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# NASA News

National Aeronautics and  
Space Administration

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

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John Lawrence

For Release

RELEASE NO. 82-001

IMMEDIATE

NOTE TO EDITORS:

The initial pre-flight press conference with Space Shuttle astronauts Col. Jack R. Lousma, U.S. Marine Corps, and Col. Charles G. Fullerton, U.S. Air Force, will be held at 9 a.m. Thursday, January 21, in the NASA News Center, Bldg. 2, Johnson Space Center, Houston. Colonels Lousma and Fullerton will be commander and pilot, respectively of the Space Shuttle, Columbia, on STS-3 -- the third exercise of NASA's Space Transportation System -- tentatively scheduled for launch in late March.

A second and final pre-flight news conference with this crew will be held at approximately 30 days prior to their flight.

January 6, 1982

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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Steve Nesbitt

For Release

RELEASE NO. 82-002

January 15, 1982

## MANNED SPACE ARCHIVES ESTABLISHED

A transfer ceremony January 28 at Rice University in Houston will mark the establishment of a Manned Space Flight Archives at the University's Library with historical material loaned by NASA.

Skylab astronaut Joseph P. Kerwin will speak at the 8 p.m. ceremony in the Grand Hall of the Rice University Memorial Center. The event is open to the public.

The JSC history office last September began transferring portions of its archival holdings to the Woodson Research Center at Rice's Fondren Library. Documents involved in the transfer relate to the Mercury, Gemini, and Skylab programs and to the Apollo-Soyuz Test Project. The material includes non-record copies of correspondence, reports, interviews and related materials which have been collected for nearly 20 years.

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The basic collection will be housed on the fifth floor of the Fondren Library in a secure part of the stacks in a humidity and temperature controlled environment. In addition to providing the space to house the collection, Rice also will provide personnel to index and arrange the collection so that it may be useful to researchers.

The collection is on indefinite loan to the University with NASA retaining title to the documentation.

The JSC history office will maintain large document collections relating to Apollo, the Space Transportation System, space stations and JSC institutional history. JSC and Rice will continue to collect documents to enhance the archives.

Speaker Kerwin served as science pilot on the Skylab 2 mission in 1973 . He was selected by NASA for the astronaut program in 1965.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Steve Nesbitt

For Release

Release No. 82-003

IMMEDIATE

NOTE TO EDITORS:

U.S. Representatives Jack Brooks, D-Tex., and Don Fuqua, D-Fla., will meet with NASA officials Tuesday during a visit to the Lyndon B. Johnson Space Center in Houston.

Brooks, of Beaumont, represents Texas' Ninth District which, under recent redistricting, soon will include the area around the Johnson Space Center.

Both Brooks and Fuqua are scheduled to meet with the press at 1:00 p.m. in Room 135 of Building 2. Brooks is chairman of the House Committee on Government Operations. Fuqua chairs the House Committee on Science and Technology.

In addition to meeting with JSC officials, the Congressmen and their wives will tour the center and meet informally with astronauts.

Brooks served with the Marines in World War II and was a Texas State Representative from 1946 to 1950. He has served continually in the U.S. House since 1953.

January 13, 1982

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Brian Welch

RELEASE NO. 82-004

January 22, 1982

## ORGANIZATIONAL CHANGES ANNOUNCED AT JSC

Two key changes are being made effective today in the organization of Johnson Space Center to reflect NASA's move into operations of the Space Transportation System by the end of the year.

The position of associate director within the Office of the Director has been created to provide additional top management support in the coming years, when 66 operational flights of the Space Shuttle are expected by the end of fiscal year 1987.

Henry E. "Pete" Clements, formerly Technical Assistant to the Director, has been designated Acting Associate Director. As such, he will be the third ranking official at JSC.

Clements first worked at JSC in 1962, and has been Technical Assistant to the Director since 1976. During the mid-1960s, he was responsible for the completion of the Mission Control Center, and for its preparation to handle Gemini flights and Apollo tests through Apollo 7. He also served at NASA Headquarters from 1971 to 1975 as Executive Officer in the Office of the Administrator.

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In addition, the functions and personnel of the former STS Operations Program Office are being merged into the Space Shuttle Program Office. Glynn S. Lunney will continue as manager of the Program Office, with responsibility for the combined functions of the two organizations.

The current personnel assignments and organizational mail codes will remain in effect until the announcement of detailed organizational changes. The merger of the two offices is designed to reflect the progress of the STS program from testing to operational phases.

The move is essentially the capstone of a JSC reorganization which began in 1975. At that time, the STS Operations Office was established to allow the Shuttle Program Office to concentrate its efforts on preparing for the first four test flights. STS-1 was considered the most critical of those flights, and with it an item for the history books, the Program Office is now able to devote more attention to scheduling and integration for operational missions. During the six years from 1975 to 1981, it was the STS Operations Office which represented JSC in making schedules for customers and payloads on post-development missions.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

John Lawrence

RELEASE NO. 82-005

IMMEDIATE

## 57-HOUR SIMULATION

A 57-hour simulation of the third flight of the Space Shuttle Columbia will be conducted at NASA's Johnson Space Center, Houston, beginning 8 a.m. Tuesday, Feb. 2.

The simulation will pick up the mission at one day, 21 hours and 45 minutes after launch. The exercise gives the astronauts and ground-based flight controllers realistic experience in working through the heart of the Space Transportation System-3 flight plan. The time segment involved will include many of the critical tests of the remote manipulator system (mechanical arm) and payload deployment exercises scheduled for Columbia's third flight.

STS-3 prime crew is Col. Jack R. Lousma, U.S. Marine Corps, mission commander, and Col. C. Gordon Fullerton, U.S. Air Force, pilot. For the simulation, they will be in a shuttle mission simulator which provides sensory and data feedback similar to that which they will experience in Columbia. The simulator will

-more-

January 27, 1982

be integrated with the Mission Operations Control Room at Houston, where three crews of flight controllers will alternate shifts and advise and guide the flight crew through its timed activities.

Simulation hardware is capable of introducing imaginary problems to the participants. Simulated problems give the flight and ground crews experience and training in dealing with unexpected events which might occur during an actual mission.

A second 57-hour long-duration simulation is planned at Johnson Space Center March 2-4, during which other segments of the STS-3 flight plan will be exercised. In addition to these, shorter simulations are held three times a week at JSC, during which the participants train on various launch and landing situations, as well as certain critical on-orbit operations.

STS-3 is scheduled as a 7-day, 3-hour mission with launch anticipated no earlier than March 22.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Terry White

For Release

RELEASE NO. 82-006

January 29, 1982

## NASA SIGNS CUSTODIAL CONTRACT WITH OMEGA

The NASA Johnson Space Center, Houston, has signed a cost-plus-fixed-fee contract with Omega Services, Inc. of Houston for custodial support services at the Center.

Valued at \$1,795,600 for the first year, the contract covers janitorial maintenance, cleaning, trash pickup and removal in Center buildings and public areas. The contract begins February 1, 1982 and ends January 31, 1983, with two one-year extension options.

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# NASA News

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

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For Release

John Lawrence

RELEASE NO. 82-007

February 9, 1982

## NOTE TO EDITORS

The final pre-mission news conference with the prime crew for the third flight of the Space Shuttle Columbia will be at 9 a.m. Friday, Feb. 26, in the Olin. E. Teague auditorium at Johnson Space Center, Houston.

Astronauts Col. Jack R. Lousma, USMC, commander, and Col. C. Gordon Fullerton, USAF, pilot, are to fly Columbia on a seven-day mission with launch scheduled on March 22.

Briefings on the flight plan, experiments and Remote Manipulator System will be conducted on Thursday, Feb. 25.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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RELEASE NO. 82-008

For Release

Dave Alter

IMMEDIATE

## SPACE OPERATIONS CENTER

The Space Operations Center (SOC) is a concept for a shuttle-serviced, permanently-manned facility with eight to twelve persons in low earth orbit up to 90 days.

Several concepts exist. The one here reflects the SOC Program Plan report completed by a special study team at NASA's Johnson Space Center.

While Space Shuttles will enhance future commercial, economic, technological and defense strength, practical use the next 20 years requires assembly, deployment, control, routine service and maintenance of large complex commercial or defense systems.

A manned operations center, which exploits the Shuttle and permits incremental growth in space operations, is the essential next step in exploitation of space, say NASA planners. The Space Operations Center becomes a space base and marshalling yard for large and complex payloads including an upper stage propulsion system in low earth orbit (LEO).

It provides garage space for reusable cryogenic stages for easier access, reducing cost of geosynchronous (high and stationary) space operations.

The SOC becomes a manned base from which the Department of Defense could develop military capabilities or more efficient space operations for national defense, and a manned sky platform for long-term science and applications research.

It houses a manufacturing facility in a weightless environment.

The Johnson Space Center design calls for a SOC that operates continuously with maintenance and resupply for ten years. SOC parts are delivered and assembled by the Shuttle orbiter, operating in low earth orbit between 230 and 280 statute miles. A full-up, eight-to 12-man operations center weighs about 245,000 pounds and is about 435 feet long -- tip to tip.

The JSC Space Operations Center would have various modules, all using common structural assemblies and subassemblies, interchangeable subsystems, components, and mission hardware whenever practical to reduce program costs.

The SOC accommodates mixed crews, at first two-to-three persons. As the capability grows, crews increase to four and six, and eventually eight to twelve. Crews are rotated, with no member remaining on station more than 90 days.

The SOC becomes a permanently-habitable orbiting facility, built up of modular sections by the Space Shuttle orbiter in three phases.

Initial launch places an **energy section** in orbit. It is a short cylindrical structure containing two unfolding booms with solar arrays, antennas, reaction control system and radiators. The central part accommodates external batteries, propellant tanks, internal power conditioning and switching equipment. It also is equipped with a small computer to operate until the first command module arrives and berths to it. A central hatch isolates the section's two halves. The energy section weighs between 34,500 and 43,400 pounds

A second launch brings up a **command module** to be joined to the energy section, completing Phase I of the build-up. Now the basic SOC housekeeping

functions are available: power, communications, command-control, stabilization, data management and life support. Unattended manned operation is possible for short periods.

The command module has one docking and nine berthing ports, airlocks, a command and control station, guidance and control, data management, open loop life support and accommodations for two. One airlock is equipped with a hyperbaric chamber. Each command module can support a crew of four in an emergency. A command module weighs between 40,700 and 50,200 pounds.

During Phase I, a **stage assembly fixture** might be brought up to permit storage and assembly of multi-stage expendable orbit transfer systems.

During Phase II, a **manipulator**, similar to the Shuttle remote manipulator system, is mounted on a command module and emplaces modules during subsequent buildup phases.

The next launch brings a second command module to the other end of the energy section, duplicating command module functions.

Each of the next two buildup launches delivers a **habitation module**. The two provide redundant closed-loop life support, with each accommodating a crew of four. The two habitation modules furnish life support and emergency accommodations for the crew of eight. Each of the two habitation modules have two berthing ports and each module weighs between 25,600 and 28,200 pounds.

External storage racks hold payload handling tools and construction fixtures.

A docking tunnel, delivered by orbiter to the manned SOC, is positioned and berthed to the two ports atop the two habitation modules. There are two



docking and eight berthing locations for orbiters and other arriving equipment. This is the phase III look and SOC now is ready for long-term manned habitation of 8 to 12 persons. With additional support equipment, the space platform is now capable of full flight support, space construction and satellite servicing.

During Phases II and III, unpressurized hangars take form, protecting orbit transfer system stages from damage by orbiting debris and providing an enclosed space for maintenance. Liquid hydrogen and oxygen tanks store propellants.

It takes five parts to build any SOC module. Named "**segmented construction**," the concept of five basic structural parts speeds up manufacturing with simplified tooling and fabrication.

Each cylindrical segment is separated into four equal internal spaces (volumes) which surround a central passageway. One section houses subsystems and crew requirements.

Segmented construction makes it possible to assemble a SOC with shorter modules using the same structural and subsystem units for a permanently manned facility in a high inclination orbit.

The SOC relies on **reaction control system thrusters** mounted on extension arms attached to solar array booms protruding from the energy section. Monopropellant is hydrazine. Thruster power varies between 14 and 30 pounds, depending on the pressure in the tanks, which are situated outside the energy section and refilled from pressure-fed tanks on logistics modules transported between earth and SOC by Shuttle orbiter. Containing pressurized and unpressurized sections, logistics modules become storage areas while berthed to the SOC.

Six solar arrays on two booms extending from the energy section furnish **electric power**. In addition nickel-hydrogen batteries in the energy section

provide power during occultation (when arrays are in the dark and not receiving sunlight).

Array output voltage is reduced by energy module power conditioning equipment to 28 volts DC and 115 AC, 400 Hz for distribution to modules. It also provides power to chargers for SOC's nickel-hydrogen batteries.

**Guidance, navigation and control systems** ignite reaction control thrusters when needed to keep SOC stable and pointed correctly, or to raise SOC's altitude.

The SOC communicates with orbiting spacecraft and space-walking astronauts through voice intercom, closed circuit TV and caution and warning signals. Central control of **communications and tracking** is in each command module.

Permanent **crew and interior accommodations** in habitation modules include crew quarters, food preparation equipment, dining tables, lighting, physical fitness equipment, maintenance and stowage provisions. The SOC provides private facilities and a kitchen area designed to serve frozen foods. Interim accommodations during Phases I and II are in the command modules.

Each habitation module has a folding desk and recreation facilities.

There are three levels of health maintenance facilities:

- . Habitation module 1 is equipped similar to a doctor's office.
- . Habitation module 2 is more like an emergency room.
- . Command modules have medical kits for emergencies.

The **environmental control and life support** systems, located in the habitation modules, recirculate and purify wastewater and air.

Ventilating fans circulate air in the habitation and command modules and in the docking tunnels. Each command and habitation module contains air cooling heat exchangers. Emergency oxygen and nitrogen are stored outside the command modules.

Space Operations Center **interior accommodations** include a controlled oxygen/nitrogen atmosphere and "pre-breathing" is not required before Extravehicular Activity. Four crew members may carry out simultaneous EVAs. The SOC provides earth and space viewing windows.

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Note: black and white glossies or color transparencies of SOC are available.

Feb. 19, 1982

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Steve Nesbitt

For Release

RELEASE NO. 82-009

February 9, 1982

## THIRTEENTH LUNAR AND PLANETARY SCIENCE CONFERENCE TO BE HELD

Future directions of Earth and planetary exploration will be among topics highlighted in the 13th Annual Lunar and Planetary Science Conference March 15-19 at the NASA Lyndon B. Johnson Space Center in Houston.

Scientists from around the world attend the annual event which began after the first rock samples were returned from the moon in the Apollo program. Large quantities of lunar soil and rock continue to be studied at research centers, along with samples of meteorites and cosmic dust collected on Earth.

Other highlights include a session Monday on the activities of the NASA Solar System Exploration Committee, and a Wednesday discussion entitled "New Opportunities for Earth and Planetary Research in the Mid-1980s."

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"Prospects for Man on Mars in the Twenty-First Century," will be the topic of a session on Wednesday evening.

Conference participants will be kept busy during the five-day event, attending some of the 299 oral presentations to be delivered in 25 wide-ranging topics.

