

NEWS RELEASE LOG

NUMBER	TITLE	RELEASE DATE
83-001	Bob Piland Retires, Ends 35 Years Federal Service	1-21-83
83-002	Spacesuit failure	1/28/83
83-003	STS-11 & STS-12 Crews Named	2/4/83
83-004	Crewmembers named for STS-13, Spacelab 2 & 3	2/18/83
83-005	NASA Negotiates with Rothe for Shop Services Contract	2/22/83
83-006	LUANR PLANETARY CONFERENCE TO BE HELD AT JSC	2-25-83
83-007	NASA CONFERENCE TO HIGHLIGHT RETURN TO THE MOON	3-10-83
83-008	Pieces of Mars may have been found on Earth	3-16-83
83-009	FLIGHT CONTROL OF STS-6	3-21-83
83-010	NOTE TO EDITORS: Crew Health Policy Released	3-23-83
83-011	JOHNSON SPACE CENTER ANNOUNCES INTERNAL REORGANIZATION	3-30-83
83-012	IUS INVESTIGATION BOARD MEMBERS NAMED	4-7-83
83-013	JSC Negotiates Aircraft Lease Purchase contract	4-11-83
83-014	NOTE TO EDITORS: STS-6 POST-FLIGHT CREW CONF.	4-14-83
83-015 83-015	Federal Women's Program Astronaut Recruitment	
83-016	STS-7 press conference Note to Editors	5/10/83
83-017	Flight Control for STS-7	5-7-83
83-018	Deputy Director Named	5/17/83
83-019	Ham Radio to Fly on STS-9	5/31
83-020 *#)@)	2nd Relay satellite deleted rom STS-8	5/27/83
83-021	FIRST SHUTTLE TECHNICAL CONFERENCE SET FOR JUNE	6/6/83

NEWS RELEASE LOG

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83-022	Philidelphia Hospital to Develop Space Protein Exp	6/6/83
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83-025	Note to Editors STS-7 Post Flight Press	6/24/83
83-026	Payload Specialist Named	6/29/83
83-027	Ada	7/6/83
83-028	STS-8 Premission Press Conference NOTE TO EDITORS	7/6/83
83-029	GANEF, The Robot, Sends Choochoo to the Roundhouse	7/12/83
83-030	BALLOON MEET TO CELEBRATE SPECIAL YEAR IN AIR AND SPACE	7/20/83
83-031	NASA NEGOTIATES WITH LOCKHEED FOR WHITE SANDS SUPPORT CONTRACT	7/25/83
83-032	Hurricane Damage Expected to Top \$250,000 at JSC	8/19/83
83-033	Flight Control of STS-8	8/25/83
83-034	-Note to Editors (STS-8 postmission pc)	9/6/83
83-035	NASA Negotiates w/Pioneer for Space Center Logistics	9/9/83
⁰³⁶ 83-036	Shuttle crew announcemnts	9/21/83
83-037	Note to editors	9/22/83
83-038	NASA-Johnson Awards Safety, Reliability Contract to Boeing Services Intl	9/27/83
83-039	LOUSMA RETIREMENT	9/29/83
83- 040 40	NASA to Present the Aerospace Ed Svc Project	10/1/83
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83-043	STS Operations Consolidated	10-25-83
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83-045	FLIGHT CONTROL OF STS-9	11-17-83
83-046	STS Flight Assignments	11-17-83
83-047	Extension of STS-9	12/3/83
83-048	NOTE TO EDITORS (STS-9 POST FLIGHT)	12/9/83
83-049	JSC BRIEFS EQUIPMENT PROCESSING BIDDERS	12/13/83
83-050	JSC AWARDS AIRCRAFT SERVICES CONTRACT	12/22/83
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	Joseph Kerwin - Personnel Assignment	
	Dir, Space + Life Sciences Directorate	

NASA News

National Aeronautics and
Space Administration

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

Dave Alter
RELEASE NO. 83-001

For Release
January 21, 1983

BOB PILAND RETIRES, ENDS 35 YEARS FEDERAL SERVICE

Robert O. Piland, manager of JSC's Space Station Office and a 35-year veteran of U.S. Government service, is retiring Jan. 28. He has been in aeronautical and space research and development since 1947.

