civilians will begin October 1 and end December 1.

Depending on the needs of NASA for pilots and mission specialists, a selection will be made from rosters of qualified applicants resulting from this announcement. The rosters will be established annually.

Successful applicants will be asked to report to the Johnson Space Center, Houston, Texas in mid-1980 for a one-year training and evaluation program as astronaut candidates, after which pilot and mission specialist astronauts will be selected.

Selected applicants will be assigned to the Astronaut Office and placed in responsible technical or scientific positions where they will receive assignments to the Space Shuttle Program and continue work in their scientific or technical fields, where practicable.

Pilot astronauts will control the Space Shuttle during launch, orbital maneuvers and landings and be responsible for maintaining vehicle systems. Mission Specialist astronauts will have the overall responsibility for the

coordination, with the Commander and Pilot, of Shuttle operations in areas of crew activity planning, consumables usage and other Shuttle activities affecting experiment operations. Mission specialists will continue in their chosen fields of research and will be able to propose, develop, and conduct space experiments.

Pilot applicants must have a bachelor's degree from an accredited institution in engineering, biological or physical science or mathematics. They must have at least 1000 hours of "pilot-in-command" time in high performance jet aircraft, must pass a NASA spaceflight physical, and be between 64 and 76 inches in height.

Mission specialist applicants, while not required to be pilots, must meet the same educational requirements and have at least three years of relatable experience. An advanced degree may be substituted for experience. Mission Specialist applicants must pass a NASA spaceflight physical and be between 60 and 76 inches in height.

Civilians may obtain application forms and information material by writing to Astronaut (Mission Specialist) Candidate Program or Astronaut (Pilot) Candidate Program, Code AHX, NASA Johnson Space Center, Houston, Texas 77058.

Military personnel should apply through their respective military department, not directly to NASA. Procedures will be promulgated by the service branches.

Current regulations require that preference for appointment to Astronaut Candidate positions be given to U.S. citizens when there is an adequate source of well qualified citizens available. Qualified minority and women applicants are encouraged to apply.

Twenty-seven astronauts are currently available as Space Shuttle crewmen, including 11 scientists. An additional 35 astronaut candidates selected in 1978 are in training to qualify for selection to Space Shuttle crews. The number of new candidates to be selected in 1980 will be based on mission requirements and operational needs.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-51

August 10, 1979

CHARLESWORTH NAMED ACTING DEPUTY DIRECTOR OF JOHNSON SPACE CENTER

Clifford E. Charlesworth has been named acting Deputy Director for the Johnson Space Center effective today. Charlesworth replaces Sigurd A. Sjoberg, who retired May 18.

Charlesworth will leave his post as deputy manager, Shuttle Payload Integration and Development Program Office, where he has been for the past three years. As deputy manager of SPIDPO, Charlesworth was responsible for the coordination between Space Shuttle users and the Space Shuttle technical management here at JSC.

Prior to his SPIDPO assignment, Charlesworth, 48, was manager of the Earth Resources Program Office at JSC. ERPO was the NASA lead office for the development and application of Earth resources information. From 1970 through 1972 Charlesworth was deputy manager for the Skylab program.

Charlesworth joined NASA in Houston in 1962 as a flight controller. He served as a flight director for the Gemini and Apollo missions and was one of the flight directors for the Apollo 11 mission, the first to land men on the Moon, in 1969.

He holds a bachelor of science degree in physics from Mississippi College.

Charlesworth and his wife, Jewell, have a son, David, 18, and a daughter, Leslie Ann, 16. They live in Friendswood, Texas.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-52

August 24, 1979

JSC SELECTS PAN AMERICAN FOR ENGINEERING SUPPORT CONTRACT TALKS

The NASA Johnson Space Center, Houston, has selected Pan American World Airways, Inc., Aerospace Services Division, Cocoa Beach, FL, for negotiations leading to award of a cost-plus-award-fee contract for engineering support services at Johnson.

Pan American will be responsible for providing engineering design support for facilities and test programs at JSC. The contract amount is approximately \$1.3 million and covers the time from September 1, 1979 through August 31, 1980.

Other bidders were Allstates Design and Development, Houston, Collins International Service Company, Dallas, Kentron International, Dallas, and Rust Engineering Company, Birmingham.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-53

3 p.m. CDT
August 31, 1979

35 ASTRONAUT CANDIDATES COMPLETE TRAINING AND EVALUATION PERIOD

The 35 astronaut candidates who were selected in January 1978 and reported to the NASA Johnson Space Center in July 1978, have completed their initial training and evaluation period and are now eligible for selection to flight crews.