Registration for the conference will be held Sunday, March 14, at the Lunar and Planetary Institute adjacent to the Johnson Space Center on NASA Road One. For more information, call 486-2135.

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NOTE TO EDITORS:

--Press abstracts of presentations at the conference will be available during the event and by mail afterward as long as the limited supply lasts.

--Interviews with participants in the conference may be arranged by contacting Steve Nesbitt, Public Information Office, Johnson Space Center, 483-5111. An interview desk will be set up in the registration area on the second floor of the Gilruth Recreation Center at JSC for interview requests during the conference.

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

John Lawrence

RELEASE NO. 82-010

February 16, 1982

## DR. KERWIN NAMED SCIENCE ADVISOR

Astronaut Dr. Joseph P. Kerwin has been appointed by the National Aeronautics and Space Administration to assume duties as the agency's Senior Science Representative in Australia, effective in April.

Upon conclusion of this two-year assignment, Dr. Kerwin will return to the Astronaut Office at Johnson Space Center, Houston.

Dr. Kerwin will report to the NASA Associate Administrator for Space Tracking and Data Systems, and will act as liaison between that office and Australia's Department of Science and Technology.

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For close to 20 years NASA has had a representative in Australia. Two Australian sites --- at Yarragadee and Orroral Valley --- support Space Shuttle operations by providing voice contact and data acquisition and relay. The stations are operated by Australia under contract to NASA.

Dr. Kerwin's responsibility will be to coordinate NASA tracking requirements with the Australian government and assure its awareness of NASA's plans in space, as well as to facilitate a productive climate for scientific cooperation.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

Terry White

RELEASE NO. 82-011

February 12, 1982

## SLAYTON LEAVES SPACE AGENCY; WAS IN FIRST ASTRONAUT GROUP

Donald K. "Deke" Slayton, 58, manager for orbital flight test in the Space Shuttle Program Office at the NASA Johnson Space Center, Houston, will leave NASA about March 1 after 23 years with the space agency. Slayton is the last of the original seven astronauts still with NASA who were selected in 1958 for Project Mercury.

Slayton retired from NASA in February 1981, but stayed on the job on a temporary appointment as a rehired annuitant.

He will serve as a consultant to Aerospace Corporation of El Segundo, California and to Space Services, Inc. of Houston, from a Clear Lake-area office.

Slayton said of his two decades with the space program, "There's nothing I'd rather have been doing. I really looked forward to getting up each morning. But this new phase of my career looks like it also should lead to constructive, enjoyable work."

-more-



Grounded from space flight in August 1959 because of a suspected heart condition, Slayton later was approved for flight status and was part of the American crew in the July 1975 US-Soviet Union Apollo-Soyuz joint space rendezvous and docking mission.

While grounded, Slayton served as head of the Astronaut Office and Director of Flight Crew Operations at the Space Center. Slayton resigned from the Air Force in 1963 and joined NASA. He was manager for the approach and landing tests with Space Shuttle Orbiter Enterprise from 1975 to 1977 after his space flight. In 1977 he was named to manage the four-mission orbital flight test program with Orbiter Columbia to bring the Shuttle Space Transportation System to operational readiness.

Slayton joined the Air Force in 1942 as an aviation cadet and flew 56 combat missions in Europe and seven over Japan as a B-25 bomber pilot. He was a test pilot at the USAF Test Pilot School at Edwards Air Force Base, California when he was selected as a Mercury astronaut. Slayton has logged more than 7,000 hours flying time, most of which is in jet aircraft.

He holds a bachelor's degree in aeronautical engineering from the University of Minnesota and attended public schools in his home town of Sparta, Wisconsin.

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# NASA News<sup>1</sup>

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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John Lawrence

For Release

RELEASE NO. 82-012

IMMEDIATE

## NASA NAMES CREWS FOR THREE MISSIONS

Astronaut crews for the fourth, fifth and six flights of the Space Shuttle were announced today by the National Aeronautics and Space Administration.

Crewmen for STS-4 are Capt. Thomas K. Mattingly, USN, commander, and Henry W. Hartsfield, pilot. STS-4 is planned for launch in early July for a duration of approximately seven days. It will be the last of four orbital flight test missions verifying Shuttle hardware and software subsystems.

STS-5 is scheduled for mid-November as a five-day mission to deploy commercial payloads. It is the first flight to employ mission specialist astronauts. Mission commander is Vance D. Brand, and Col. Robert F. Overmyer, USMC, is pilot. Mission specialists are Dr. Joseph P. Allen and Dr. William B. Lenoir.

Columbia is the spacecraft for both missions.

March 1, 1982

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STS-6 will be the first flight of the Shuttle orbiter Challenger and is planned for January 1983. It will be a two-day mission to deploy NASA's Tracking and Data Relay Satellite, one of an eventual two-satellite system which will provide more comprehensive voice and data coverage between the ground and orbiting Space Shuttles. The crew is Paul J. Weitz, commander; Col. Karol J. Bobko, USAF, pilot; Donald H. Peterson and Dr. Story Musgrave, mission specialists.

Backup crews will no longer be assigned to Space Shuttle flights. A pool of experienced Shuttle pilots now exists, and a crewman could be replaced with minimal impact to crew training and scheduling.

# # #

Astronaut biographies are attached.

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Paul J. Weitz (pronounced WHITES) (Captain, USN  
(Retired))  
NASA Astronaut

BIRTHPLACE AND DATE: Born in Erie, Pennsylvania, on July  
25, 1932. His mother, Mrs. Violet Futrell, now  
resides in Norfolk, Virginia.

PHYSICAL DESCRIPTION: Blond hair; blue eyes; height:  
5 feet 10 inches; weight: 180 pounds.

EDUCATION: Attended McKinley Elementary School in Erie,  
Pennsylvania, and Harborcreek High School in  
Harborcreek, Pennsylvania; received a bachelor of  
science degree in Aeronautical Engineering from  
Pennsylvania State University in 1954 and a master's  
degree in Aeronautical Engineering from the U.S.  
Naval Postgraduate School in Monterey, California, in  
1964.

MARITAL STATUS: Married to the former Suzanne M. Berry of  
Harborcreek, Pennsylvania; her father is Mr. John H.  
Berry.

CHILDREN: Matthew J., September 23, 1958; Cynthia A.,  
September 25, 1961.

RECREATIONAL INTERESTS: Hunting and fishing are among his  
hobbies.

ORGANIZATIONS: Fellow, American Astronautical Association.

SPECIAL HONORS: Awarded the NASA Distinguished Service  
Medal, and the Navy Distinguished Service Medal,  
Astronaut Wings, Air Medal (5 awards), and Commenda-  
tion Medal (for combat flights in Vietnam); also  
presented the Federal Aviation Agency's Space  
Mechanic Technician Award (1973), the Los Angeles  
Chamber of Commerce Kitty Hawk Award (1973), the City  
of Chicago Gold Medal (1974), the Robert J. Collier  
Trophy for 1973 (1974), the Pennsylvania State  
University Alumni Association's Distinguished Alumni

Award and named a Pennsylvania State Alumni Fellow (1974), the AAS Flight Achievement Award for 1973 (1974), the AIAA Haley Astronautics Award for 1974, the Federation Aeronautique Internationale's V. M. Komarov Diploma for 1973 (1974), the Dr. Robert H. Goddard Memorial Trophy for 1975, the 1974 Harmon International Aviation Trophy for Astronaut (1975).

**EXPERIENCE:** Weitz received his commission as an Ensign through the NROTC Program at Pennsylvania State University. He served for one year at sea aboard a destroyer before going to flight training and was awarded his wings in September 1956.

He served in various naval squadrons until he was selected as an astronaut in 1966.

He has logged more than 6,200 hours flying time--5,100 hours in jet aircraft.

**NASA EXPERIENCE:** Mr. Weitz is one of the 19 astronauts selected by NASA in April 1966.

Weitz served as pilot on Skylab 2 (SL-2), the first manned Skylab mission, which launched on May 25 and ended on June 22, 1973. With him for the initial activation and 28-day flight qualification operations of the Skylab orbital workshop were Charles Conrad, Jr., (spacecraft commander) and Joseph P. Kerwin (science-pilot).

In logging 672 hours and 49 minutes aboard the workshop, the crew established a new world record for a single mission. Weitz also logged 2 hours and 11 minutes in extravehicular activities.

Weitz retired from the United States Navy on June 1, 1976, with 22 years of service, but remains with NASA as a civilian astronaut.

**CURRENT ASSIGNMENT:** Weitz has been designated deputy chief of the Astronaut Office.

-end-

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Henry W. Hartsfield, Jr.  
NASA Astronaut

BIRTHPLACE AND DATE: Born in Birmingham, Alabama, on  
November 21, 1933. His mother, Mrs. Norma  
Hartsfield, resides in Pinson, Alabama.

PHYSICAL DESCRIPTION: Brown hair; hazel eyes; height:  
5 feet 10 inches; weight: 165 pounds.

EDUCATION: Graduated from West End High School, Birmingham,  
Alabama; received a bachelor of science degree in  
Physics at Auburn University in 1954; performed  
graduate work in Physics at Duke University and in  
Astronautics at the Air Force Institute of  
Technology; and awarded a master of science degree in  
Engineering Science from the University of Tennessee  
in 1971.

MARITAL STATUS: Married to the former Judy Frances Massey  
of Princeton, North Carolina. Her mother, Mrs. Marguerite  
Hales, resides in Goldsboro, North Carolina.

CHILDREN: Two daughters: Judy Lynn, May 29, 1958; Keely  
Warren, May 14, 1959.

SPECIAL HONORS: Awarded the Air Force Meritorious Service  
Medal; the General Thomas D. White Space Trophy for  
1973 (1974).

EXPERIENCE: Hartsfield received his commission through the  
Reserve Officer Training Program (ROTC) at Auburn  
University. He entered the Air Force in 1955, and  
his assignments have included a tour with the 53rd  
Tactical Fighter Squadron in Pitburg, Germany. He is  
also a graduate of the USAF Test Pilot School at  
Edwards Air Force Base, California, and was an  
instructor there prior to his assignment in 1966 to  
the USAF Manned Orbiting Laboratory (MOL) Program as  
an astronaut. After cancellation of the MOL Program  
in June 1969, he was reassigned to NASA.

He has logged over 5,270 hours flying time--of which over 4,700 hours are in the following jet aircraft: F-86, F-100, F-104, F-105, F-106, T-33, and T-38.

**NASA EXPERIENCE:** Hartsfield became a NASA astronaut in September 1969. He was a member of the astronaut support crew for Apollo 16 and served as a member of the astronaut support crew for the Skylab 2, 3, and 4 missions.

Hartsfield retired in August 1977 from the United States Air Force with more than 22 years of active service but continues his assignment as a NASA astronaut in a civilian capacity. He was a member of the orbital flight test missions group of the astronaut office and was responsible for supporting the development of the space shuttle entry flight control system and its associated interfaces.

**CURRENT ASSIGNMENT:** Hartsfield is backup pilot for STS-2, Columbia's second orbital flight test.

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# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: William B. Lenoir (PhD)  
NASA Astronaut

BIRTHPLACE AND DATE: Born on March 14, 1939, in Miami, Florida. His father, Mr. Samuel S. Lenoir, resides in Miami.

PHYSICAL DESCRIPTION: Brown hair; brown eyes; height: 5 feet 10 inches; weight: 150 pounds.

EDUCATION: Attended primary and secondary schools in Coral Gables, Florida; is a graduate of the Massachusetts Institute of Technology where he received a bachelor of science degree in Electrical Engineering in 1961, a doctor of science in 1962, and a doctorate in 1965.

MARITAL STATUS: Married to the former Elizabeth May Frost, daughter of Mr. and Mrs. Thomas F. Frost who reside in Brookline, Massachusetts.

CHILDREN: William B., Jr., April 6, 1965; Samantha E., March 20, 1968.

RECREATIONAL INTERESTS: His hobbies include sailing, woodworking, and outdoor activities.

ORGANIZATIONS: Senior member of the Institute of Electrical and Electronics Engineers; member of the American Geophysical Union, Eta Kappa Nu, and the Society of Sigma Xi.

SPECIAL HONORS: A Sloan Scholar at the Massachusetts Institute of Technology and winner of the Carleton E. Tucker Award for Teaching Excellence at MIT; awarded the NASA Exceptional Service Medal (1974).

EXPERIENCE: From 1964 to 1965, Lenoir was an instructor at MIT; and in 1965, he was named assistant professor of Electrical Engineering. His work at MIT included teaching electromagnetic theory and systems theory and performing research in the remote sensing of planetary atmospheres and surfaces and the theory of radiative transfer in anisotropic media.

He has been an investigator in several satellite experiments and continues research in this area while completing his astronaut assignments.

Lenoir is a registered professional engineer in Texas.



He has logged over 2,300 hours of flying time in jet aircraft.

NASA EXPERIENCE: Dr. Lenoir was selected as a scientist-astronaut by NASA in August 1967. He completed the initial academic training and a 53-week course in flight training at Laughlin Air Force Base, Texas.

Lenoir was backup science-pilot for Skylab 3 and Skylab 4, the second and third manned missions in the Skylab Program. During Skylab 4, he was co-leader of the visual observations project and coordinator between the flight crew and the principal investigators for apollo telescope mount solar science matters.

From September 1974 to July 1976, Lenoir spent approximately one-half of his time as leader of the NASA Satellite Power Team. This team was formed to investigate the potential of large-scale satellite power systems for terrestrial utility consumption and to make program recommendations to NASA Headquarters.

CURRENT ASSIGNMENT: Presently, Lenoir is supporting the space shuttle program in the areas of payload deployment and retrieval. His interest in the remote sensing of the earth and its resources continues, with particular emphasis on the role of man.

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APRIL 1979

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Karol J. Bobko (Colonel, USAF)  
NASA Astronaut

BIRTHPLACE AND DATE: Born in New York, New York, on December 23, 1937. His parents, Mr. and Mrs. Charles P. Bobko, reside in Gulf Harbors, Florida.

PHYSICAL DESCRIPTION: Blond hair; blue eyes; height: 5 feet 11 inches; weight: 180 pounds.

EDUCATION: Graduated from Brooklyn Technical High School, New York; received a bachelor of science degree from the Air Force Academy in 1959 and a master of science degree in Aerospace Engineering from the University of Southern California in 1970.

MARITAL STATUS: Married to the former F. Dianne Welsh of Denver, Colorado. Her mother, Mrs. Ann Frances Welsh, resides in Denver.

CHILDREN: Michelle A., February 8, 1963; Paul J., December 1, 1965.

SPECIAL HONORS: Awarded the NASA Exceptional Service Medal and three JSC Group Achievement Awards (2 in 1972; 1 in 1977); presented two Air Force Meritorious Service Medals (1970 and 1979).

EXPERIENCE: Bobko, an Air Force Colonel, was a member of the first graduating class of the Air Force Academy. Subsequent to receiving his commission and navigator rating, he attended pilot training at Bartow Air Base, Florida, and Vance Air Force Base, Oklahoma. He completed his flight training and received his wings in 1960.

From 1961 to 1965, he flew F-100 and F-105 aircraft while assigned as a pilot with the 523d Tactical Fighter Squadron at Cannon Air Force Base, New Mexico, and the 336th Tactical Fighter Squadron at Seymour Johnson Air Force Base, North Carolina. He attended the Aerospace Research Pilots School at Edwards Air Force Base, California, and was assigned as an astronaut to the USAF Manned Orbiting Laboratory Program in 1966.