Clarke Covington, in charge of the Space Station Engineering and Operations group, has been named acting manager.

Piland's entire career has been with the federal government, holding positions with the National Advisory Committee for Aeronautics (NACA), NASA, and a one year assignment as technical assistant to Dr. James R. Killian, President Dwight D. Eisenhower's science advisor.

Piland began his career as an aeronautical research scientist at the NACA Langley Research Center, Hampton, Va., in 1947. He was named assistant chief of the Flight Systems Division, Space Task Group, in 1959, and from 1960 through 1965 was deputy manager of the Apollo spacecraft program.

From 1965 through 1967 he managed the Experiments Program Office and was deputy director of the Science and applications Directorate. In 1970 he organized the JSC Earth Resources Laboratory at the Mississippi Test Facility and served as its Director until 1974.

He served as technical assistant to the Center Director, Director of Space and Life Sciences, and was Director of Engineering and Development before his current assignment as manager of the Space Station Office.

Piland is married to the former Myra Stanton. They have three children, James, Thomas and Elizabeth.

Special honors and awards include:

1982 - U.S. Government, Senior Executive Service

Meritorius Rank

1982 - NASA Outstanding Leadership Medal

1973 - NASA Outstanding Leadership Medal

1969 - NASA Exceptional Service Medal

1969 - JSC Apollo Achievement Award

1966 - JSC Superior Achievement Award

1964 - American Academy of Achievement

Golden Plate Award

1962 - Inst. of Aero. Sciences

Lawrence Sperry Award

NASA News

National Aeronautics and
Space Administration

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

For Release

February 1, 1983

Dave Alter
Release No. 83-002

INQUIRY TEAM REPORTS ON SPACE SUIT FAILURES

A NASA team investigating failures in two space suits three months ago has concluded that "A combination of test and assembly procedures as implemented, workmanship, and fabrication technique caused the regulator anomaly."

During day five of the fifth Space Shuttle flight aboard Columbia, Mission Specialists William B. Lenoir and Joseph P. Allen experienced separate and unrelated failures in their space suits (Extravehicular Mobility Units). Both occurred during preparation for a 3 1/2-hour space walk.

"In the case of the motor assembly," the report said, "the failure to recognize and correct the cause of a previous anomaly allowed the condition to manifest itself in Allen's EMU motor malfunction."

The failures and recommendations are detailed in a report prepared by an eight-man anomaly review team headed by Richard A. Colonna, manager of the Johnson Space Center's Program Operations Office.

First failure was detected as Allen was donning his suit. The fan motor would start, run slowly, surge, struggle to continue operating and shut down by itself.

Troubleshooting isolated the problem to the fan motor and eventually to one of two sensors in the motor electronics. The sensor, manufactured by F.W. Bell, Inc., Orlando, Fla., for Hamilton Standard, Windsor Locks, Conn., had failed because of moisture, which caused an electrolytic plating action, to degrade the sensor's function.

The sensors perform the same function as brushes in a conventional motor. They had been exposed to moist oxygen (from crewmen breathing and perspiration) flowing through the suit ventilation circuit.

Second failure was an oxygen regulator that didn't furnish the required pressure in Lenoir's suit because two plastic locking devices, each the size of a grain of rice, had been left out during assembly last August by Hamilton Standard's vendor, Carleton Controls Corp. of East Aurora, N.Y.

With the locking devices gone, a threaded ring which holds a spring in place had backed off its original factory adjustment.

Findings by the STS-5 Anomaly Review Team followed an exhaustive assessment of the design and hardware histories, operations and investigative testing of the ailing space suit hardware.

Reads the report: "Improvements could be made to make a system better, and a number of changes to incorporate improvements were begun prior to the STS-5 anomalies. However,

even with no improvements, if the regulator were fabricated properly, and with proper contamination control and sealing of the motor Hall-effect sensors, the PLSS would function properly."