Change of the astronaut candidates' status to that of astronaut became effective today according to George W. S. Abbey, Director of Flight Operations.

"We are pleased with this newest group of astronauts performance and their adaptation to the Space Shuttle training program," Abbey said.

The training and evaluation period was to have been two years. Based on the experience with this group, future candidates selected for the astronaut program will also undergo a one-year training and evaluation period.

The new astronauts include 15 pilots and 20 mission specialists. Six of the latter are the first women to become astronauts in the United States space program.

Total strength of the astronaut office is now 62 who are eligible for selection for Space Shuttle flight crews.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 79-54

August 31, 1979

DSAD DIRECTOR BILL TINDALL TO RETIRE FROM NASA

Howard W. (Bill) Tindall, Jr., 54, Director of Data Systems and Analysis, announced plans to retire from NASA on September 7 after 31 years of government service.

Tindall joined the National Advisory Committee for Aeronautics, the predecessor of NASA, at the Langley Research Center, Virginia, in 1948, as a mechanical engineer. He worked primarily in the area of wind tunnel instrumentation and later in the development of real-time computer facilities and programming for project Mercury.

He collaborated in the studies for the number and location of radar stations and developed the mathematical techniques for generating Mercury orbit trajectories, radar pointing data and reentry trajectories.

In 1961 he joined the NASA Space Task Group (predecessor to the Manned Spacecraft Center, now the Johnson Space Center) and moved to Houston in 1962 as deputy assistant chief of mission planning.

- more -

In the fall of 1962, Tindall initiated the effort that led to the development of techniques and control center software for the Gemini rendezvous, the very first rendezvous of two vehicles in space.

He was named deputy chief of Mission Planning and Analysis Division in 1964 with the responsibility for developing new and improved methods for orbital determination for Earth orbital, lunar, and interplanetary trajectories, and the design and analysis of rendezvous phase of mission trajectories.

Additionally he provided technical director of the Massachusetts Institute of Technology's work on the Apollo spacecraft guidance and navigation computer programs. In 1967 he was also appointed chief of Apollo Data Priority Coordination in development of the techniques and procedures for utilizing the Apollo trajectory control systems for manned missions.

In 1970, Tindall was appointed deputy director for Flight Operations and in May of 1972 became director of Flight Operations. He assumed his present duties in January 1974 when his directorate was formed during a reorganization at the Center.

Asked about his future plans, Tindall said he is going to relax and probably travel some. He currently plans to continue to reside in this area.

A replacement for Tindall has not been named at this time.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

September 10, 1979

RELEASE NO: 79-55

NASA Tests New Space Maneuvering Backpack

NASA astronauts and engineers at the Johnson Space Center this week are evaluating a high fidelity mockup of a Buck Rogers style maneuvering unit designed to provide astronauts the ability to move around and work outside the Space Shuttle Orbiter in the 1980's.

The device, officially named the Manned Maneuvering Unit, fits on the back of spacesuited astronaut and furnishes him the ability to move around in the weightless environment of space. Nitrogen gas jets controlled by the astronaut provide the directional movement.

This is a third generation flying machine, an improvement over units designed for the Gemini and Skylab programs.

Ed Whitsett, manager of the maneuvering unit for the Center's crew systems division, said the new high fidelity mockup arrived last week

from the manufacturer, the Martin Marietta Corporation, Denver, Colorado. Although this unit will never fly, it has all the working mechanical parts necessary for crew operation and evaluation. Evaluations are being conducted in the crew system Building 7 laboratories.

The purpose of this three-month long evaluation and verification period, Whitsett said, is to check out the backpack with different sized astronauts, including some of the female astronaut candidates. These tests include fit checks and the mechanical operation of the unit's extendible arms which telescope for individual fit and to determine astronaut visibility and reach while using the unit.

In addition Whitsett anticipates tests will be made with the planned Orbiter work station from which astronauts may be called upon to use in the event of repairs or work outside the vehicle.

All systems of the unit, with the exception of the gas jets and the electrical parts, are workable. This includes the mechanical latches, the folding arms, switches and hand controllers. The hand controllers are similar to the Apollo type used by astronauts to control the Apollo command module.

One of the verification tests recently performed by Astronaut Bruce McCandless is the compatibility of the maneuvering unit with the astronaut and his self contained portable life support system (backpack). This has the suited astronaut with his life support system back into the maneuvering unit as it would be located in the

cargo bay of the Shuttle Orbiter. This action completes the mechanical latching of the maneuvering unit to the astronaut life support backpack. This is like backing into a phone booth with a large knapsack on your back.