He has logged over 4,100 hours flight time in the F-100, F-104, F-105, T-33, and T-38.

NASA EXPERIENCE: Colonel Bobko became a NASA astronaut in September 1969. He was a crew member on the highly successful Skylab Medical Experiments Altitude Test (SMEAT) -- a 56-day simulation of the Skylab mission, enabling crewmen to collect medical experiments baseline data and evaluate equipment, operations and procedures.

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Bobko was a member of the astronaut support crew for the Apollo-Soyuz Test Project (ASTP). This historic first international manned space flight was completed in July 1975. Subsequently, he was a member of the support crew for the Space Shuttle approach and landing tests conducted at Edwards Air Force Base, California. He served alternately as capcom and prime chase pilot during these approach and landing test (ALT) flights.

CURRENT ASSIGNMENT: Colonel Bobko is currently assigned to the orbital flight test missions group involved with the ground test and checkout of the shuttle "Columbia."

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APRIL 1979

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Robert F. Overmyer (Colonel, USMC)  
NASA Astronaut

BIRTHPLACE AND DATE: Born July 14, 1936, in Lorain, Ohio.

PHYSICAL DESCRIPTION: Brown hair; blue eyes; height: 5 feet 11-3/4 inches; weight: 180 pounds.

EDUCATION: Attended schools in Westlake, Ohio; received a bachelor of science degree in Physics from Baldwin-Wallace College in 1958 and a master of science degree in Aeronautics from the U. S. Naval Postgraduate School in 1964.

MARITAL STATUS: Married to the former Katherine E. Jones of Pittsburgh, Pennsylvania. Her parents, Mr. and Mrs. Henry R. Jones, reside in Delray Beach, Florida.

CHILDREN: The Overmyers have three children.

ORGANIZATIONS: Member of the Society of Experimental Test Pilots.

SPECIAL HONORS: Awarded the USMC Meritorious Service Medal (second award) for flight test duties in support of the shuttle approach and landing test program.

EXPERIENCE: Colonel Overmyer entered active duty with the Marine Corps in January 1958. After flight training, several squadron tours, and graduate school, he attended the Air Force Test Pilots School in 1965. He was selected as an astronaut for the USAF Manned Orbiting Laboratory Program in 1966.

NASA EXPERIENCE: He was selected as a NASA astronaut when the MOL program was cancelled in 1969. Colonel Overmyer's first assignment with NASA was engineering development duties on Skylab. He then served on the Apollo 17 and the ASTP (Apollo-Soyuz Test Project) support crews. In 1976, Colonel Overmyer was assigned duties on the space shuttle ALT program and was the prime T-38 chase pilot for orbiter Free Flights 1 and 3.

CURRENT ASSIGNMENT: Colonel Overmyer is presently assigned engineering development duties on the space shuttle program. He is currently assigned to the orbital flight test missions group of the astronaut office.

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APRIL 1979

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Story Musgrave (MD)  
NASA Astronaut

BIRTHPLACE AND DATE: Born August 19, 1935, in Boston, Massachusetts, but considers Lexington, Kentucky, to be his hometown. His mother, Mrs. Marguerite Swann Musgrave, resides in Upper Saddle River, New Jersey.

PHYSICAL DESCRIPTION: Blond hair; blue eyes; height: 5 feet 10 inches; weight: 149 pounds.

EDUCATION: Graduated from St Mark's School, Southborough, Massachusetts, in 1953; received a bachelor of science degree in Mathematics and Statistics from Syracuse University in 1958, a master of business administration degree in Operations Analysis and Computer Programming from the University of California at Los Angeles in 1959, a bachelor of arts degree in Chemistry from Marietta College in 1960, a doctorate in Medicine from Columbia University in 1964, and a master of science in Physiology and Biophysics from the University of Kentucky in 1966; and expects to receive a doctorate in Physiology and Biophysics with minor in Aeronautical Engineering from the University of Kentucky in 1979.

MARITAL STATUS: Married to the former Patricia Marguerite Van Kirk of Patterson, New Jersey. Her mother, Mrs. Neil Van Kirk, resides in Wayne, New Jersey.

CHILDREN: Lorelei Lisa, March 27, 1961; Bradley Scott, July 3, 1962; Holly Kay, December 13, 1963; Christopher Todd, May 12, 1965; and Jeffrey Paul, June 19, 1967.

RECREATIONAL INTERESTS: His hobbies are bicycling, chess, flying, gardening, long-distance running, motorcycling, parachuting, photography, scuba diving, skateboarding, and soaring.

ORGANIZATIONS: Member of the Air Force Association, the Alpha Kappa Psi, the American Association for the Advancement of Science, the Civil Aviation Medical Association, the Flying Physicians Association, the International Academy of Astronautics, the Marine Corps Aviation Association, the National Aeronautic Association, the National Aerospace Education Council, the National Geographic Society, the New York Academy of Sciences, Phi Delta Theta, the Soaring Society of America, and the United States Parachute Association.

SPECIAL HONORS: National Defense Service Medal and an Outstanding Unit Citation as a member of the United States Marine Corps Squadron VMA-212 (1954); United States Air Force Post-doctoral Fellowship (1965-1966); National Heart Institute Post-doctoral Fellowship (1966-1967); Reese Air Force Base

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Commander's Trophy (1969); American College of Surgeons I. S. Ravdin Lecture (1973); NASA Exceptional Service Medal (1974); Flying Physicians Association Airman of the Year Award (1974).

EXPERIENCE: Following graduation from high school in 1953, Musgrave entered the United States Marine Corps and completed basic training at Parris Island, South Carolina. He completed training at the U. S. Naval Airman Preparatory School and the U. S. Naval Aviation Electrician and Instrument Technician School in Jacksonville, Florida. He served as an aviation electrician and instrument technician and as an aircraft crew chief while completing duty assignments in Korea, Japan, Hawaii, and aboard the carrier USS Wasp in the Far East.

He has flown 90 different types of civilian and military aircraft, logging over 10,800 hours flying time, including 4,300 in jet aircraft, and he holds instructor, instrument instructor, glider instructor, and airline transport ratings. An accomplished parachutist, he has made more than 330 free falls--including over 100 experimental free-fall descents involved with the study of human aerodynamics. He holds an International Jumpmaster Class C License and was President and Jumpmaster of the Bluegrass Sport Parachuting Association in Lexington, Kentucky, from 1964 to 1967.

Dr. Musgrave was employed as a mathematician and operations analyst by the Eastman Kodak Company, Rochester, New York, during 1958.

He served a surgical internship at the University of Kentucky Medical Center in Lexington from 1964 to 1965. He continued there as a U. S. Air Force post-doctoral fellow (1965-1966) working in aerospace medicine and physiology and as a National Heart Institute post-doctoral fellow (1966-1967) teaching and doing research in cardiovascular and exercise physiology.

He has written 30 scientific papers in the areas of aerospace medicine and physiology, and temperature regulation, exercise physiology, and clinical surgery.

NASA EXPERIENCE: Dr. Musgrave was selected as a scientist-astronaut by NASA in August 1967. He completed astronaut academic training and a year of military flight training. He worked on the design and development of the Skylab Program, was the backup science-pilot for the first Skylab mission, and was a capsule communicator for the second and third Skylab missions. He was the mission specialist on the first and second Spacelab Mission Simulations.

CURRENT ASSIGNMENT: Dr. Musgrave is participating in the design and development of all Space Shuttle extravehicular activity equipment including spacesuits, life support systems, airlocks, and manned maneuvering units, and he is training for future Space Shuttle missions. He is continuing clinical and scientific training as a part-time surgeon at the Denver General Hospital and as a part-time professor of physiology and biophysics at the University of Kentucky Medical Center.

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APRIL 1979

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Donald H. Peterson (Colonel, USAF (Retired))  
NASA Astronaut

BIRTHPLACE AND DATE: Born in Winona, Mississippi, on October 22, 1933. His parents, Mr. and Mrs. Henry W. Peterson, reside in Winona.

PHYSICAL DESCRIPTION: Blond hair; green eyes; height: 5 feet 8 inches; weight: 147 pounds.

EDUCATION: Graduated from Winona City High School, Winona, Mississippi; received a bachelor of science degree from the United States Military Academy at West Point, New York, in 1955, and a master's degree in Nuclear Engineering from the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, in 1962.

MARITAL STATUS: Married to the former Bonnie Love of Coffeerville, Mississippi. Her parents, Mr. and Mrs. Tom Love, reside in Coffeerville.

CHILDREN: Donald H. Jr., July 16, 1958; Jean M., October 17, 1959; Shari L., August 28, 1962.

RECREATIONAL INTERESTS: He enjoys jogging, swimming, weight-lifting, flying, and mathematics.

SPECIAL HONORS: Awarded the Air Force Commendation Medal and the Meritorious Service Medal, and the JSC Group Achievement Award (1972).

EXPERIENCE: Peterson was graduated from West Point in 1955. His assignments included 4 years as a flight instructor and military training officer with the Air Training Command, and 3 years as a nuclear systems analyst with the Air Force Systems Command.

He is a graduate of the Aerospace Research Pilot School, Edwards Air Force Base, California, and was one of the third group of astronauts assigned to the USAF Manned Orbiting Laboratory Program.

He has logged over 4,490 hours flying time--including more than 4,180 hours in jet aircraft.

NASA EXPERIENCE: Peterson became a NASA astronaut in September 1969. He served on the astronaut support crew for Apollo 16.

CURRENT ASSIGNMENT: Peterson retired from the United States Air Force with the rank of colonel after having completed more than 24 years of active service but continues his assignment as a NASA astronaut in a civilian capacity. He is a member of the astronaut office's shuttle orbital flight test missions group which is responsible for engineering support, man/machine interface, and safety assessment.

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APRIL 1980

# Biographical Data



Lyndon B. Johnson Space Center  
Houston, Texas 77058

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NAME: Joseph P. Allen (PhD)  
NASA Astronaut

BIRTHPLACE AND DATE: Born in Crawfordsville, Indiana, on June 27, 1937. His parents, Mr. and Mrs. Joseph P. Allen III, reside in Greencastle, Indiana.

PHYSICAL DESCRIPTION: Brown hair; blue eyes; height: 5 feet 6 inches; weight: 125 pounds.

EDUCATION: Attended Mills School and is a graduate of Crawfordsville High School in Indiana; received a bachelor of arts degree in Math-Physics from DePauw University in 1959; a master of science degree and a doctorate in Physics from Yale University in 1961 and 1965, respectively.

MARITAL STATUS: Married to the former Bonnie Jo Darling of Elkhart, Indiana. Her parents, Mr. and Mrs. W. C. Darling, reside in Elkhart.

CHILDREN: David Christopher, September 1968; Elizabeth Darling, May 1972.

RECREATIONAL INTERESTS: His hobbies include handball, squash, flying, sailing, skiing, music, and photography.

ORGANIZATIONS: Member of the American Physical Society, the American Astronautical Society, the American Institute of Aeronautics and Astronautics, the American Association for the Advancement of Science, the American Astronautical Society, Phi Beta Kappa, Beta Theta Pi, Sigma Xi, and Phi Eta Sigma.

SPECIAL HONORS: Winner of a Fulbright Scholarship to Germany (1959-1960), the Outstanding Flying Award, Class 69-06, Vance Air Force Base (1969), two NASA Group Achievement Awards (1971 and 1974) in recognition of contributions to the Apollo 15 Lunar Traverse Planning Team and for subsequent work on the Outlook for Space Study Team; presented the 1972 Yale



# NASA News

National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**

Houston, Texas 77058  
AC 713 483-5111

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John Lawrence

For Release

RELEASE NO. 82-013

February 23, 1982

The final long-duration simulation in preparation for the third flight of the Space Shuttle Columbia will be held at NASA's Johnson Space Center, Houston, Tuesday through Thursday, March 2-4.

The 57-hour exercise will begin at 8 a.m., picking up the mission at one day, 21 hours, 45 minutes after launch.

Astronauts and ground-based flight controllers gain realistic training during simulations. Sophisticated computer systems provide feedback identical to that which the participants would receive during an actual mission. Moreover, simulation hardware is capable of introducing imaginary problems to the participants, giving them experience in dealing with unexpected events which could occur during an actual mission.

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STS-3 astronauts are Marine Col. Jack R. Lousma, commander, and Air Force Col. C. Gordon Fullerton, pilot. Their station during the exercise will be the Shuttle mission simulator, which provides an environment closely approximating that of the Columbia. The simulator will be integrated with Houston's Mission Control Center where three crews of flight controllers will alternate shifts and advise and guide the flight crew through its timed activities.

The exercise will include many of the critical phases of the STS-3 flight plan. Although it does not duplicate the entire planned seven-day, three-hour mission, the test will incorporate many objectives involving the remote manipulator system (robot arm) and payload deployment exercises.

This is the second long-duration simulation conducted in preparation for STS-3. The first was conducted February 2-4. In addition, shorter simulations are held three times a week at JSC, during which participants train on various launch and landing situations, as well as on-orbit operations.

STS-3 is planned for launch at 9 a.m. (CST) Monday, March 22.

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# NASA News

National Aeronautics and  
Space Administration

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

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For Release

John Lawrence

RELEASE NO. 82-014

March 15, 1982

## FLIGHT CONTROL OF STS-3

STS-3 will be the first experience as primary flight director for two of the three men who will function in that capacity during the upcoming seven-day flight of Columbia.

Three teams of flight controllers will alternate shifts in the Mission Operations Control Room (MOCR) at NASA's Johnson Space Center, Houston. This facility will provide centralized control of the Space Shuttle from launch to landing. Each team is headed by a flight director who has ultimate responsibility for decisions made during his shift.

Ascent team flight director is Tommy K. Holloway, and Harold M. Draughon will lead the entry team. Although both worked as backup flight directors during STS-2, this is their first experience with primary control of a team. The third flight director will be veteran Neil B. Hutchinson, who directed the launch phases of STS-1 and 2.

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Hutchinson is lead flight director for STS-3. This charges him with responsibilities for pre-launch mission planning and coordination, as well as leadership and management duties during the on-orbit phase of the mission.

Three other flight directors have been assigned backup duties on STS-3, preparing them for primary roles in future Space Shuttle flights. They are Jay H. Greene (ascent team), John T. Cox (orbit team) and Gary E. Coen (entry team).

The flight control function of the MOCR will be real-time, in-flight analysis of the mission as associated with trajectory and vehicle systems. Full-time manning by flight controllers will begin at T-9 hours by the entry team. At T-2 hours, the ascent team will take up positions at MOCR consoles for the launch phase of the mission. Following ascent, the orbit team will assume responsibility for the flight. Thereafter, shift changes will follow the regular rotation pattern of orbit-entry-ascent teams. Teams will normally come on duty about one hour prior to the shift change to be briefed by the team which it relieves.

For STS-3, as with other Shuttle operations, the MOCR will be backed up by additional teams operating from nearby staff support rooms where data on the mission are monitored and analyzed in detail. Within the MOCR, console groupings remain generally as before with management personnel in the back row, the flight director, planners and communicators in the third row, vehicle systems officers in the second row, and trajectory-oriented controllers in the front row.