The regulator that failed controls pressure in two modes. One is for use during internal operations such as prebreathing in the airlock and the other for space walk (extravehicular activity) activities. In the first mode, the pressure is controlled at 1/2 pound per square inch and in the other it is controlled at 4.3 pounds per square inch.

Although documents indicated the regulator assembly was completed, two locking inserts were missing from one pressure spring adjustment ring, allowing pressure to drop back half a pound to 3.8 pounds per square inch.

The motor that failed in Allen's suit drives a fan, water separator and water pump.

The fan distributes metabolic oxygen and ventilates the suit. The separator removes respiration and perspiration moisture. The pump drives cooling water through the liquid cooling garment, removing heat from the astronaut's body.

The review team report lists ways to improve and simplify test and inspection procedures at Carleton. It calls for vibration testing of the regulator after final assembly and adjustment.

Regulators and motors will now undergo more extensive tests onboard the Orbiter just before being stored and the space suits will be fully tested the day before a scheduled spacewalk.

Although not available in time for STS-6, sensors with better moisture-resistant coating are planned for future motors and tests are being developed to detect defective motor sensors.

NOTE TO EDITORS: Copies of the STS-5 Anomaly Review Team report are on file in newsrooms at the Johnson Space Center, NASA Headquarters, Dryden Flight Research Facility, Kennedy Space Center and Marshall Space Flight Center.

For Release

Jonn Lawrence
RELEASE NO. 83-003

February 4, 1983

STS-11 AND STS-12 CREWS NAMED

Astronaut crews for the 11th and 12th Space Shuttle flights were announced today by the National Aeronautics and Space Administration.

Both flights will be commanded by veterans of earlier Space Shuttle missions--STS-11 by Vance D. Brand, who commanded STS-5 in November 1982 and STS-12 by Henry W. Hartsfield, pilot of STS-4 in June 1982.

Brand's crew includes Robert L. Gibson (Lt. Cdr., USN), pilot; and mission specialists Bruce McCandless II (Capt., USN), Robert L. Stewart (Lt. Col., USA) and Dr. Ronald E. McNair.

STS-11 is scheduled for launch in January 1984. It will be the fifth flight of the orbiter, Challenger, and will be a seven-day flight featuring the launch of an Indonesian communications satellite.

With Hartsfield on STS-12 will be Michael L. Coats (Cdr., USN), pilot; and mission specialists Dr. Judith A. Resnik, Dr. Steven A. Hawley and Richard M. Mullane (Lt. Col., USAF). A sixth crewmember may be named at a later date. It would be a payload specialist supplied by the commercial customer to monitor an onboard continuous flow electrophoresis system--a device which demonstrates the efficiency with which electrically-charged biological cells separate in zero gravity.

STS-12 is to be launched in March 1984. It will be the first flight of the orbiter, Discovery. Principal feature of the five-day mission will be deployment of the third Tracking and Data Relay Satellite.

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NOTE: Biographies on the ten newly-assigned crew members are attached.

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Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Vance DeVoe Brand (Mr.)
NASA Astronaut

BIRTHPLACE AND DATE: Born in Longmont, Colorado, May 9, 1931. His parents, Dr. and Mrs. Rudolph W. Brand, reside in Longmont.

PHYSICAL DESCRIPTION: Blond hair; gray eyes; height: 5 feet 11 inches; weight: 175 pounds.

EDUCATION: Graduated from Longmont High School, Longmont, Colorado; received a bachelor of science degree in Business from the University of Colorado in 1953, a bachelor of science degree in Aeronautical Engineering from the University of Colorado in 1960, and a master's degree in Business Administration from the University of California at Los Angeles in 1964.

MARITAL STATUS: Married to the former Beverly Ann Whitnel. Her father, Col. Otis W. Whitnel, resides in Houston, Texas.

CHILDREN: Susan N., April 30, 1954; Stephanie, August 6, 1955; Patrick R., March 22, 1958; Kevin S., December 1, 1963; and Erik R., May 11, 1981.

RECREATIONAL INTERESTS: Enjoys running to stay in condition, hiking, skiing, and canoeing.