This test went well and McCandless said he was very pleased with the operation. He said the use of this three dimensional mockup is "the proof of the pudding." It is one thing looking over detailed engineering drawings but it is another thing having a high fidelity mockup to work with, he said.

If during this evaluation period changes or modifications are determined necessary, such changes will be forwarded to the contractor for inclusion in the flight units. Delivery of the first flight unit to the NASA Kennedy Space Center in Florida is planned for early 1980.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

Milton E. Reim

For Release

RELEASE NO: 79-56

September 12, 1979

HISPANICS ARE ENCOURAGED TO APPLY FOR ASTRONAUT PROGRAM

The National Aeronautics and Space Administration is now recruiting astronaut candidates for the Space Shuttle Program and qualified Hispanics, male and female are encouraged to apply.

During the last recruiting program for astronaut candidates in 1976-77, over 8,000 applications were received.

Six women and three blacks were accepted in the last group selected as astronaut candidates.

Jose R. Perez, Deputy Chief of the Equal Opportunity Programs Office, at the NASA Johnson Space Center said, "Many qualified Hispanics are hesitant to apply for the astronaut program. I would like to encourage those persons and others to call or write NASA for an application."

Applications may be requested by writing to the Astronaut Candidate Program, Code AHX, NASA Johnson Space Center, Houston, TX 77058, or by calling AC 713/483-5907.

Depending on the needs of NASA for pilots and mission specialists, a selection will be made from rosters of qualified applicants resulting from this announcement. The rosters will be established annually.

Successful applicants will be asked to report to the Johnson Space Center, Houston, Texas in mid-1980 for a one-year training and evaluation

program as astronaut candidates, after which pilot and mission specialist astronauts will be selected.

Selected applicants will be assigned to the Astronaut Office and placed in responsible technical or scientific positions where they will receive assignments to the Space Shuttle Program and continue work in their scientific or technical fields, where practicable.

Pilot astronauts will control the Space Shuttle during launch, orbital maneuvers and landings and be responsible for maintaining vehicle systems. Mission Specialist astronauts will have the overall responsibility for the coordination, with the Commander and Pilot, of Shuttle operations in areas of crew activity planning, consumables usage and other Shuttle activities affecting experiment operations. Mission specialists will continue in their chosen fields of research and will be able to propose, develop, and conduct space experiments.

Pilot applicants must have a bachelor's degree from an accredited institution in engineering, biological or physical science or mathematics. They must have at least 1000 hours of "pilot-in-command" time in high performance jet aircraft, must pass a NASA spaceflight physical, and be between 64 and 76 inches in height.

Mission specialist applicants, while not required to be pilots, must meet the same educational requirements and have at least three years of relatable experience. An advanced degree may be substituted for experience. Mission Specialist applicants must pass a NASA spaceflight physical and be between 60 and 76 inches in height.

Civilians may obtain application forms and informational material by writing to Astronaut (Mission Specialist) Candidate Program or Astronaut (Pilot) Candidate Program, Code AHX, NASA Johnson Space Center, Houston, Texas 77058.

Current regulations require that preference for appointment to Astronaut Candidate positions be given to U.S. citizens when there is an adequate source of well qualified citizens available. Qualified minority and women applicants are encouraged to apply.

Twenty-seven astronauts are currently available as Space Shuttle crewmen, including 11 scientists. An additional 35 astronaut candidates selected in 1978 are in training to qualify for selection to Space Shuttle crews. The number of new candidates to be selected in 1980 will be based on mission requirements and operational needs.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton E. Reim

For Release

RELEASE NO: 79-57

September 12, 1979

MINORITIES ARE ENCOURAGED TO APPLY FOR ASTRONAUT PROGRAM

The National Aeronautics and Space Administration is now recruiting astronaut candidates for the Space Shuttle Program and qualified minorities and females are encouraged to apply. Acceptance of applications will begin Oct. 1 and end December 1.

During the last recruiting program in 1976-77, over 8,000 applications were received.

Six women and three blacks were accepted in the last group selected as astronaut candidates.

Joseph D. Atkinson, Jr., Chief of the Equal Opportunity Programs Office at the NASA Johnson Space Center said, "We know there are many qualified minorities who are hesitant to apply for one reason or another. I would like to personally encourage those persons to write or call NASA for an application."

Applications may be requested by writing to the Astronaut Candidate Program, Code AHX, NASA Johnson Space Center, Houston, Texas 77058, or by calling AC 713/483-5907.

Depending on the needs of NASA for pilots and mission specialists, a selection will be made from rosters of qualified applicants resulting from this announcement. The rosters will be established annually.