Specific console positions in the MOCR, their call signs and their functions are:

- o Flight Dynamics Officer (FIDO)--Responsible for monitoring powered phases of the mission, orbital events and trajectories from the standpoint of mission success. Monitors vehicle energy levels during reentry.
- o Guidance Officer (Guidance)--Monitors onboard navigation and onboard guidance software.
- o Data Processing System Engineer (DPS)--Responsible for data processing hardware and executes software for the vehicle's five onboard general purpose computer systems.
- o Aeronautical Systems Officer (Aero)--Monitors and assesses performance of vehicle aerodynamic surfaces during flight phases in the sensible atmosphere.
- o Flight Surgeon (Surgeon)--Responsible for advising the flight director of the crew's health status.
- o Booster System Engineer (Booster)--Responsible for monitoring the vehicle's main engine and solid rocket booster propulsion systems during the ascent phase of the flight, and monitoring and purging systems before reentry.
- o Propulsion Systems Engineer (Prop)--Responsible for the status of the reaction control and orbital maneuvering systems engines during all phases of flight.
- o Guidance, Navigation and Control Systems Engineer (GNC)--Responsible for all inertial navigation systems hardware, radio navigation systems hardware, radio navigation aids and digital autopilot systems.

- o Electrical Power, Instrumentation and Lighting Systems Engineer (EGIL)--Responsible for fuel cells, AC and DC power distribution systems, instrumentation systems, transducers, caution and warning panels and vehicle lighting systems.
- o Ground Control (GC)--Responsible for configuring for acquisition or loss of signal and status of ground support equipment.
- o Environmental, Consumables and Mechanical Systems Engineer (EECOM)--Monitors cryogenics levels for fuel cells and propulsion systems, cooling systems, and mechanical systems such as doors and vents.
- o Integrated Communications Systems Engineer (INCO)--Responsible for onboard communications systems, tape recorder and voice transmission. Routinely manages onboard communications system configuration.
- o Operations Integration Officer (PIO)--Responsible for detailed implementation of mission control procedures and for coordinating and controlling the group displays and clocks in the control center.
- o Flight Activities Officer (FAO)--Responsible for flight crew checklists, procedures and timelines.
- o Spacecraft Communicator (Capcom)--Responsible for voice contact with the flight crew concerning details of the mission flight plan, flight procedures, mission rules and spacecraft systems.
- o Payloads Officer (Payloads)--Coordinates mission experiments.

Personnel assignments follow. An asterisk (\*) indicates assignment as a backup member of the team.

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	<u>ASCENT TEAM</u>	<u>ORBIT TEAM</u>	<u>ENTRY TEAM</u>
Flight Director	Tommy K. Holloway	Neil R. Hutchinson	Harold M. Draughon
	Jay H. Greene*	John T. Cox*	Gary E. Coen*
Capsule Communicator	Terry J. Hart	Sally K. Ride	Steven R. Nagel
	S. David Griqqs*	George D. Nelson*	Brewster H. Shaw*
Operations Integration Officer	William A. Middleton	Wayne B. Boatman	Kim W. Anson
Flight Dynamics Officer	Willis M. Bolt	James E. J'Anson	Gregg Staresinich
	Ronald C. Epps *		
Guidance	Will S. Presley	Thornton E. Dyson	J. T. Chapman
Booster Systems Engineer	Jerry L. Borrer		T. Cleon Lacefield
	T. Cleon Lacefield*		
Propulsion Systems Engineer	N. Wayne Hale, Jr.	Larry W. Strimple	Ronald D. Dittimore
Guidance, Navigation and Control Systems Engineer	Richard N. Fitts	Frank E. Trlica, Jr.	Harold J. Clancy
Aerodynamics Officer	Gregg C. Hite		T. R. Brice
Data Processing Systems Engineer	Brock R. Stone	Ernest E. Smith	Darrell E. Stamper
Integrated Communications Systems Engineer	Granvil A. Pennington	J. F. Conner	Alan L. Briscoe
Electrical Power, Instrumentation and Lighting Systems Engineer	Paul M. Joyce	William P. Gravett	J. Milton Heflin, Jr.
Environmental, Consumables and Mechanical Systems Engineer	Jimmy S. McLendon	C. L. Dumis	William V. Bates, Jr.



ASCENT TEAM

Flight Activities Officer

Carolynn L. Conley

Payloads

Tandy M. Bruce

Kathryn A. Havens\*

Flight Surgeon

E. Schulman

Ground Controller

James R. Brandenburg

N. Talbot\*

ORBIT TEAM

Robert H. Mute

William J. Boone

J. Logan

R. Williams

ENTRY TEAM

Henry J. Pierce, Jr.

Robert M. Kelso

M. W. Bungo

D. Halter

G. M. Egan\*

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# NASA News

National Aeronautics and  
Space Administration

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

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Brian Welch

For Release

RELEASE NO. 82-015

March 16, 1982

## JSC RECORDS 15 MILLIONTH VISITOR

The day had been set aside for an educational trip to the Johnson Space Center for the Paul family of Fort Worth, Texas. The Paul's two children, Heidi, 8, and Thad, 6-1/2, were on spring vacation, and visiting the space center seemed like a good way to broaden their horizons. By the afternoon of March 9, the whole family's horizons had been broadened more than any of them could have expected.

At 9 a.m. that day, Elaine Paul stepped up to the information counter in the JSC Visitor Center to ask a question, and became the 15 millionth visitor recorded at the center since it opened in 1964.

She and her husband, Dr. Gordon Paul, and Heidi and Thad were escorted to a nearby office, where they were introduced to STS-1 Pilot Robert Crippen. Thad and Heidi were wide-eyed. Dr. and Mrs. Paul were somewhat stunned, and the whole family was almost speechless.

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The children were given VIP information packets, and the family was presented a large color montage of the STS-1 flight by Crippen. Later in the day, the family was given a special VIP tour of the space center and left that afternoon trailing cloud nine behind them.

Dr. Paul, a pediatric neurologist, moved his family to Fort Worth two years ago. Mrs. Paul said her children have already been exposed to concepts of spaceflight and space exploration in school, and that the trip to the space center would be a memory that will stay with them for a long time to come.

JSC has averaged at least one million visitors each year for the last five years. In 1981, 1.5 million visitors were recorded, the highest total ever.

The JSC Visitor Center is open every day except Christmas from 9 a.m. to 4 p.m. Briefings are available in the Mission Control Center for tourists, as well as self-guided tours of various training facilities around the center.

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# NASA News

National Aeronautics and  
Space Administration

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

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RELEASE NO. 82-016

For Release IMMEDIATE

Steve Nesbitt  
Charles Redmond

## PAYLOAD OPERATIONS CONTROL CENTER (POCC)

Again on STS-3 the Payload Operations Control Center (POCC) will be an essential part of the payload aspects of the mission.

The Payload Operations Control Center is a series of several rooms. They are across the hall from the Mission Operations Control Room on the second floor of the Mission Control Center (Building 30) at Johnson Space Center.

The function of the POCC is to provide a technical and administrative area where scientists and engineers from universities and other NASA centers can monitor and, depending on the astronaut crew activity plan, direct on-orbit experiments.

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March 21, 1982

The PCCC needs are equipped with keyboards, analyzers, mini-computers and other electronic gear associated with the operation and monitoring of shuttle experiment equipment. In addition to standard equipment in the PCCC, principal investigators for the separate experiments can provide unique equipment associated with their experiment.

The management of the PCCC is structured somewhat like the flight management team in the Mission Operations Control Room. There is the equivalent of a **Flight Director** for the PCCC, called the **Mission Manager**, and the position of **Payload Officer** in the Mission Operations Control Room is mirrored by the **PCCC Director**.

Each of the principal investigators represents an individual console position in the PCCC. PCCC positions which are not specifically mission related include the **Operations Support** position, the **Facility Operations** positions, **Onboard (orbiter) Operations**, and **Principal Investigator Operations**. These PCCC positions are somewhat analogous to the backroom support positions for the **Payload Officer** in the Mission Operations Control Room.

The **Payload Officer** represents the onboard payload activities and engineering requirements for the mission operations team and reports to the mission **Flight Director** in the Mission Operations Control Room.

The PCCC positions report to the **PCCC Director** who is in communication with the **Payload Officer**. The PCCC positions also have direct communication with appropriate mission operations positions for operational efficiency. For example, the **Onboard Operations (PCCC) Officer** talks directly through voice intercom circuits with the **Flight Activities (MOCR) Officer** because onboard activities usually will involve some crew scheduling. The **Facility Operations (PCCC) Officer** talks with the **Payload Data (MOCR) Officer** because the facility operations in the PCCC deal mainly with the receipt, analysis and storage of payload data. The **Mission Manager (PCCC)** communicates, when necessary, with the **Flight Director (MOCR)** through the flight management meetings.

As the PCCC matures in capabilities more and more of the real-time operation of onboard equipment will be routed directly to the PCCC console positions. A fully operational and interconnected PCCC is one of the elements of the first Space Shuttle flight, now set for STS-4, October 1981.

# NASA News

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

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John Lawrence

RELEASE NO. 82-017

For Release  
March 23, 1982

## COLUMBIA FERRY FLIGHT WILL REFUEL IN LOUISIANA

NASA has designated Barksdale Air Force Base, La., as the primary refueling/stopover site when the Space Shuttle Columbia is returned to the Kennedy Space Center, Fla., early next month. The Columbia will ride piggyback aboard a modified 747 Shuttle Carrier Aircraft.

NASA changed the stopover to Barksdale AFB after the prime landing site for the third Space Shuttle Mission was changed from Edwards AFB, Calif. to the U. S. Army's White Sands Missile Range, N.M.

The ferry flight is scheduled to begin April 7, but the flight could be delayed for a variety of reasons.

The move to White Sands's Northrup Strip was prompted by heavy rainfall last week on Rogers Dry Lake at Edwards AFB. It would be several weeks before Rogers Dry Lake is suitable to land the 100-ton spacecraft.

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# NASA News

National Aeronautics and  
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AC 713 483-5111

TERRY WHITE

For Release

RELEASE NO. 82-018

April 1, 1982

## SPACE CENTER PICKS MASON REGUARD FOR SECURITY CONTRACT

The NASA Lyndon B. Johnson Space Center, Houston, Texas, has selected Mason-REguard of Lexington, Kentucky for negotiations leading to award of a cost-plus-award-fee contract for security support services at the Center.

Included in security services are protective security, protective services communications, Space Shuttle security support, locksmith services, traffic and parking control and vehicle accident investigation, classified waste destruction and emergency security operations. Mason-REguard's proposed cost and fee for providing these services for the period April 1, 1982 through March 31, 1983 is approximately \$2,569,000.

NASA has the option to extend the contract at the end of the first year for two additional one year periods.

Other companies submitting proposals were:

- |   |                  |
|---|------------------|
| a. Apex International Management Services, Inc.<br>and Gray's Guard Service, Inc. (Joint Venture) | Jacksonville, FL |
| b. Burns International Security Services, Inc.  | Houston, TX      |
| c. Cabazon Indian Security-Wackenhut Services,<br>Inc. (Joint Venture)                            | Indio, CA        |
| d. Delta Security Service   | Warwick, RI      |
| e. Pinkerton's, Inc.  | New York, NY     |
| f. Washington Patrol Service, Inc.  | Escondido, CA    |
| g. Wells Fargo Guard Services, Inc.   | Houston, TX      |
| h. World Security Services Co.  | Portland, OR     |
| i. Yoh Security, Inc.   | Philadelphia, PA |

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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John E. Riley  
RELEASE NO. 82-019

For Release  
April 6, 1982

## NOTE TO EDITORS

The STS-3 crew's post-flight news conference will be at 10 a.m. CST Tuesday, April 13, in the Johnson Space Center's Teague Auditorium.

In addition to answering questions, Astronauts Jack Lousma and Gordon Fullerton will present photographic highlights of the 8-day mission.

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# NASA News

National Aeronautics and  
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For Release

Brian Welch

RELEASE NO. 82-020

April 6, 1982

## GROUND FREEZER FAILURE CAUSES LOSS OF STS-3 ELECTROPHORESIS TEST SAMPLES

A cryogenic freezer used on the ground for transport of cell samples processed in a test aboard the third Space Shuttle flight was found to have failed April 5, and resulted in a total loss of specimens and a great deal of data from the Electrophoresis Equipment Verification Test.

Technicians at the Johnson Space Center, Houston, Texas, are conducting a failure analysis of the cryogenic freezer--which was not a piece of flight hardware--to determine why it malfunctioned sometime during the weekend of April 3-4. When the freezer was opened on the morning of April 5 in Houston, the red blood cell and human embryonic kidney cell samples inside were thawed, and the interior of the freezer was at room temperature.

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The freezer failed sometime between storage days 6 and 8, although it was certified to have a minimum storage of at least 10 days. Similar freezers have lasted in ground tests for at least 12 days.

The transport freezer is a stainless steel double-walled cylinder lined with an insulation which collects and holds liquid nitrogen, the freezing agent. The eight batches of cell samples processed during the orbital testing were removed from Columbia within two hours of landing March 30 and transferred to the transport freezer for the trip back to Houston on a Shuttle Training Aircraft that afternoon.

"Of all the things which could have gone wrong," said Dr. Stuart Nachtwey, Chief of the Biomedical Applications Branch at Johnson, "the freezer is the last piece of equipment we would have expected to have trouble with."

"The test went very well in orbit," said Dr. Dennis Morrison, the Principal Investigator at Johnson, "but we just ran into problems on the ground. We have the cell samples and equipment to try again in the future if circumstances permit."

Although analysis of the kidney cells is now impossible, officials believe on-board photography will allow them to get some of the data they were expecting from the red blood cell processing experiment. The two batches of red blood cells, supplied by the Marshall Space Flight Center, Huntsville, Ala., were aboard to provide a control, or calibration, of how well the electrophoretic separation process works in the micro-gravity of space. Scientists are already quite familiar with the properties

of red blood cell separation, and on-board photography was able to document this process since the movement of the red blood cells was visible. "We hope to confirm some astronaut comments from space that may tell us how well the electrophoresis proceeded," said Dr. Robert Snyder, the Principal Investigator from Marshall for the FEVT. "The STS-3 astronauts reported a red blood cell separation which must be verified by photography."

The kidney cells, on the other hand, are not visible with either the human eye or photography, and they were present not for calibration of the experiment, but for the evaluation of the ability to separate cells that produce certain enzymes such as urokinase. Certain types of kidney cells, about five percent of those found in the human body, are capable of producing urokinase, which has potential medical applications as a dissolver of blood clots. Urokinase is difficult and expensive to obtain on Earth.

Electrophoresis is a process which uses an electric field to separate cells and other biological materials in fluids without damaging the cells themselves. These cells can then be used in the study of cellular biology, immunology and basic medical research. The process is limited on Earth, however, because heat produced by the electric field causes convection currents and a remixing of the cells and fluid, thereby defeating the separation process. In space, these convection currents do not occur, and electrophoresis has been seen as having a much greater potential there than on Earth.