ORGANIZATIONS: Fellow, American Astronautical Society; Associate Fellow, American Institute of Aeronautics and Astronautics, and the Society of Experimental Test Pilots; a Registered Professional Engineer in Texas; and member of Sigma Nu and Beta Gamma Sigma.

SPECIAL HONORS: JSC Certificate of Commendation (1970), the NASA Exceptional Service Medal (1974), the NASA Distinguished Service Medal (1975); Zeta Beta Tau's Richard Gottheil Medal (1975); the Wright Brothers International Manned Space Flight Award (1975); the Veterans of Foreign Wars National Space Award (1976); the Sigma Nu Distinguished Alumnus of the Year Award (1976); the Federation Aeronautique Internationale's Yuri Gagarin Gold Medal (1976); University of Colorado Alumnus of the Century (1 of 12) (1976); the AIAA Special Presidential Citation (1977); the American Astronautical Society's Flight Achievement Award for 1976 (1977); the AIAA Haley Astronautics Award for 1978 (1978); the JSC Special Achievement Award (1978).

EXPERIENCE: Military. Commissioned officer and naval aviator with the U. S. Marine Corps from 1953 to 1957. Military assignments included a 15-month tour in Japan as a jet fighter pilot. Following release from active duty, Brand continued in Marine Corps Reserve and Air National Guard jet fighter squadrons until 1964.

Civilian. Employed as a civilian by the Lockheed Aircraft Corporation from 1960 to 1966, working initially as a flight test engineer on the P3A Orion aircraft. In 1963, Brand graduated from the U.S. Naval Test Pilot School and was assigned to Palmdale, California, as an experimental test pilot on Canadian and German F-104 development programs. Immediately prior to selection to the astronaut program, Brand worked at the West German F-104G Flight Test Center at Istres, France, as an experimental test pilot and leader of a Lockheed flight test advisory group.

Flight Experience: 7,273 flying hours, which includes more than 6,100 hours in jets and 390 hours in helicopters, and checkout in more than 30 types of military aircraft.

NASA EXPERIENCE: One of the 19 pilot astronauts selected by NASA in April 1966, Brand first served as a crew member of the thermal vacuum chamber testing of the prototype command module and was a support crewman for the Apollo 8 and 13 missions. Later he was backup command module pilot for Apollo 15 and backup commander for the Skylab 3 and 4 missions.

Apollo-Soyuz: Vance Brand launched on his first space flight on July 15, 1975, as Apollo command module pilot on the Apollo-Soyuz Test Project (ASTP) mission. This joint space flight resulted in the first historic meeting in space between American astronauts and Soviet cosmonauts. Other crewmen taking part in this 9-day earth-orbital mission were Thomas P. Stafford (Apollo commander), Donald K. Slayton (Apollo docking module pilot), cosmonaut Alexey Leonov (Soyuz commander) and cosmonaut Valeriy Kubasov (Soyuz flight engineer). The Soyuz spacecraft was launched at the Baikonur Cosmodrome in Central Asia, and the Apollo was launched 7-1/2 hours later at Cape Canaveral. Two days later the Apollo spacecraft accomplished a successful rendezvous and docking with Soyuz.

The linkup tested a unique, new docking system and paved the way for future international cooperation in space. Twenty-eight experiments were performed during the flight. There were 44 hours of docked joint activities which included four crew transfers between the Apollo and the Soyuz. All major ASTP objectives were accomplished, and experience was gained in the conduct of complex, international manned missions. Six records for docked and group flight were set on the mission and are recognized by the Federation Aeronautique Internationale. Apollo splashed down in the Pacific Ocean near Hawaii, less than a mile from the targeted splash point, and was promptly recovered by the USS NEW ORLEANS. Brand logged 217 hours on his first space flight.

STS-5: Brand was commander of STS-5, the first fully operational flight of the Shuttle Transportation System, which launched from Kennedy Space Center, Florida, on November 11, 1982. He was accompanied by Col. Robert F. Overmyer, spacecraft pilot, and two mission specialists, Dr. Joseph P. Allen and Dr. William B. Lenoir. STS-5, the first mission with a four-man crew, clearly demonstrated the Space Shuttle as fully operational by the successful first deployment of two commercial communications satellites from the orbiter's payload bay. The mission marked the first use of the Payload Assist Module (PAM-D), and its new ejection system.