Successful applicants will be asked to report to the Johnson Space Center, Houston, Texas, in mid-1980 for a one-year training and evaluation program as astronaut candidates, after which pilot and mission specialist astronauts will be selected.

Selected applicants will be assigned to the Astronaut Office and placed in responsible technical or scientific positions where they will receive assignments to the Space Shuttle Program and continue work in their scientific or technical fields, where practicable.

Pilot astronauts will control the Space Shuttle during launch, orbital maneuvers and landings and be responsible for maintaining vehicle systems. Mission Specialist astronauts will have the overall responsibility for the coordination, with the Commander and Pilot, of Shuttle operations in areas of crew activity planning, consumables usage and other Shuttle activities affecting experiment operations. Mission specialists will continue in their chosen fields of research and will be able to propose, develop, and conduct space experiments.

Pilot applicants must have a bachelor's degree from an accredited institution in engineering, biological or physical science or mathematics. They must have at least 1000 hours of "pilot-in-command" time in high performance jet aircraft, must pass a NASA spaceflight physical, and be between 64 and 76 inches in height.

Mission specialist applicants, while not required to be pilots, must meet the same educational requirements and have at least three years of relatable experience. An advanced degree may be substituted for experience. Mission Specialist applicants must pass a NASA spaceflight physical and be between 60 and 76 inches in height.

Civilians may obtain application forms and information material by writing to Astronaut (Mission Specialist) Candidate Program or Astronaut (Pilot) Candidate Program, Code AHX, NASA Johnson Space Center, Houston, Texas 77058.

Military personnel should apply through their respective military department,

not directly to NASA. Procedures will be promulgated by the service branches.

Current regulations require that preference for appointment to Astronaut Candidate positions be given to U.S. citizens when there is an adequate source of well qualified citizens available. Qualified minority and women applicants are encouraged to apply.

Twenty-seven astronauts are currently available as Space Shuttle crewmen, including 11 scientists. An additional 35 astronaut candidates selected in 1978 are in training to qualify for selection to Space Shuttle crews. The number of new candidates to be selected in 1980 will be based on mission requirements and operational needs.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert V. Gordon

For Release

RELEASE NO: 79-58

September 20, 1979

ASTRONAUTS MAY REPAIR ORBITER HEATSHIELD IN FLIGHT

Two approaches to Shuttle Orbiter heatshield tile repair in orbit are under study at the NASA Johnson Space Center in Houston. Although engineers are confident that the tiles will withstand the rigors of launch into space, the studies are aimed toward having repair techniques and tools ready as a contingency against flight delays.

The two concepts under study would require Orbiter crewmen to go outside the spacecraft in space walks to make repairs before reentry into the Earth's atmosphere.

JSC Director Christopher C. Kraft said, "We have confidence in the Orbiter thermal protection system and expect to fly the early orbital missions as planned. But at the same time we think it prudent to be prepared to make in-orbit tile repairs should the tile certification situation not come up to expectations."

- more -

On the first flight the aerodynamic pressures are only 70 percent of later flights, so the inspection and repair might be more important for flights two and three.

Thousands of heat-resistant blocks cover the underpart and sides of the Shuttle Orbiter. If some were damaged during launch the tiles may have to be patched before the Orbiter could safely reenter the Earth's atmosphere, depending on the extent of damage.

"One lesson we learned from Skylab was that we could do repairs in orbit by going outside in spacesuits," said Shuttle engineer Reg Machell. "Orbital inspection and repair is being considered as a kind of insurance against tile damage."

Machell's team is looking at two ideas for tile inspection and repair. The first concept calls for an extendable boom to be attached to the Orbiter's 16-meter (50-foot) remote manipulator arm. Television cameras on the boom would feed a closed-circuit picture of tile condition to the crew in the cockpit. The same boom also could be fitted with a work station or platform from which an astronaut wearing a spacesuit and life-support backpack could repair damaged tiles.

The second concept under consideration calls for an astronaut wearing a gas-jet maneuvering backpack to "fly" out and around the Orbiter to inspect the tiles and make repairs

where necessary. The maneuvering backpack, officially named the Manned Maneuvering Unit, is an improved version of one test flown inside the Skylab orbital workshop during the second and third astronaut visits in 1973-74.

Both concepts call for the ability to detect damage measuring 26 square centimeters (4 square inches) or larger in the high-temperature reusable insulation that covers the Orbiter's belly, the underside of the wings and the vertical stabilizer's leading edge.

Repair kits under consideration include spray-on silicon carbide, a cure-in-place epoxy foam for replacing missing tiles, and a pre-cured ablator for bonding into areas with greater damage.