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# NASA News

National Aeronautics and  
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For Release

Douglas K. Ward

RELEASE NO. 82-021

April 14, 1982

## DIRECTOR KRAFT TO LEAVE JSC

Dr. Christopher C. Kraft, Jr., Director of the Lyndon B. Johnson Space Center, announced today that he will leave the National Aeronautics and Space Administration at the end of this year.

He said he has no definite plans for the future.

Kraft noted that after the fifth flight of the Space Shuttle, scheduled in November, the Shuttle will have established its operational status. "This will be a transitional period for activities at the Johnson Space Center and a reasonable time to depart," he said.

Kraft called the outlook bright for NASA and for JSC and said he is confident the nation will continue to recognize the importance and the potential of space exploration and space applications. He said his career with NASA has been personally rewarding.

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"It has been a privilege to work with so many excellent and devoted people, both in government and in the aerospace industry," he said. "In my estimation, their work represents the greatest engineering achievement of the twentieth century."

He began his government career in 1945 with the NACA Langley Aeronautical Laboratory. In 1958 he was selected as one of the original members of the Space Task Group, the organization established to manage Project Mercury.

In the early phases of Project Mercury he was a principal contributor to the development of many of the basic mission and flight control techniques used in manned space flight. He served as flight director for all the Mercury missions and for many of the Gemini missions. During the later phase of Project Mercury he directed the design and implementation of the Mission Control Center in Houston from which all succeeding U.S. manned space programs have been conducted.

Kraft was honored by President Carter in 1980 as one of the nation's outstanding career federal employees and was awarded the Presidential Rank of Distinguished Executive. He has three times received NASA's highest award, the Distinguished Service Medal. In 1963 he received the Arthur S. Flemming Award as one of 10 outstanding young men in government career service and in 1962 he was selected as one of the 100 outstanding young leaders in the nation by the editors of Life Magazine.

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# NASA News

National Aeronautics and  
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For Release

Terry White

RELEASE NO. 82-022

April 19, 1982

## COLUMBIA NEEDS ONLY MINOR REWORK BEFORE FINAL ORBITAL TEST FLIGHT

Shuttle Orbiter Columbia, currently in turn-around refurbishing at the NASA Kennedy Space Center, Florida, will need only minimal modification and servicing for the fourth and final orbital flight test now scheduled for late June.

Columbia's third orbital flight in March was extended from seven to eight days when weather conditions at White Sands Missile Range, New Mexico were unfavorable for a safe landing. Flight four, planned for seven days duration, will complete the shakedown of the Shuttle orbiter and booster systems as the nation's space transportation system becomes operational with flight five.

STS-4 will be piloted by Thomas K. Mattingly, commander, and Henry W. Hartsfield, pilot.

During STS-3 launch into orbit, some 36 full heatshield tiles and portions of 14 others separated from Columbia's upper nose and from the body flap beneath the main engines. These tiles were in low-temperature areas, and their absence was in no way a hazard to safe entry.

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Approximately 800 tiles will be "densified" by application of a silica solution before the fourth launch. Most of the critical tiles on Columbia's underbody and lower wing surfaces were densified prior to the first flight. The remaining several thousand of the 31,000 total tiles will be densified between flights and during planned Columbia modifications. Densification improves the adhesion of the tiles to the Nomex felt strain isolation pad bonded to the spacecraft's aluminum skin.

Columbia's toilet needed a plumber early in the third flight and will be removed for trouble-shooting and cleaning. The toilet operated at reduced efficiency for the remainder of the flight.

One of Columbia's three auxiliary power units (APU) was powered down early in the flight when a water-spray system for cooling the APU gearbox apparently froze. The APU, supplying hydraulic pressure for main engine swiveling and rudder and elevon control surfaces motion, functioned normally during STS-3 entry and landing. Causes of the one-time freeze-up are being diagnosed.

Low temperatures in Columbia's payload bay, particularly after long periods in shadow or "cold soak", apparently caused power circuits to some of the six payload bay television cameras to trip out. Changes in the logic circuits will make them less sensitive to low temperature operation.

Also to be installed on Columbia will be the payload bay liner to reduce Orbiter contamination reaching payloads. The quilted plastic film liner has been planned for installation in Columbia prior to STS-4 for several years.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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John Lawrence

For Release

RELEASE NO. 82-023

April 19, 1982

## THREE SHUTTLE CREWS ANNOUNCED

Astronaut crews for the seventh and eighth flights of the Space Shuttle, and the first Spacelab mission have been announced by the National Aeronautics and Space Administration.

Crewmembers for STS-7 are Robert L. Crippen (Captain, U.S. Navy), commander, and Frederick H. Hauck (Captain, U.S. Navy), pilot. Mission specialist astronauts will be John M. Fabian (Lieutenant Colonel, U.S. Air Force) and Dr. Sally K. Ride.

STS-7 is to be a six-day flight by the orbiter, Challenger, with a planned launch in April 1983. Its payloads are to be a German shuttle pallet satellite (SPAS), the second Office of Space and Terrestrial Applications instrument package (OSTA-2), a Canadian communications satellite (TELESAT-F) and an Indonesian communications satellite (PALAPA-B1)

STS-8 is scheduled for launch in July 1983. Announced as mission commander is Richard H. Truly (Captain, U.S. Navy), and as pilot, Daniel C. Brandenstein (Commander, U.S. Navy). Mission

-more

specialists will be Dale A. Gardner (Lieutenant Commander, U.S. Navy), and Guion S. Bluford, Jr., (Lieutenant Colonel, U.S. Air Force).

This three-day mission is to be the third flight of the orbiter, Challenger. Payloads will be an Indian communications satellite (INSAT 1-B) and NASA's tracking and data relay satellite (TDRS-B), the second and final element in a system to give nearly full-time voice and data communication between orbiting Space Shuttles and mission control.

The first flight of Spacelab--the joint project between NASA and the European Space Agency--is presently scheduled for launch in September 1983. Mission commander for the seven-day flight is to be John W. Young and pilot will be Brewster H. Shaw, Jr. (Major, U.S. Air Force). Mission specialists will be Dr. Owen K. Garriott and Dr. Robert A. Parker. Additionally, two payload specialists--one each from NASA and the European Space Agency--will be named at a later date.

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# NASA News

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For Release

John Lawrence

IMMEDIATE

RELEASE NO. 82-024

NOTE TO EDITORS:

News Conferences with NASA astronaut crews for the seventh and eighth flights of the Space Shuttle will be conducted in Bldg. 2 at Johnson Space Center, Houston, Texas on Thursday, April 29.

The STS-7 crew, consisting of Robert L. Crippen, commander; Frederick H. Hauck, pilot; and mission specialists John M. Fabian and Dr. Sally K. Ride, will be available from 9-10 a.m. From 10-11 a.m., the STS-8 crew---Richard H. Truly, commander; Daniel C. Brandenstein, pilot; and mission specialists Dale A. Gardner and Guion S. Bluford, Jr.---will be available for questions.

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April 23, 1982

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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John Lawrence

For Release

RELEASE NO. 82-025

IMMEDIATE

## EXPECTANT ASTRONAUTS

NASA Astronauts Robert L. Gibson (Lt. Cdr., USN) and Dr. Rhea Seddon, who were married in May 1981, have announced they are expecting the birth of their first child late this summer.

April 28, 1982

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# NASA News

National Aeronautics and  
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For Release

Steve Nesbitt

May 5, 1982

RELEASE NO. 82-026

## FEDERAL WOMEN'S WEEK OBSERVED AT JSC

Issues of interest to both men and women will be explored next week during the NASA Johnson Space Center's observance of Federal Women's Week.

In a series of public presentations May 12 through 14 at the Gilruth Recreation Center at JSC, Houston area civic leaders, educators, professionals, and business people will discuss topics ranging from women's legal rights to family and career interrelations.

The Federal Women's Program Committee at the NASA facility is sponsoring the fifth annual observance of the week.

Public sessions begin at 9 a.m. May 12 with "Directing Your Personal Potential," a presentation by Elsa Rosborough, a professor in the College of Social Science at the University of Houston. Other Wednesday events include a film, "Tale of O," and a discussion titled "Single Parents for the First Time," by leaders of the group Texas Fathers for Equal Rights.

Thursday topics include "Citizens Against Crime," "Women's Legal Rights in Texas." and the film "Work Place Hustle,"

"Office Stereotypes," "Family and Career," and "Tax Shelters, IRAs," are topics of discussion Friday. Daily events begin at 9 a.m.

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# NASA News

National Aeronautics and  
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RELEASE NO. 82-027

For Release

TERRY WHITE

IMMEDIATE

## NASA NEGOTIATES WITH TWO FIRMS FOR SPACE CENTER COMPUTER SYSTEMS

The NASA Johnson Space Center, Houston, Texas has selected Amperif Corporation of Chatsworth, California and Sperry-UNIVAC of Houston for negotiations leading to award of contracts for lease and maintenance of peripheral subsystems in the Center's Central Computing Facility.

The firm-fixed price contracts would cover random access mass storage (RAMS) disc subsystems furnished by Amperif, and front-end communications processor (FECP) and magnetic tape subsystems furnished by Sperry-UNIVAC.

Estimated values of the contracts are \$2.6 million for RAMS leasing and maintenance, and \$3.75 million for the FECP and magnetic tape subsystems. The contracts will provide for additional equipment and maintenance for an optional period of approximately five years.

Other bidders were Centennial Computer Products of Rockville, Maryland; Chi Corporation, Beechwood, Ohio; and Interscience Systems, Inc., Canoga Park, California

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

John Lawrence

RELEASE NO. 82-028

May 11, 1982

## NOTE TO EDITORS

News conferences with the STS-4 astronauts, lead flight director and science/payload officials will be held Thursday and Friday, May 20-21, in the Bldg. 2 News Center at NASA's Johnson Space Center, Houston.

The STS-4 flight crew will not be available to the media again until after the mission.

Sessions scheduled are:

### THURSDAY, MAY 20

10 a.m. (all times CDT) -- STS-4 flight plan briefing by

Charles R. Lewis, lead flight director.

1 p.m. -- STS-4 Science Briefing

2 p.m. -- Getaway Special and Student Experiments

3 p.m. -- Public Affairs guidelines for STS-4 DOD payload

### FRIDAY, MAY 21

9 a.m. -- News conference with STS-4 astronauts T. K. Mattingly and

Henry W. Hartsfield.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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Terry White

For Release

RELEASE NO. 82-029

May 11, 1982

## NASA AWARDS OSTA-3 PAYLOAD CONTRACT TO ROCKWELL SPACE OPERATIONS

The NASA Johnson Space Center, Houston, has awarded a letter contract to Rockwell International's Space Operations/Integration & Satellite Systems Division of Downey, California covering integration of the OSTA-3 (Office of Space and Terrestrial Applications) payload into Shuttle Orbiter Columbia.

Initial value of the letter contract is \$370,000 and the total amount of the definitive cost-plus fixed fee contract is \$3,772,000.

Rockwell will assemble a Spacelab pallet or an orbital flight test pallet and integrate onto the pallet OSTA-3 scientific instruments and support subsystems. The contract will also cover payload staging, preflight checkout and postflight operations at NASA Kennedy Space Center.

The OSTA-3 payload currently is scheduled to fly aboard Columbia on STS-16.

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# NASA News

National Aeronautics and  
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For Release

John Lawrence

RELEASE NO. 82-030

May 25, 1982

## LONG-DURATION SIMULATION

A 57-hour simulation of the fourth flight of the Space Shuttle Columbia will be conducted at NASA's Johnson Space Center, Houston, beginning 8 a.m. Tuesday, June 1.

The simulation will pick up the mission at one day, 18 hours and 30 minutes after launch. Since the activity involves some classified aspects pertaining to the Department of Defense, the simulation will be closed to the press, and public tours of the Mission Control Center will be suspended.

Astronauts and ground-based flight controllers gain realistic experience during these flight simulations. The time segment involved covers a major portion of critical tests scheduled for STS-4.

Crew members are Thomas K. Mattingly (Capt., U.S. Navy), commander, and Henry W. Hartsfield, pilot. For the exercise, they will be in a simulator which provides sensory and data feedback identical to that which they will experience in Columbia

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during flight. The simulator will be integrated with the Mission Operations Control Room at Houston, where three crews of flight controllers will alternate shifts.

Simulation hardware has the added feature of being able to introduce imaginary problems to the participants. Problems are scripted in advance but are unknown to the participants. Consequently, flight and ground crews receive realistic training in dealing with unexpected events like those which might occur during an actual mission.

In addition to this long-duration exercise, many shorter simulations are conducted which focus on other special segments of the STS-4 flight plan. Among these are various launch and landing situations, as well as critical on-orbit operations.

STS-4 is scheduled as a seven-day mission with launch planned no earlier than June 27. It is the final Space Shuttle orbital test flight.

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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Brian Welch

For Release

RELEASE NO. 82-031

May 25, 1982

## EIGHTH ANNUAL AEROSPACE WORKSHOP SET FOR JUNE 14

The eighth annual aerospace workshop for educators will be held at the Johnson Space Center June 14 to 27 as part of NASA's continuing effort to broaden the horizons of science teachers.

Teachers from the elementary, secondary and college levels will take part in everything from a hot air balloon launch to observing NASA aircraft operations, and they may even get to see a Space Shuttle launch.

Sponsored jointly by JSC, the University of Houston and the Civil Air Patrol, the workshop is designed to make science and aerospace technology come alive for teachers, with the hope they can in turn make it come alive for their students.

"You can't find this type of first hand experience in textbooks," said Jim Poindexter, JSC Education Specialist. "We fill in the blanks."

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Topics during the workshop will include aerospace education, hot air balloons, NASA aircraft operations, Civil Air Patrol activities, tracking and communications, physiological training for spaceflight, the STS-4 launch, crew systems, Earth resources, astronaut selection, lunar science, the Landsat program, the Space Operations Center and other future NASA programs.

The educators will also be briefed on the NASA-National Science Teachers Association Space Shuttle Student Involvement Project, which so far has seen one student experiment fly in space, and is expected to see two more go up on STS-4 in June.

Three semester hours undergraduate or graduate credit will be offered by the University of Houston to persons attending the workshop.

Directing the workshop will be Dr. Jacob Blankenship of the University of Houston. For more information, contact the Office of Curriculum and Instruction at UH, Houston, Texas, 77004.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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Terry White

For Release

RELEASE NO. 82-032

May 26, 1982

## NASA CONTRACTS ILC INDUSTRIES TO SUPPLY SHUTTLE CREW EQUIPMENT

The NASA Johnson Space Center, Houston has signed a cost-plus-fixed-fee contract with ILC Industries, Inc., Space Systems Division, Houston, covering Space Shuttle crew equipment.

Under the estimated \$4,638,000 contract, ILC will provide Shuttle crew equipment and training devices for spacewalks and in-cabin activities, and Orbiter onboard stowage provisions for the equipment.

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# NASA News

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For Release

Steve Nesbitt

Release No. 82-033

IMMEDIATE

## SATELLITE SERVICES WORKSHOP SET AT JSC

As the age of routine space operations begins, new opportunities for the use of near-Earth space are being explored.

In keeping with preparations for these new opportunities, the NASA Johnson Space Center June 22-24 will host a Satellite Services Workshop.

The workshop will allow potential users of the Space Transportation System to exchange ideas and acquire information relating to on-orbit servicing of satellites.