Civilian. Employed as a civilian by the Lockheed Aircraft Corporation from 1960 to 1966, working initially as a flight test engineer on the P3A Orion aircraft. In 1963, Brand graduated from the U.S. Naval Test Pilot School and was assigned to Palmdale, California, as an experimental test pilot on Canadian and German F-104 development programs. Immediately prior to selection to the astronaut program, Brand worked at the West German F-104G Flight Test Center at Istres, France, as an experimental test pilot and leader of a Lockheed flight test advisory group.

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Numerous flight tests were performed throughout the mission to document Shuttle performance during launch, boost, orbit, atmospheric entry and landing phases. STS-5 was the last flight to carry the Development Flight Instrumentation (DFI) package to support flight testing. A Getaway Special, three Student Involvement Projects and medical experiments were included on the mission. The STS-5 crew successfully concluded the 5-day orbital flight of Columbia with the first entry and landing through a cloud deck to a hard-surface runway and demonstrated maximum braking. Mission duration was 122 hours before landing on a concrete runway at Edwards Air Force Base, California, on November 16, 1982.

With the completion of this flight Vance Brand has now logged a total of 339 hours in space.

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DECEMBER 1982

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Robert L. Gibson (Lieutenant Commander, USN)
NASA Astronaut

BIRTHPLACE AND DATE: Born October 30, 1946, in Cooperstown, New York, but considers Lakewood, California, to be his hometown. His parents, Mr. and Mrs. Paul A. Gibson, reside in Westminster, California.

PHYSICAL DESCRIPTION: Blond hair; blue eyes; height: 5 feet 11 inches; weight: 165 pounds.

EDUCATION: Graduated from Huntington High school, Huntington, New York, in 1964; received a bachelor of science degree in Aeronautical Engineering from California Polytechnic State University in 1969.

MARITAL STATUS: Married Dr. M. Rhea Seddon of Murfreesboro, Tennessee. Her father, Mr. Edward C. Seddon, resides in Murfreesboro; her mother is deceased.

CHILDREN: Julie Christie Gibson, July 24, 1976; Paul Seddon Gibson, July 26, 1982.

RECREATIONAL INTERESTS: He enjoys sailboating, long distance running, surfing, and radio-controlled model aircraft flying during his free time.

SPECIAL HONORS: Awarded 3 Air Medals, the Navy Commendation Medal with Combat V, a Navy Unit Commendation, Meritorious Unit Commendation, Armed Forces Expeditionary Medal, Humanitarian Service Medal, an RVN Cross of Gallantry, RVN Meritorious Unit Commendation, and Vietnam Service Medal; and named Outstanding Student of the U.S. Navy Test Pilot School's Class of 1971.

EXPERIENCE: Gibson entered on active duty with the Navy in 1969. He received primary and basic flight training at Naval Air Stations Saufley Field and Pensacola, Florida, and Meridian, Mississippi, and completed advanced flight training at the Naval Air Station, Kingsville, Texas.

While assigned to Fighter Squadrons 111 and 1, during the period April 1972 to September 1975, he saw duty aboard

Robert L. Gibson (Lieutenant Commander, USN)

the USS CORAL SEA (CVA-43) and the USS ENTERPRISE (CVAN-65)--flying 56 combat missions in Southeast Asia. Gibson returned to the United States and an assignment as an F-14A instructor pilot with Fighter Squadron 124. He graduated from the U.S. Naval Test Pilot School, Patuxent River, Maryland, in June 1977, and later became involved in the test and evaluation of F-14A aircraft while assigned to the Naval Air Test Center's Strike Aircraft Test Directorate.

His flight experience includes over 2,500 hours in over 35 types of civil and military aircraft. He holds commercial pilot, multi-engine, and instrument ratings, and has held a private pilot rating since age 17. Gibson has also completed 300 carrier landings.

CURRENT ASSIGNMENT: Lt. Commander Gibson was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a pilot on future space shuttle flight crews.