Studies to design a tile repair kit are being made by General Electric Company, Reentry and Environmental Systems Division, Philadelphia; Martin-Marietta Aerospace, Denver Division; and McDonnell Douglas Corp., McDonnell Douglas Astronautics Company, Huntington Beach, California. Total cost of the three separate studies, which are to be completed in ten weeks, is estimated at \$250,000.

Along with inspection, the Johnson engineering team is also looking at tools, techniques and ancillary equipment needed for suited crewmen to carry out repairs while outside the

spacecraft. Space Center and aerospace industry engineers will study the various concepts and techniques through the end of September.

The first Space Shuttle orbital flight likely will be in the spring or summer of 1980 from NASA's Kennedy Space Center in Florida.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 79-59

Upon Receipt

SPECIAL AEROSPACE MEDICINE COURSE SCHEDULED

A postgraduate seminar series on space medicine will be held Friday and Saturday, September 28 and 29, at the Flagship Hotel, Galveston.

The two-day program is entitled "Review of Space Medicine," and is designed primarily for physicians but open to other allied health professionals. The courses are structured so that at the completion of the series, all attendees will have an understanding of the space environment, spaceflight, and a working knowledge of man's physiologic adaptation to the space environment.

The seminar is sponsored by the Aerospace Medical Association and co-sponsored by the American College of Preventive Medicine and the Johnson Space Center.

The program begins at 8 a.m. Friday and concludes at 12:30 p.m. on Saturday.

Faculty members for this special program are all from life science or medical science divisions of NASA, the Air Force, the Navy, and several universities.

The course director is Dr. Frank Austin, assistant director for medical operations, NASA Johnson Space Center, and a professor of aerospace medicine at both the University of Texas School of Public Health, Houston, and the Wright State University Medical School, Dayton, Ohio.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-60

September 27, 1979
2 p.m. CDT

NASA SUPPLEMENTS ORBITER CONTRACT

The NASA Johnson Space Center, Houston, Texas, has signed two supplemental agreements to its contract to Rockwell International Space Division, Downey, California, covering changes in the Shuttle Orbiter.

One supplement covers 16 engineering changes in the systems integration effort and is valued at \$3.4 million. The second supplement is for eight work proposals previously authorized by NASA, including Shuttle spare parts modifications, liquid oxygen test hardware, Shuttle government-supplied equipment spares, and acoustic tests on a quarter-scale Orbiter. The second supplement is valued at \$9.6 million, bringing the total estimated value of the cost-plus-fixed-fee Rockwell contract to \$3.5 billion.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

NEWS RELEASE NO: 79-61

September 28, 1979

KOONS NAMED TO NEW POST

Wayne E. Koons, native of Lyons, Kansas, has been appointed manager of the Manufacturing and Test Office of the Space Shuttle Orbiter Project Office at the NASA Johnson Space Center, Houston, Texas.

Koons, 45, a 1956 graduate of Ottawa University, Ottawa, Kansas, has been with NASA since 1961. In 1961, while a U.S. Marine Corps pilot, he was commander of the helicopter which picked up America's first astronaut in Space, Alan B. Shephard. He served in the Marines from 1956-1961.

During his 18 years with NASA, Koons has held varied positions of increased responsibility. He served as Chief Recovery Systems Branch until 1969 when he became technical assistant to the Director of Flight Operations where he was responsible for planning and coordination of all flight operations efforts of the Skylab program.

In 1970 Koons was named manager of the Space Shuttle Payloads and Operations Office where he was responsible for identification, definition and planning of payloads and support facilities required for payloads scheduled to fly aboard Space Shuttle.

For the past several years Mr. Koons has been directly involved in development of the Shuttle Orbiter, the plane-like spacecraft which will be launched like a rocket and land like an aircraft. The Shuttle Orbiter is a highly

complex spacecraft which is designed for reuse up to as many as 50 times, without major refurbishment. The orbiter is a delta wing shaped spacecraft as large as a DC-9 and weighing 75 tons.

Since 1977 he has served as technical assistant to the manager of the Orbiter Project Office which is part of the JSC Shuttle Program Office. The initial flight of the Space Shuttle is now for early to mid-1980.

In his new position as manager of manufacturing and test Mr. Koons is responsible for direction of production and manufacture of the Orbiter at NASA contractor facilities. He determines procedures appropriate for selected manufacturing processes, reviews subsystem qualification test data and assesses spacecraft design with respect to manufacturing and operational requirements.

Koons is married to the former Cynthia Magill of San Angelo and Wichita Falls, Texas. Mr and Mrs. Koons reside in Clear Lake City, near NASA, with their five children Deborah Joy, 17; Linda Marie, 15; Alice Michelle, 13; Laura Kay, 10, and Jeffrey Aaron, three.