The six sessions to be conducted during the workshop highlight servicing equipment, servicing operations, berthing/docking, servicing economics, satellite design and fluid transfer.

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The workshop is open to all interested persons and there are no preregistration requirements or fees. Registration begins at 8 a.m. in the lobby of the Building 2 Teague Visitor Center at the Johnson Space Center.

Those wishing to attend a social function the evening of June 22 should contact Joy Robertson at 483-2263. A \$5 fee will be charged to cover the cost of beverages and hors d'oeuvres at that activity.

Other questions about the workshop may be directed to Gordon Rysavy at 483-3085.

# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
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For Release

John Lawrence

RELEASE NO. 82-034

June 17, 1982

## FLIGHT CONTROL OF STS-4

Maturation of flight control aspects of NASA's Space Transportation System will be evident during the fourth flight of the Space Shuttle Columbia as changes occur in console positions within the Mission Control Center at Houston.

The leading edge of the trend to streamline mission control by reducing the number of operators in the Mission Operations Control Room (MOCR) is apparent in the consolidation of two major positions. Responsibilities formerly held by the EGIL (Electrical Power, Instrumentation and Lighting Systems Engineer) will be assumed by the EECOM (Environmental, Consumables and Mechanical Systems Engineer). Those duties include the orbiter's fuel cells, AC and DC power distribution systems, instrumentation systems, instrumentation systems, transducers, caution and warning panels and vehicle lighting systems.

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As the Space Transportation System continues to develop, the flight control team hopes to effect further reductions in the number of on-console operators.

Also during STS-4, a new console position will appear. The RMU, for Remote Manipulator System, Mechanical Systems and Upper Stages Systems Officer, will make his first appearance during this flight. The RMS officer which appeared for the first time during STS-2, will be phased out following STS-4. No RMS activities will be conducted on STS-5 or STS-6, and those functions on STS-7 will be the responsibility of the newly-created RMU officer.

Additionally, the RMU will have responsibility for mechanical systems such as the auxiliary power units, hydraulic systems, payload bay doors and other mechanical systems such as doors and vents. He will also be responsible for upper stage systems to be used on STS-5 and STS-6 to boost payloads into higher orbits.

Lead flight director for STS-4 will be Charles R. Lewis. He was flight director with the orbit team on STS-1 and lead flight director for STS-2. He will direct shifts of the orbit team on the upcoming mission. Flight directors are responsible for implementation of the mission objectives and contingency alterations in the flight plan or mission rules. Duties as lead flight director give Lewis additional responsibilities for pre-launch mission planning and coordination, as well as further leadership and management duties during the on-orbit phase of the mission.

Tommy W. Holloway will serve as flight director during the launch phase, as he did during STS-3. Subsequent shifts of the ascent team of flight controllers will be under the direction of Dr. John T. Cox. Flight director for the entry team, including the landing phase, will be Harold M. Draughon, also a veteran of STS-3.

Three others will be in training for flight director duties during STS-4, understudying the prime flight directors on each shift. They are Jay H. Greene, ascent team; Brock R. Stone, orbit team; and Gary E. Coen, entry team.

As in each of the previous three missions, three teams of flight controllers will alternate shifts in the MOCR at Johnson Space Center. The facility provides centralized control of the Space Shuttle from launch to landing. The MOCR is backed up by additional teams operating from nearby staff support rooms. In these, government and contractor employees monitor data for analysis and interpretation.

The four rows of consoles in the MOCR are grouped with management personnel in the back row; the flight director, planners and communicators in the third row; vehicle systems officers in the second row; and trajectory-oriented functions in the front row.

Specific console positions in the MOCR, their call signs and their functions are:

- o Flight Dynamics Officer (FIDO)--Responsible for monitoring powered phases of the mission, orbital events and trajectories from the standpoint of mission success. Monitors vehicle energy levels during reentry.

- o Guidance Officer (Guidance)--Monitors onboard navigation and onboard guidance software.

- o Data Processing System Engineer (DPS)--Responsible for data processing hardware and executes software for the vehicle's five onboard general purpose computer systems.

- o Aeronautical Systems Officer (Aero)--Monitors and assesses performance of vehicle aerodynamic surfaces during flight phases in the sensible atmosphere.

- o Flight Surgeon (Surgeon)--Responsible for advising the flight director of the crew's health status.

- o Booster System Engineer (Booster)--Responsible for monitoring the vehicle's main engine and solid rocket booster propulsion systems during the ascent phase of the flight, and monitoring the purging systems before reentry.

- o Propulsion Systems Engineer (Prop)--Responsible for the status of the reaction control and orbital maneuvering systems engines during all phases of flight.

- o Guidance, Navigation and Control Systems Engineer (GNC)--Responsible for all inertial navigational systems hardware, radio navigation systems hardware, radio navigation aids and digital autopilot systems.

- o Ground Control (GC)--Responsible for configuring for acquisition or loss of signal and status of ground support equipment.

- o Environmental, Consumables and Mechanical Systems Engineer (EECOM)--Monitors cryogenics levels for fuel cells and propulsion systems, cooling systems, AC and DC power distribution systems, instrumentation systems, transducers and vehicle lighting systems.

- o Integrated Communications Systems Engineer (INCO)--Responsible for onboard communications system configuration.

- o Operations Integration Officer (OIO)--Responsible for detailed implementation of mission control procedures and for coordination and controlling the group displays and clocks in the control center.

- o Flight Activities Officer (FAO)--Responsible for flight crew checklists, procedures and timelines.

- o Spacecraft Communicator (Capcom)--Responsible for voice contact with the flight crew concerning details of the mission flight plan, flight procedures, mission rules and spacecraft systems.

- o Payloads Officer (Payloads)--Coordinates mission experiments.

- o Remote Manipulator System, Mechanical and Upper Stage Systems Officer (RMU)--For STS-4, will monitor mechanical systems such as auxiliary power units, hydraulic systems, payload bay

doors, vents and vent doors. On subsequent flights, duties will include remote manipulator system and upper stage booster systems.

- o Remote Manipulator System (RMS)--Monitors performance, status and condition of the payload deployment and retrieval system (electromechanical arm).

Personnel assignments to STS-4 flight control teams follow:

more

<u>FUNCTION</u>	<u>ASCENT TEAM</u>	<u>ORBIT TEAM</u>	<u>ENTRY TEAM</u>
Flight Director	Tommy W. Holloway John T. Cox (Orbit Phase)	Charles R. Lewis	Harold M. Draughon
Capsule Communicator	David Griggs Robert L. Stewart*	George Nelson Michael L. Coats*	Brewster Shaw Roy D. Bridges, Jr.*
Operations Integration Officer	Kim W. Anson	William A. Middleton	Wayne B. Boatman
Flight Dynamics Officer	Ronald C. Epps	Gregg Staresinich	Willis M. Bolt
Guidance Officer	Will S. Presley	Thornton E. Dyson	J. T. Chapman
Booster Systems Engineer	T. Cleon Lacefield	-----	Baldwin G. Fitzgerald
Propulsion Systems Engineer	N. Wayne Hale, Jr.	William H. Gerstenmaier	Ronald D. Dittimore
Guidance, Navigation and Control	Harold J. Clancy	Charles K. Alford	D. W. Whittle
Integrated Communications Systems Engineer	Alan L. Briscoe	Robert Castle	Ed Fendell
Aerodynamics Officer	James Adamson	-----	James Adamson
Data Processing Systems Engineer	Ernest E. Smith	Darrell E. Stamper	A. F. Algate
Environmental, Consumables and Mechanical Systems Engineer	Jimmy S. McLendon	J. Milton Heflin	Paul M. Joyce
RMS, Mechanical Systems and Upper Stages	Jack Knight	John D. Blalock	Albert Ong
Remote Manipulator System	Edward J. Ripma	Arthur L. Schmitt	-----
Flight Activities Officer	Carolyn L. Conley	Elvin B. Pippert, Jr.	Marianne J. Dyson
Payloads	Janis Plesums	Jerry G. Renick	John E. Hoover
Surgeon	Michael W. Bungo	E. L. Schulman	J. S. Logan

\*Backup

# NASA News

National Aeronautics and  
Space Administration

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

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Brian Welch  
RELEASE NO. 82-035

For Release

IMMEDIATE

## CHALLENGER FERRY FLIGHT WILL REFUEL IN HOUSTON

America's newest Space Shuttle, the Challenger, will stop over at Ellington Air Force Base, Houston, Texas July 4 enroute to the Kennedy Space Center in Florida.

The arrival of Challenger atop its 747 carrier aircraft is scheduled to come on the same afternoon as welcoming ceremonies for STS-4 crewmen Thomas K. Mattingly and Henry W. Hartsfield following completion of their seven-day orbital mission in the Space Shuttle Columbia.

The last visit of an Orbiter to Ellington came in March 1978 with the three-day stop of Orbiter Vehicle 101, the Enterprise, after its flights in the Approach and Landing Tests. Some 210,000 people attended that open house.

Barring schedule changes due to weather or mission contingencies, Challenger is scheduled to depart Edwards Air Force Base, California at approximately 12:45 p.m. CDT and arrive at Ellington at approximately 4:45 p.m. CDT July 4.

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The STS-4 crew is scheduled to leave Edwards around 3 p.m. CDT and arrive at Ellington at approximately 6 p.m. CDT. Welcoming ceremonies will begin with the crew arrival. The general public will be permitted access to the ceremonies only through Ellington's main gate beginning at 2 p.m. Other gates will be closed.

The 747 Shuttle Carrier Aircraft/Challenger combination will leave Ellington for the Kennedy Space Center sometime the morning of July 5.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Steve Nesbitt  
Release No.82-036

For Release  
July 9, 1982

## VOLCANIC ASH FROM EL CHICHON ERUPTION ANALYZED AT JSC

Tiny particles of volcanic ash in the atmosphere which have contributed to some spectacular sunrises and sunsets over much of the United States in recent months have been collected by NASA aircraft and currently are being studied in laboratories at the Lyndon B. Johnson Space Center in Houston.

The ash particles, about the same size as human red blood cells, resulted from the powerful volcanic eruptions of the El Chichon volcano in Mexico on March 28 and April 4 of this year.

Scientists are interested in studying material such as volcanic ash which reaches altitudes sufficiently high to circulate worldwide and possibly affect the climate.

Samples from the El Chichon volcano were collected by NASA-Department of Energy high altitude aircraft using collectors specially designed to gather cosmic dust from the upper atmosphere. NASA scientists have conducted preliminary examinations on the material and the particles are now housed in the Planetary Materials Curatorial Facility at JSC.

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The samples were examined with both optical and electron microscopes. The ash particles are uniformly sized about two to four ten-thousandths of an inch, or about one-tenth the diameter of a human hair. They are mostly fragments of volcanic glass and crystals and should be of interest both to geologists studying the volcano and scientists studying the possible effects of volcanic clouds on the Earth's weather.

The El Chichon eruption provided NASA with the first opportunity to use its cosmic dust collecting equipment for other purposes. Since May, 1981, JSC scientists have conducted a program in which jet aircraft flying through the stratosphere deploy specially designed collectors to sample extraterrestrial dust as it settles from space toward the Earth's surface.

The collection and study of cosmic dust is an important part of scientific efforts to understand the materials and events which formed the planets and other solid objects in our solar system.

Because the Earth's troposphere, the weather zone below about 7 miles (12 kilometers), typically contains so many particles of man made origin, sampling cosmic dust is performed in the relatively clean stratosphere at altitudes of about 11 to 12 miles (18-20 kilometers).

Most volcanic eruptions eject material only into the troposphere, but especially powerful ones like the El Chichon

--more--

event can send plumes of ash well into the stratosphere. NASA flight crews estimated that the material from El Chichon reached as far up as 13 miles (21 kilometers) and extended as far north as the U.S.-Canadian border.

Studies on the dust are being conducted by JSC scientists Dr. Uel Clanton and Jim Gooding, both associate curators of cosmic dust, and Dr. David McKay, geologist.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

John Lawrence

IMMEDIATE

RELEASE NO. 82-037

## NOTE TO EDITORS

News conferences with the crews of STS-4 and STS-5 will be held at Johnson Space Center, Houston, on Monday and Tuesday, July 19 and 20, respectively.

Astronauts Thomas K. Mattingly and Henry W. Hartsfield of the June 27-July 4 STS-4 mission, will hold their post-flight news conference at 10 a. m. CDT Monday, July 19, 1982.

STS-5 crewmembers will be available at 9 a. m. CDT Tuesday, July 20. They are Vance D. Brand, commander; Robert F. Overmyer, pilot; and Dr. Joseph P. Allen and Dr. William B. Lenoir, mission specialists.

Both news conferences will be in JSC's Teague auditorium

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

Terry White

RELEASE NO. 82-038

IMMEDIATE

## NASA PICKS MEDIA SERVICES FOR INFORMATION CONTRACT

The NASA Johnson Space Center, Houston, Texas has selected Media Services Corporation of Houston for negotiations leading to a cost-plus-fixed-fee contract covering public information and media support services at the Center.

The estimated \$1 million contract will cover still photo library operations, motion picture distribution library operations, public affairs mission planning and operations, projection services, news and information media services, staging and presentations, and audiovisual loan pool operations. Running from August 1, 1982 to July 31, 1983, the contract will have two additional one-year extension options.

Other firms submitting proposals were Fred Badiyan Productions, Inc., Minneapolis, Minnesota; D-K Associates, Inc., Rockville, Maryland; Omniplan Corporation, Houston, Texas; H. G. Peters & Company, Primos, Pennsylvania; and Taft Broadcasting Corporation, Houston, Texas

July 23, 1982

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Terry White  
RELEASE NO. 82-039

For Release  
July 26, 1982

## COHEN TO HEAD SPACE CENTER ENGINEERING AND DEVELOPMENT

Aaron Cohen has been named Director of Engineering and Development at the NASA Johnson Space Center, Houston, effective July 26. He replaces Robert O. Piland, recently appointed manager of the newly-formed Space Station Office at the Center.

Cohen served as manager of the Space Shuttle Orbiter Project Office since June 1972. His deputy in the new assignment is Sid Jones, former manager of the Engineering Office, Orbiter Project. Arnold D. Aldrich, former deputy manager of the Space Shuttle Program Office, assumes Cohen's prior assignment as manager of the Orbiter Project Office.

Prior to joining NASA in 1962, Cohen was a design engineer with RCA and a research engineer with General Dynamics/Astronautics. He managed the command and service module spacecraft office at JSC during the Apollo lunar landing program era.

Cohen holds a masters degree in applied mathematics and an honorary doctorate from Stevens Institute of Technology and a bachelors degree in mechanical engineering from Texas A&M University.

Cohen and his family live in Seabrook, Texas.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

Terry White

RELEASE NO. 82-040

IMMEDIATE

## PAN AM SPACE CENTER OPERATIONS CONTRACT RENEWED

The NASA Johnson Space Center, Houston, has awarded a follow-on contract to Pan American World Airways, Inc., Aerospace Services Division, of Cocoa Beach, Florida, a follow-on contract covering plant maintenance and operations at the Center.

The \$12 million cost-plus-award-fee contract runs from August 1, 1982 to July 31, 1983 and covers operation of all JSC utility systems, and maintenance of utilities, buildings, roads, ditches and special equipment. Pan Am employs approximately 290 people under the contract. The follow-on award is the second year of a five-year program.