The Koons are members of the Clear Lake United Methodist Church, where he serves as Chairman, Board of Trustees.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-62

September 28, 1979
2 p.m. CDT

TRW TO ANALYZE SHUTTLE AVIONICS

The NASA Johnson Space Center, Houston, Texas, has awarded a cost-plus-fixed-fee contract to TRW, Inc., Defense and Space Systems Group covering Space Shuttle avionics systems analysis.

TRW will perform hazard analysis of critical Shuttle flight software, and independent analyses of guidance, navigation and control systems. The contract runs from October 1, 1979 through June 30, 1981, and has an estimated value of \$1,442,000.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-63

October 2, 1979

NASA TO DEVELOP MANNED MANEUVERING UNIT

NASA will proceed with accelerated development of the Manned Maneuvering Unit that will allow an astronaut to inspect and repair the Space Shuttle's heat resistant tile while in orbit. In addition to allowing heatshield inspection and repair, the unit will allow a wide variety of activities outside the spacecraft that requires the personal attention of an astronaut. These activities could include rescue operations, spacecraft servicing and repair, payload placement and other uses.

The Manned Maneuvering Unit is an improved version of a gas-jet maneuvering backpack test flown inside the Skylab orbital workshop during the second and third astronaut visits in 1973-74. It has been continuously updated and adapted since then.

NASA believes that inspection and repair of tiles should not be required on the first Shuttle orbital flight, designed to cause lower than normal stress, because the tiles will have been proof tested through the full range of stress expected during normal operational flight.

NASA has decided to develop this capability now so that it will be available on later Orbital Flight Tests when the launch environment will

be up to design level. Then tile inspection and repair can be performed if the launch environment is more severe than now predicted.

The first Shuttle orbital flight is anticipated between the end of March and July 1980. The second flight will occur four months later. The Manned Maneuvering Unit should complete development by August.

An alternative method of tile inspection, that of an extendable boom and television camera attached to the Shuttle's remote manipulator system, has been dropped from consideration.

In addition to the Maneuvering Unit, NASA will continue to examine, for at least another month, the feasibility of stabilized television units being placed in orbit by the Shuttle. The orbiter would fly by the television cameras for a closed-circuit tile check by the orbiter crew.

Thousands of heat-resistant tiles cover the underside and sides of the orbiter. If any tiles are damaged during launch, they may have to be repaired before the orbiter reenters the Earth's atmosphere. An astronaut using a Maneuvering Unit would use one of the tile repair methods being developed to repair any damage to the heat shield.

NASA will begin to conduct tile pull tests this week that will check the strength of several thousand tile bonds. The tests will involve monitoring the sounds made as a tile is pulled outward under pressure. Analysis of the sounds made by the tile under the stress will enable engineers to determine if each tile has adequate strength.

Tests of the tile will also begin soon using F-15 and F-104 aircraft at the Dryden Flight Research Center, Calif. The aircraft will perform maneuvers which demonstrate tile performance up to 140 percent of the dynamic pressure planned for Shuttle operations. The tests, however, will not check tile reaction to

acoustic noise, vibrations, heating, and local shocks the tile may have to endure during actual launch. These environmental factors are being separately tested in various ground facilities.

In November, the Air Force's Arnold Engineering Development Center, Tullahoma, Tenn. will begin wind tunnel testing of the tile. More extensive wind tunnel tests will follow in December.

NASA is confident that the results of the planned tests will prove the strength of the heatshield tile system.

-end-

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

Bob Gordon

For Release

RELEASE NO: 79-64

Upon Receipt

HEAD UP DISPLAY FOR ORBITER

An optical landing aid used by pilots of more than 20 United States and foreign commercial and military jet aircraft will be installed on NASA's Space Shuttle Orbiters to assist astronauts in the final critical minutes of landing the 75-ton spacecraft.

Called Head Up Display, the system has been in use in foreign jets since 1968 and American commercial and military aircraft since 1970. The Orbiter Head Up Display will project instantaneous displays of spacecraft speed, descent rate, altitude and other critical flight parameters onto a transparent viewing glass located above the cockpit window and hangs down much like a sun visor on an automobile.

NASA, this week, authorized the Space Systems Group of Rockwell International, Downey, California, prime contractor for Shuttle, to provide a head up display system for the commander and pilot for all NASA Orbiters, including the Columbia. The Columbia is presently undergoing final manufacturing and testing at NASA's Kennedy Space Center, Florida, prior to its initial flight sometime next year. The system will be installed in Columbia in time for the first operational flight of Shuttle, which is expected early in

1981, following completion of the Orbital Flight Test Program (OFT).

NASA's decision to equip Shuttle Orbiters with optical systems follows more than two years of research and evaluation which included dozens of test flights by NASA pilots in aircraft outfitted with one of several commercially available systems.

During landings an aircraft pilot like Shuttle astronauts must monitor his approach to the runway as well as watch the controls and displays which are below his direct line of sight. The pilot must move his head up and down in order to look out the window and glance down at the displays.

Pilots refer to visual transition, out the window and at the controls and displays as two different worlds -- the real world as seen through the cockpit window and the instrument world located about 30 inches below the pilots direct line of vision.

Visual transition from the real world (heads up) to the instrument world (heads down) is a problem during both clear weather and visually restrictive weather conditions. During the final moments of landing the pilots workload increases because of more frequent visual switching required between the two worlds.

The optical display system permits the astronaut to look out the cockpit window at the approaching runway but at the same time has the projected displays in front of him. The data projected on the look-through glass panel will include air speed, altitude, descent rate which in effect shows the astronaut where the Orbiter is aimed, where it should be aimed and shows the vehicle's critical flight parameters.

The display information projected on the viewing glass is generated by the on-board computers which is then fed through a cathode ray tube (CRT), into a folding mirror, then a collimator optical device and then onto the viewing glass in front of the pilot.

In addition to placement in all flight Orbiters, the optical system will be installed in the Shuttle Avionics Integration Laboratory and the Shuttle Training Aircraft, Mission Simulator and Shuttle Software Development Laboratory at the NASA Johnson Space Center, Houston, Texas. The SAIL provides a central facility where the Orbiter avionics and related hardware, flight software, flight procedures and associated ground supported equipment are currently undergoing testing.

Installation and checkout of the head up display optical systems in four Orbiters, SAIL and other NASA JSC simulators and trainers is expected to cost approximately \$17,000,000.

###

October 16, 1979

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-65

Upon Receipt

ALSO RELEASED AT NASA HEADQUARTERS

U.S., SOVIET SPACE MEDICINE GROUP TO MEET 10TH TIME

The U.S. and U.S.S.R. Joint Working Group on Space Biology and Medicine will hold its 10th meeting October 22-31 at the NASA's Johnson Space Center in Houston.

Participants plan to discuss biomedical results of space flights in the preceding year; results of ground-based studies; future joint life sciences experiments; controlled ecological life support systems; decompression sickness; and other subjects of mutual interest.

Dr. Gerald A. Soffen, NASA's Director of Life Sciences, and Dr. Nikolay N. Gurovsky, U.S.S.R. Ministry of Health, are the co-chairmen of the group.

The U.S./U.S.S.R. Space Cooperation Agreement of May 24, 1972, provides for joint meetings of working groups in several fields.

###

October 19, 1979

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-66

October 29, 1979

ALSO RELEASED AT AMES RESEARCH CENTER

MATSCO GETS NASA LIFE SCIENCES PAYLOADS CONTRACT

The National Aeronautics and Space Administration has negotiated a contract with Management & Technical Services Company (MATSCO, a subsidiary of General Electric). The contract is for Life Sciences Payload Development Engineering and Operations Support to the Space and Life Sciences Directorate at Johnson Space Center, Houston, Texas, and to the Life Sciences Directorate at the Ames Research Center at Moffett Field, California.

The contract period of performance is March 1979 through September 1980. The negotiated estimated cost and fee for the eighteen months is approximately \$7.2 million. This contract is the first of three increments for a total contract performance period through February 1984.

MATSCO will provide engineering, planning, technical management, operational support and acquisition of equipment to support a life sciences experiment program for flights aboard the Space Shuttle.

The contract will be under the management and technical direction of the NASA Johnson Space Center, Houston, Texas.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-67

November 14, 1979

NASA NEGOTIATES WITH WESTHEIMER RIGGING FOR SUPPORT CONTRACT

The NASA Johnson Space Center, Houston, has selected Westheimer Rigging and Heavy Hauling Co., Inc. of Houston, for negotiations leading to award of a contract for rigging and heavy hauling at the Center.

The cost-plus-fixed-fee contract is expected to be awarded December 1, 1979 to end November 30, 1980. Westheimer will employ nine people on the contract which is valued at approximately \$337,000.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 79-68

November 28, 1979
2 p.m. CST

NASA NEGOTIATES WITH ALPHA FOR CONSTRUCTION CONTRACT

The NASA Johnson Space Center, Houston, has selected Alpha Building Corporation of Houston for negotiations leading to the award of a cost-plus-award-fee contract for construction services at the Center.