July 30, 1982

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
AC 713 483-5111

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Harold S. Stall  
RELEASE NO. 82-41

For Release  
3 P.M. CDT  
August 3, 1982

## KRAFT WILL LEAVE POST

Dr. Christopher C. Kraft, Jr., announced today that he has resigned as Director of the NASA Johnson Space Center effective August 7.

Kraft retired from federal service in March of 1980, but stayed on at the request of the NASA Administrator to see the Space Shuttle program through its critical orbital flight test phase. That program was successfully completed last July 4 when astronauts Thomas K. Mattingly and Henry Hartsfield landed the Orbiter Columbia at Edwards Air Force Base (California) at the conclusion of its fourth flight in space.

Kraft had worked on the manned space program from its inception and for NASA's predecessor, the National Advisory Committee for Aeronautics (NACA), since 1945. He was named Director of the Houston Center in 1972.

Kraft will be succeeded by Gerald D. Griffin, formerly Deputy Director of the Kennedy Space Center.

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NOTE TO EDITORS: Dr. Kraft will meet with the press at 9 a.m., Wednesday, August 4, in the JSC news center.



# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Steve Nesbitt

For Release

RELEASE NO. 82-042

IMMEDIATE

## JSC EARNS EEO AWARD

The National Aeronautics and Space Administration's Equal Opportunity Council has selected the Lyndon B. Johnson Space Center to receive the agency's fiscal year 1981 Equal Opportunity Trophy.

The award is presented annually to the NASA installation which "has implemented the most effective management approaches and has achieved the most positive affirmative action results" in the employment of minorities, women and handicapped persons.

A formal presentation will be held in September at the Houston space center. Individuals who made significant contributions to the center's equal opportunity efforts also will be recognized at the ceremony.

The fiscal year 1981 award covers the period from October 1, 1980, to September 30, 1981.

The traveling trophy last year went to the Goddard Space Flight Center in Greenbelt, Md., the first time it was presented.

August 13, 1982

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# NASA News

National Aeronautics and  
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Lyndon B. Johnson Space Center  
Houston, Texas 77058  
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For Release

August 23, 1982

Steve Nesbitt

Release No. 82-043

## LUNAR ROVER TECHNOLOGY AIDS HANDICAPPED DRIVERS

Operating a joystick controller that looks like part of a video game, a handicapped person can drive a van or other vehicle with a system derived from NASA "moon buggy" technology.

This week in Houston, engineers from Nelson and Johnson Engineering, a Colorado firm under contract with NASA, will be showing off the latest development phase of the system which allows even severely handicapped individuals to smoothly operate a vehicle.

The system is based on the hand controller used on NASA's lunar rover "moon buggy" which NASA astronauts drove around the surface of the moon. When fully developed, it will be a compact electronics unit which fits into virtually any vehicle without extensive modification and allows non-handicapped drivers to return to standard controls at the flip of a switch.

The van being demonstrated this week in conjunction with a convention of engineers who design equipment for the handicapped

is a partially developed prototype, but one in which no permanent modification is required. The electronic controls can be removed by a regular mechanic in a few hours and installed in another vehicle.

All the equipment fits neatly under the dash or alongside the driver's seat with no changes needed under the hood. A switch on the dash determines whether the vehicle is controlled by the electronics or the usual steering wheel and pedals.

A joystick controller mounted on the end of an arm rest by the driver's side sends electronic signals to servo motors on the steering column, brake pedal or accelerator whenever the controller is moved.

A forward push on the stick depresses the accelerator while pulling back applies the brakes. Left or right movements steer the vehicle which can be done simultaneously with braking or accelerating.

The controller can be used by an individual as severely handicapped as classification C-5, that is, paralyzed from the chest down. For those unable to grasp the joystick, a special glove is used.

One unique aspect of the control system is that, with simple adjustments, driver and vehicle can be "prescription fitted" to each other. The force required to move the hand control can be set to suit the individual and the handling characteristics of the vehicle can be matched to the control system.

The project to adapt lunar rover technology to more Earthly vehicles began with an agreement between NASA and the Veterans Administration. The VA was interested in improving equipment used to help handicapped veterans lead more normal lives and NASA was seeking to expand the uses of its technology.

In 1981, NASA signed a contract with Nelson and Johnson Engineering of Boulder, Colorado, for phase one of a three-part development effort. The first part, to prove the usefulness of the concept, was funded by the VA while NASA managed the contract.

The van in Houston this week is further along than earlier models and future stages will have reduced-size electronics packages and other refinements.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

David Garrett  
Headquarters, Washington, D.C.  
(Phone: 202/755-3090)

IMMEDIATE

Dave Alter  
Johnson Space Center, Houston, Texas  
(Phone: 713/483-5111)

RELEASE NO: 82-044

## MINIATURE TV CAMERA TO BE USED ON FIFTH SHUTTLE MISSION

A miniature television camera, its postage-stamp-size lens peeking over Astronaut Joseph Allen's helmet, will give viewers on earth a first-hand look at what astronauts see during a space walk on the next Space Shuttle flight in November.

The hand-size, 1.1 kilogram (2-1/2-pound) camera will be used during a 3-1/2-hour extravehicular activity (EVA) on a five-day flight of Columbia after two communications satellites have been deployed. Scheduled launch date of the STS-5 (fifth Space Shuttle mission and first operational flight) is Nov. 11.

During the space walk, mission specialists Allen and William B. Lenoir will test onboard tools in the orbiter's payload bay while the camera relays the action to earth or into Columbia's cabin.

September 14, 1982

-more-

The mini-camera uses a solid state image sensor instead of a vacuum tube and is housed above the helmet's extravehicular visor assembly. Solid state is less complex, and lighter, requiring less power. The camera weighs half that of a similar vidicon tube unit, and transmits live, black and white television scenes.

The lens has a 19.7 mm focal length with a 32-degree horizontal field-of-view and normal depth of field from 80 centimeters (32 inches) to infinity. A close up lens adapter is snapped into position by the astronaut for focus from 30 to 80 cm (12 to 32 in).

To leave the orbiter Columbia, Allen and Lenoir will don pressure suits -- extravehicular mobility units and backpacks with portable life support systems (PLSS). They will enter the payload bay through an airlock, hook up safety tethers and Allen will turn on the TV camera and lights also mounted in his helmet.

Clinging to handrails, Allen and Lenoir will inspect the payload bay, move to a stationary tool box and remove a mini-work station which will tether them at various worksites.

In view of the helmet and payload bay cameras, they will test stationary and portable foot restraints, torque and box wrenches, scissors, cutter and ratchet tools to be used on future flights. They also will test two winches mounted on the forward and aft bulkheads. The winches manually close the payload bay doors in the event of a door-drive failure.

The helmet camera allows crewmen inside the spacecraft to view the hardware being inspected and permits Commander Vance D. Brand and Pilot Robert F. Overmyer to evaluate the activity.

The miniature TV cameras were developed for the Air Force and produced by Fairchild Weston Systems, Inc., Syosset, N.Y. and are modified for Space Shuttle flight.

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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  
LFD-10/NASA Headquarters  
Washington, D.C. 20546

Telephone No: 202/755-8366

Photo Numbers:  
B & W - 82-H-622

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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John Lawrence

For Release

Release No. 82-046

IMMEDIATE

## NASA NAMES STS-10 ASTRONAUT CREW

Four of the five crew members who will man the Space Shuttle on its first dedicated Department of Defense mission have been selected.

They are NASA astronauts Capt. Thomas K. Mattingly, USN, commander; Maj. Loren J. Shriver, USAF, pilot; and as mission specialists, Maj. Ellison S. Onizuka, USAF; and Maj. James F. Buchli, USMC.

The fifth crew member, an Air Force manned spaceflight engineer, will be named at a later date.

The mission is presently scheduled for launch in the last quarter of 1983 from Kennedy Space Center, Fla. It will be the fourth flight of the orbiter, Challenger, and the tenth Space Shuttle mission overall.

-more-

October 20, 1982



Mattingly was commander of the fourth Space Shuttle mission, which also carried a Department of Defense payload. He is also a veteran of the Apollo 16 mission and has been an astronaut since April 1966.

This mission will be the first space flight for Shriver, Onizuka and Buchli. Each was a member of the eighth group of astronauts selected by NASA in August 1979. Each also is a rated jet pilot and has graduated from test pilot school.

Shriver has flown 30 types of single and multi-engine aircraft. His education and training include the USAF Academy, USAF Pilot Training School, Squadron Officer's School and USAF Test Pilot School, and he was a distinguished graduate of each. He participated in development test and evaluation of the F-15 fighter aircraft.

Onizuka participated in flight test programs and systems safety engineering for nine separate types of aircraft. He subsequently became an instructor at the USAF Test Pilot's School and managed flight test modifications to the school's general support fleet of six types of aircraft. He graduated from the University of Colorado.

A graduate of the U.S. Naval Academy, Buchli he is a veteran of the Vietnam War, and his decorations include the Air Medal and Purple Heart. He holds bachelor and master of science degrees in aeronautical engineering.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

T. White  
RELEASE NO. 82-047

October 8, 1982

## GRUMMAN TO BUILD SHUTTLE REMOTE ARM ASTRONAUT FIXTURE

The NASA Johnson Space Center, Houston, Texas has signed a \$1.8 million contract with Grumman Aerospace Corporation, Bethpage, NY for a foot restraint platform that would allow space-walking Shuttle astronauts to be moved about by the Orbiter's remote manipulator arm.

Under the noncompetitive firm-fixed-price contract, Grumman will design and build two flight and two training restraints fitted with standard remote arm grapple fixtures similar to those fitted to Shuttle payloads planned for deployment or retrieval by the 50-foot long robot arm.

Called the interim manipulator foot restraint (IMFR), the device will permit a spacesuited astronaut to be moved anywhere within the arm's reach without an umbilical tether.

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# NASA News

National Aeronautics and  
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Terry White

For Release

RELEASE NO. 82-048

October 8, 1982

## NASA EXTENDS GENERAL ELECTRIC CHECKOUT EQUIPMENT CONTRACT

The NASA Johnson Space Center, Houston, Texas has extended its contract with General Electric Company's Spacecraft Operations Division of Houston covering operation and maintenance of Shuttle Orbiter acceptance checkout equipment at the Center and at Palmdale, California. The \$2.9 million noncompetitive letter contract will have an estimated value of \$15 million in its final form.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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Terry White

For Release

RELEASE NO. 82-049

October 15, 1982

## JSC CONTRACTS SPERRY UNIVAC FOR DATA PROCESSING SERVICES

The NASA Johnson Space Center, Houston, Texas has signed a firm-fixed-price contract with Sperry Corporation, Univac Division of Houston covering lease and maintenance of Univac automatic data processing equipment at the Center. The contract covers the period from October 1, 1982 to September 30, 1983 with four optional one-year extension periods.

The first year's value is \$3.48 million, and if extended the four one-year periods, will total an estimated \$20 million.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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James D. Poindexter  
AC 713 483-4433

For Release  
November 4, 1982

RELEASE NO: 82-050

## NASA TO PRESENT THE AEROSPACE EDUCATION SERVICES PROJECT

\_\_\_\_\_ will host the National Aeronautics and Space Administration's lecture-demonstration program, which will be conducted by Mr. Thomas E. Vallilee. Mr. Vallilee is an Adjunct Assistant Professor, College of Education, Oklahoma State University, representing the Johnson Space Center, Houston, Texas. He is serving as an Aerospace Education Specialist for NASA.

Mr. Vallilee received his Bachelor of Science Degree in Mathematics from the University of Nebraska, Lincoln, Nebraska. He taught mathematics and aerospace in the Lincoln Public Schools for seven years at the secondary level.

In addition, Mr. Vallilee has an extensive background in aviation, has been a pilot for 15 years, has his Instrument Pilot, Commercial Pilot, and Flight Instructors' ratings. He taught Pilot Ground School at Southeast Community College in Lincoln, and was a Flight Instructor at Lincoln Aire for two years.

# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

John Lawrence

Release No. 82-051

November 10, 1982

## FLIGHT CONTROL OF STS-5

Flight control of the fifth flight of the Space Shuttle Columbia will occur from a control room in NASA's Johnson Space Center, Houston which has not been in operational use for nearly 10 years.

The third-floor Mission Operations Control Room in Houston's Mission Control Center was last used on the Apollo 17 lunar landing mission in December 1972. Since that date, flight control for the Skylab program, the Apollo-Soyuz Test Project and the Space Shuttle Operational Flight Test program has been performed in the second-floor MOCR. The second floor facility is presently undergoing extensive modification scheduled to be completed in time for STS-17 in August 1984.

In its revised operational mode, the facility will be designated a Flight Control Room and designed to operate with a significantly reduced level of manpower. With both second and third-floor facilities operative, the center will be able to perform mission flight control at the same time as training simulations in preparation for upcoming flights--a capability which does not now exist.

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Otherwise, flight control of STS-5 should look and sound exactly like the first four missions. Flight control positions and call signs are unchanged, and only subtle visual differences distinguish the two facilities. The four rows of control consoles are grouped with management personnel in the back row; the flight director, planners and communicators in the third row; vehicle systems officers in the second row; and trajectory-oriented functions in the front row.

Lead flight director for STS-5 is Tommy W. Holloway, who has served as flight director on each of the three previous Space Shuttle operations. As lead flight director he has additional responsibilities for pre-launch mission planning and coordination, as well as other leadership and management duties during the on-orbit phase of the mission.

As with each of the previous four Space Shuttle missions, three teams of flight controllers will alternate shifts in the MOCR. The facility provides centralized control of the space ship from launch to landing and is backed up by additional teams operating from nearby staff support rooms. In these, government and contractor employees monitor data for analysis and interpretation.

Specific console positions in the MOCR, their call signs and their functions are:

Flight Director (Flight) -- Has overall responsibility for the conduct of the mission.

Trajectory Officer (Trajectory) -- Monitors on-course, on-time, position and velocity information.

Flight Dynamics Officer (FIDO) -- Responsible for monitoring powered phase of the mission, orbital events and trajectories from the standpoint of mission success. Monitors vehicle energy levels during reentry.

Guidance Officer (Guidance) -- Monitors onboard navigation and onboard guidance software.

Data Processing System Engineer (DPS) -- Responsible for data processing hardware and executes software for the vehicle's five onboard general purpose computer systems.

Aeronautical systems Officer (Aero) -- Monitors and assesses performance of vehicle aerodynamic surfaces during flight phases in the sensible atmosphere.

Flight Surgeon (Surgeon) -- Responsible for advising the flight director of the crew's health status.

Booster System Engineer (Booster) -- Responsible for monitoring the vehicle's main engine and solid rocket booster propulsion systems during the ascent phase of the flight, and monitoring the purging systems before reentry.

Propulsion Systems Engineer (Prop) -- Responsible for the status of the reaction control and orbital maneuvering systems engines during all phases of flight.

Guidance, Navigation and Control Systems Engineer (GNC)--Responsible for all inertial navigational systems hardware, radio navigation systems hardware, radio navigation aids and digital autopilot systems.

Environmental, Consumables and Mechanical Systems Engineer (EECOM)-- Monitors cryogenics levels for fuel cells and propulsion systems, cooling systems, AC and DC power distribution systems, instrumentation systems, transducers and vehicle lighting systems.

Integrated Communications Systems Engineer (INCO)--Responsible for onboard communications system configuration.



Operations Integration Officer (OIO)--Responsible for detailed implementation of mission control procedures and for coordination and controlling the group displays and clocks in the control center.

Flight Activities Officer (FAO)--Responsible for flight crew checklists, procedures and timelines.

Spacecraft Communicator (Capcom)--Responsible for voice contact with the flight crew concerning details of the mission flight plan, flight procedures, mission rules and spacecraft systems.

Payloads Officer (Payloads)--Coordinates mission experiments.

Remote Manipulator System, Mechanical and Upper Stage Systems Officer (RMU)--Monitors mechanical systems such as auxiliary power units, hydraulic systems, payload bay doors, vents and vent doors and upper stage systems. On subsequent flights, duties will include remote manipulator system which is not being carried on STS-5.

Personnel assignments to STS-5 flight control team follows:

<u>FUNCTION</u>	<u>ASCENT/ENTRY TEAM</u>	<u>ORBIT TEAM</u>	<u>PLANNING TEAM</u>
Flight Director	Tommy W. Holloway	Jay T. Cox	Gary E. Coen
Capsule Communicator	Roy Bridges Robert L. Stewart*	Michael L. Coats Bryan D. O'Connor*	Richard O. Covey Jon A. McBride*
Operations Integration Officer	Kim W. Anson	Wayne B. Boatman	Carolyn H. Blacknall
Flight Dynamics Officer	Roland C. Epps (ascent) Willis M. Bolt (entry)	James E. I'Anson	Bradford H. Sweet
Trajectory Officer	Willis M. Bolt (ascent) Roland C. Epps (entry) Brian L. Jones (post-ascent shifts)	Edward P. Gonzales	Brian L. Jones
Guidance Officer	Will S. Presley	Thornton E. Dyson	J. T. Chapman
Booster Systems Engineer	Jerry L. Borrer	Jenny Howard	Baldwin G. Fitzgerald
Propulsion Systems Engineer	Ronald D. Dittimore	William H. Gerstenmaier	N. Wayne Hale
Guidance, Navigation and Control	David W. Whittle	Charles K. Alford	Frank E. Trlica
Integrated Communication Systems Officer	Jay Conner	Granvil A. Pennington	Robert Castle
Aerodynamnics Officer	James Adamson	-----	-----
Data Processing Systems Engineer	Ernest E. Smith	Andy F. Algate	Darrell E. Stamper
Environmental, Consumables and Mechanical Systems Engineer	J. Milton Heflin	Charles T. Holliman	R. John Rector
RMS, Mechanical Systems and Upper Stages	Albert Ong	Rodney L. Lofton	William D. Reeves
Flight Activities Officer	William R. Holmberg	Tucker Pierce	Marianne J. Dyson
Loads	Robert M. Kelso	Michael W. Hawes	Tandy N. Bruce
Surgeon	James M. Vanderploeg	Ellen L. Shulman	Michael W. Bungo

<u>FUNCTION</u>	<u>ASCENT/ENTRY TEAM</u>	<u>ORBIT TEAM</u>	<u>PLANNING TEAM</u>
Flight Director	Tommy W. Holloway	Jay T. Cox	Gary E. Coen
Capsule Communicator	Roy Bridges Robert L. Stewart*	Michael L. Coats Bryan D. O'Connor*	Richard O. Covey Jon A. McBride*
Operations Integration Officer	Kim W. Anson	Wayne B. Boatman	Carolyn H. Blacknall
Flight Dynamics Officer	Roland C. Epps (ascent) Willis M. Bolt (entry)	James E. I'Anson	Bradford H. Sweet
Trajectory Officer	Willis M. Bolt (ascent) Roland C. Epps (entry) Brian L. Jones (post-ascent shifts)	Edward P. Gonzales	Brian L. Jones
Guidance Officer	Will S. Presley	Thornton E. Dyson	J. T. Chapman
Booster Systems Engineer	Jerry L. Borrer	Jenny Howard	Baldwin G. Fitzgerald
Propulsion Systems Engineer	Ronald D. Dittmore	William H. Gerstenmaier	N. Wayne Hale
Guidance, Navigation and Control	David W. Whittle	Charles K. Alford	Frank E. Trlica
Integrated Communication Systems Officer	Jay Conner	Granvil A. Pennington	Robert Castle
Aerodynamnics Officer	James Adamson	-----	-----
Data Processing Systems Engineer	Ernest E. Smith	Andy F. Algate	Darrell E. Stamper
Environmental, Consumables and Mechanical Systems Engineer	J. Milton Heflin	Charles T. Holliman	R. John Rector
RMS, Mechanical Systems and Upper Stages	Albert Ong	Rodney L. Lofton	William D. Reeves
Flight Activities Officer	William R. Holmberg	Tucker Pierce	Marianne J. Dyson
Payloads	Robert M. Kelso	Michael W. Hawes	Tandy N. Bruce
Flight Surgeon	James M. Vanderploeg	Ellen L. Shulman	Michael W. Bungo

\*Backup

end

# NASA News

National Aeronautics and  
Space Administration

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

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Steve Nesbitt

For Release

Release No. 82-052

Immediate

## Greenville Native Coordinates Shuttle Cargo Activity

Michael Hawes, a Greenville native and 1974 graduate of Greenville High School, will be playing an important role in the fifth flight of the Space Shuttle this week.

Hawes, whose parents are Mr. and Mrs. W.R. Hawes of Greenville, will be the lead payloads officer sitting in Mission Control in Houston, coordinating cargo activities during the five-day mission which begins Thursday.

The Space Shuttle Columbia is scheduled to rocket to a 160-nautical mile orbit early Thursday from Kennedy Space Center, Florida. The spaceship will be commanded by Vance Brand, pilot will be Marine Corps Col. Robert Overmeyer, and mission specialists will be Drs. Joe Allen and Bill Lenoir.

Hawes' parents toured the Johnson Space Center in Houston last may and met the four astronauts whose primary mission

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will be the deployment of two communications satellites. The operation of monitoring the health of those satellites and deploying them successfully from the shuttle is Hawes responsibility.

A 1978 graduate of the University of Notre Dame, Hawes came to NASA upon graduation and has served as a flight controller for the Skylab reentry and shuttle flights two and three.

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# NASA News

National Aeronautics and  
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Terry white  
RELEASE NO. 82-053

For Release  
November 9, 1982

## NASA PICKS PAN-AM FOR HOUSTON CENTER ENGINEERING SERVICES

The NASA Johnson Space Center, Houston, Texas has selected Pan Am World Services, Inc. of Cocoa Beach, Florida for negotiations leading to award of a cost-plus-award-fee contract for Center engineering support services.

Under the proposed contract, Pan Am will provide facilities engineering and design for construction, repair and modification work, prepare technical documentation and specifications, and provide inspection and quality control for these activities.

Pan Am's proposed cost and fee for the initial contract period of December 1, 1982 through November 30, 1983 are approximately \$1.5 million. Four additional one-year extensions are optional under the contract.

Other proposers were Houston firms Allstates Design & Development Co., Inc., Aztec Engineering Company, Brown & Root Development, Inc., Lockwood, Andrews and Newman, Inc., Stubbs Overbeck & Associates, Inc.; and Parker Engineering Company of Round Rock, Texas.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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Dave Alter

For Release

Release No. 82-054

November 19, 1982

## STS-5 SPACE SUIT INQUIRY

A seven-man NASA inquiry team began sifting test data at the Johnson Space Center to learn why two space suits failed during the attempted space walk by astronauts aboard the STS-5 orbiter, Columbia.

The team is headed by Richard A. Colonna, manager of the Center's Program Operations Office.

Technicians yesterday tested the external linkage of the space suit's portable life support system worn by Astronaut William B. Lenoir. The linkage, which operates the regulator, functioned properly, Colonna said.

The regulator and assembly have now been removed and are being flown to Hamilton Standard in Hartford, Conn., for failure analysis testing.

-more-

Columbia's second space suit and portable life support system, the one worn by Astronaut Joseph P. Allen in which the fan failed, arrived early this morning at Johnson Space Center accompanied by its power supply. Both will be tested.

About 20 technicians are scheduled to work ten-hour shifts including weekends to determine the cause of the two suit failures.

Colonna's six-man inquiry team includes William J. Huffstetler, manager of the Spacelab Mission Management Office; Henry O. Pohl, chief of the Propulsion and Power Division; Clay E. McCullough, manager of the Payload Deployment and Retrieval Systems Office; Robert H. Steele, Chief of the Payload Reliability Engineering Branch; John E. Wegener, chief of the Training Integration Branch and C. Douglas Lamb, Deputy of the Mechanical Division of the Structures and Propulsion Laboratory at Marshall Space Flight Center.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

Steve Nesbitt

IMMEDIATE

RELEASE NO. 82-055

## NOTE TO EDITORS

The post flight news conference for the crew of STS-5 will be held Wednesday, Dec. 1, at the NASA Johnson Space Center in Houston. The conference will begin at 10 a.m. CST in Room 135 of Building 2.

Astronauts Vance D. Brand, mission commander, Col. Robert F. Overmeyer, pilot, and mission specialists Drs. Joseph P. Allen and William B. Lenoir will present highlights of their recent space flight.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

John E. McLeaish  
Release No. 82-056

December 2, 1982

## NOTE TO EDITORS

Current home telephone numbers for the NASA Johnson Space Center public information staff are as follows:

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John E. Riley Deputy, Public Information Branch	(713) 471-0624
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David B. Alter Public Information Specialist for Engineering and Development	(713) 480-9515
L. John Lawrence Public Information Specialist for Flight Operations and Data Systems Analysis	(713) 538-1669
Steve A. Nesbitt Public Information Specialist for Space and Life Sciences, Center Operations, Safety, Reliability and Quality Assurance, and Personnel Office.	(713) 554-2435
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# NASA News

National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**  
Houston, Texas 77058  
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For Release

December 2, 1982

Dave Alter  
Release No. 82-057

## TEAM REPORTS ON SPACE SUIT FAILURE

A NASA team investigating the failure of two space suits during an attempted space walk on the fifth Space Shuttle flight issued an interim report today blaming two missing locking devices and a faulty motor sensor .

The team is headed by Richard A. Colonna, manager of the Johnson Space Center's Program Operations Office.

The space suits and related life support equipment are furnished by Hamilton Standard, Hartford, Conn.

During the mission on board Columbia, an oxygen regulator in Astronaut William B. Lenoir's suit failed to provide required suit pressure.

The fan motor in Astronaut Joseph P. Allen's space suit and portable life support system refused to function.

Colonna said that two vital plastic parts about the size of a match stick had been left out of the regulator during assembly last August by the vendor.

Documentation indicated the parts had been installed. But technicians failed to learn of the missing parts during repeated tests, Colonna said.

The inquiry team blamed the fan failure on a faulty magnetic sensor. Cause has yet to be determined.

The team will continue its investigation and is expected to recommend more frequent and intense testing and quality control during space suit production and testing at Hamilton Standard, Houston and Kennedy Space Center, Colonna said.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

Dr. John Lawrence

RELEASE NO. 82-058

IMMEDIATE

## NOTE TO EDITORS

A news conference with the STS-6 crew will be conducted at 1 p.m. Tuesday, Jan. 4, 1983, at NASA's Johnson Space Center, Houston. The first flight of the orbiter Challenger will be crewed by Paul J. Weitz, commander; Col. Karol J. Bobko (USAF), pilot; and Donald H. Peterson and Dr. Story Musgrave, mission specialists.

A series of background briefings concerning STS-6 will be held at JSC starting at 1 p.m. Monday, Jan. 3, and continuing through the morning of Jan. 4. Subjects to be covered will include changes in the Space Shuttle orbiter, Tracking and Data Relay System satellite and Interim Upper Stage, experiments, extra-vehicular activity, flight plan, and NASA policy on astronaut private medical communications.

STS-6 is scheduled for launch no earlier than Jan. 24, and this will be the final pre-mission opportunity for news media to meet with the crew.

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# NASA News

National Aeronautics and  
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**Lyndon B. Johnson Space Center**  
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For Release

Terry White  
RELEASE NO. 82-059

December 16, 1982

## NOTE TO EDITORS

STS-6 background briefings at Johnson Space Center have been rescheduled for Tuesday and Wednesday, January 4 and 5, instead of Monday and Tuesday as announced in the December 13 note to editors. The revision allows more time for the post-New Years travel crunch to abate.

A news conference with the STS-6 crew will be conducted at 1:00 p.m., CST, Tuesday, Jan. 4, 1983, at NASA's Johnson Space Center, Houston. The first flight of the orbiter Challenger will be crewed by Paul J. Weitz, commander; Karol J. Bobko, pilot; and Donald H. Peterson and Dr. Story Musgrave, mission specialists. This will be the final pre-mission opportunity for news media to meet the crew.

A series of STS-6 background briefings will be conducted at JSC beginning at 8:00 a.m., Tuesday, Jan. 4, (prior to the crew news conference) and will continue through the morning of Jan. 5.

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A schedule of briefings follows:

Tuesday, Jan, 4

8:00 a.m., CST	STS-6 Flight Director's Briefing
9:00 a.m.	Spacesuit and Extravehicular Activity (EVA)
10:00 a.m.	NASA Crew Flight Health Policy
11:00 a.m.	Get Away Specials (3)
1:00 p.m.	STS-6 Crew News Conference
	Remainder of afternoon reserved for crew interviews

Wednesday, Jan. 5

8:30 a.m., CST	STS Changes - New Orbiter, Lightweight Tank and Lightweight Booster, SSME
9:30 a.m.	Inertial Upper Stage
10:00 a.m.	Experiments - MLR, NOSL and CFES
11:00 a.m.	Tracking and Data Relay Satellite System (TDRSS)

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# NASA News

National Aeronautics and  
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For Release

David Garrett  
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IMMEDIATE

John Lawrence  
Johnson Space Center, Houston, Texas  
(Phone: 713/483-5111)

RELEASE NO: 82-190

## FIFTH CREWMEMBER NAMED FOR STS-7 AND STS-8

Dr. Norman E. Thagard and Dr. William E. Thornton have been added to the crews of STS-7 and STS-8, respectively.

Thagard and Thornton, both physicians, have been added to assist in accomplishment of additional mission objectives. Neither has flown in space before.

Thagard will join STS-7 Commander Robert L. Crippen, Pilot Frederick H. Hauck, and Mission Specialists John M. Fabian and Dr. Sally K. Ride. The six-day mission is scheduled for launch in April 1983.

Thornton will join STS-8 Commander Richard H. Truly, Pilot Daniel C. Brandenstein, and Mission Specialists Dale A. Gardner and Guion S. Bluford Jr. for the four-day mission to be launched in late June 1983.

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-2-

Both Thagard and Thornton, mission specialists, will conduct medical tests to collect additional data on several physiological changes that are associated with the space adaptation syndrome. These tests will focus on the neurological system and are a continuation of the new approach to making inflight measurements which began on STS-4.

These efforts are directed toward initiation of an inflight search for countermeasures and to provide a more complete understanding of the space adaptation syndrome.

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(Index: 5, 26, 37)

December 21, 1982