Services to be covered in the contract include minor construction and alteration of laboratory systems, facilities, roads, sewers, walks, and other Center work. The contract will run from December 1, 1979 to November 30, 1980, and the estimated cost and fee totals \$2,357,670. NASA has the option to extend the contract for four additional one-year periods.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 79-73

December 11, 1979
2 p.m. CST

ORBITER INTEGRATED TEST

"Columbia," the first Space Shuttle Orbiter scheduled for flight in 1980, will undergo its first major simulated "flight," all systems test, on or about December 15, 1979, at the NASA Kennedy Space Center in Florida. Astronauts and ground support teams will put the vehicle through an around-the-clock five day critical operational test.

Among the tests to be performed during the 140-hour test are five separate launch and ascent flight profiles, on-orbit operations and one entry phase. Several hundred NASA and contractor aerospace engineers will take part in this Orbiter Integrated Test. Test teams at the Kennedy Launch Center, the NASA Johnson Space Center, Houston, Texas and Rockwell International Space Division, Downey, California, will monitor the test activities.

The Orbiter Integrated Test is one of the final verifications of Orbiter systems and electronics before the "Columbia" is cleared for final assembly with external tank and solid rocket boosters. The first launch is planned for June 30, 1980.

- more -

Test objectives include the demonstration of selected Orbiter hardware and software (computer programs) subsystem operations during a mission timeline. In addition to nominal launch conditions, the test will put the astronauts and ground support teams through various flight anomalies. The test is also designed to demonstrate the ability to switch from the primary to back-up flight control systems, the ability of ground support systems to support an Orbiter countdown and capability of the interface between the Orbiter onboard software and the Mission Control Center.

Astronauts John W. Young and Robert Crippen, prime crew for the first flight and backup crew members Joe Engle and Richard Truly will take part in the test. The prime crew and the backup crew will alternate in the Orbiter crew compartment throughout all phases of the 140-hour test.

The test will take place in the Orbiter Processing Facility at the Kennedy Space Center. The vehicle will be resting on its landing gear throughout the test. Power for the test will be furnished by the vehicle's electrical fuel cells or ground support via an umbilical. Launch sequences of ignition of the three Shuttle main engines and the two solid rocket boosters, which provide the 6.9 million lbs. of thrust necessary to place the spacecraft in orbit, will be simulated.

The test is divided into five runs with the first day devoted to buildup and checkout of vehicle and ground systems. Astronaut

crew members will be in the cockpit through all phases and on the second day the crew will wear pressure suits through the operation which includes a nominal launch and entry. The crew will be transferred from the crew quarters and enter the vehicle as they would on launch day.

The first launch sequence will be normal, but ensuing launches will include various modes which would conceivably require a mission abort, return to launch site or an emergency landing at a designated landing strip.

Flight controllers at the Mission Control Center's (MCC) Operation's Control Room at Houston, will monitor displays during the tests. Key parameters of systems performance will be observed by controllers who will later be on the scene during the actual launch and flight of the Shuttle.

Engineers in the Mission Evaluation Room in a building adjacent to the MCC will monitor similar display and voice loops. Their job will be to monitor data of selective portions and procedures of the test. It is their job to develop solutions to test problems if and when they occur.

###

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Lyn Cywanowicz

For Release

RELEASE NO: 79-74

December 11, 1979

NASA RECEIVES 3278 APPLICATIONS FOR ASTRONAUT PROGRAM

The National Aeronautics and Space Administration has received 3278 applications for Space Shuttle astronaut candidate in a recruiting drive that ended December 1. A total 2937 men and women applied for the 10 to 20 open astronaut positions, with 341 of these applying for both pilot and mission specialist categories.

The mission specialist category had 2,759 applicants and the pilot category had 488 applicants.

The number of women applicants for the two categories total 390.

The astronaut selection board at the Johnson Space Center is narrowing the selection to those best qualified in the two categories. From these, approximately 100 will be selected for preliminary screening and physicals at JSC in the spring of 1980.

Those selected as astronaut candidates will report to JSC in July 1980 for their one-year training and evaluation period. Final selection as an astronaut will depend on satisfactory completion of the evaluation period.

Pay for civilian candidates will be based on the Federal Government's General Schedule for pay scale from grades GS-11 through GS-14, with approximate salaries from \$20,611 to \$34,714 per year.

Military candidates will be assigned to JSC but will remain in active military status for pay, benefits, leave and other military matters.

NASA plans to accept applications for Space Shuttle astronauts on an annual basis. The number of open positions will depend on NASA's need for pilots and mission specialists.

###