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JULY 1982

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Bruce McCandless (Captain, USN)
NASA Astronaut

BIRTHPLACE AND DATE: Born June 8, 1937, in Boston, Massachusetts.

PHYSICAL DESCRIPTION: Brown hair; blue eyes; height: 5 feet 10 inches; weight: 155 pounds.

EDUCATION: Graduate of Woodrow Wilson Senior High School, Long Beach, California; received a bachelor of science degree in Naval Sciences from the United States Naval Academy in 1958 and a master of science degree in Electrical Engineering from Stanford University in 1965.

MARITAL STATUS: Married to the former Bernice Doyle of Rahway, New Jersey. Her mother, Mrs. Charles Doyle, resides in Milton, Florida.

CHILDREN: Bruce III, August 15, 1961; Tracy, July 13, 1963.

RECREATIONAL INTERESTS: His hobbies are electronics, photography, scuba diving, and flying; and he also enjoys swimming and playing volleyball.

ORGANIZATIONS: Member of the U.S. Naval Academy Alumni Association (Class of 1958), the U. S. Naval Institute, the Institute of Electrical and Electronic Engineers, and the National Audubon Society; and former president of the Houston Audubon Society.

SPECIAL HONORS: Awarded the Expert Rifle and Pistol Shot Medals and holder of the National Defense Service Medal and the American Expeditionary Service Medal; presented the NASA Exceptional Service Medal (1974) and the American Astronautical Society Victor A. Prather Award (1975).

EXPERIENCE: McCandless was graduated second in a class of 899 from Annapolis and subsequently received flight training from the Naval Aviation Training Command at bases in Pensacola, Florida, and Kingsville, Texas. He was designated a Naval aviator in March of 1960 and proceeded to Key West, Florida, for weapons system and carrier landing training in the F-6A Skyray. He was assigned to Fighter Squadron 102 (VF-102) from December 1960 to February 1964, flying the Skyray and the F-4B Phantom II, and he saw duty aboard the USS FORRESTAL (CVA-59) and the USS ENTERPRISE (CVA(N)-65), including the latter's participation in the Cuban blockade. For three months in early 1964, he was an instrument flight instructor in Attack Squadron 43 (VA-43) at the Naval Air Station, Apollo Soucek Field, Oceana, Virginia, and then reported to the Naval Reserve Officers' Training Corps Unit at Stanford University for graduate studies in electrical engineering.

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He has gained flying proficiency in the T-33B Shootingstar, T-38A Talon, F-4B Phantom II, F-6A Skyray, F-11 Tiger, TF-9J Cougar, T-1 Seastar, and T-34B Mentor aircraft, and the Bell 47G helicopter. He has logged more than 3,650 hours flying time--3,300 hours in jet aircraft.

NASA EXPERIENCE: Captain McCandless is one of the 19 astronauts selected by NASA in April 1966. He was a member of the astronaut support crew for the Apollo 14 mission and was backup pilot for the first manned Skylab mission (SL 1/SL 2). He was a co-investigator on the M-509 astronaut maneuvering unit experiment which was flown in the Skylab Program.

CURRENT ASSIGNMENT: Captain McCandless is a member of the On-Orbit Branch of the Astronaut Office. He is responsible for crew inputs to the development of hardware and procedures for the inertial upper stage (IUS) and the space telescope (ST) and is collaborating on the development of the manned maneuvering unit planned for use during shuttle EVAs.

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JULY 1980

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JULY 1980

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Ronald E. McNair (PhD)
NASA Astronaut

BIRTHPLACE AND DATE: Born October 21, 1950, in Lake City, South Carolina. His mother, Mrs. Pearl M. McNair, resides in Lake City, South Carolina; his father, Mr. Carl C. McNair, is a resident of New York City, New York.

PHYSICAL DESCRIPTION: Black hair; brown eyes; height: 5 feet 8 inches; weight: 160 pounds.

EDUCATION: Graduated from Carver High School, Lake City, South Carolina, in 1967; received a bachelor of science degree in Physics from North Carolina A&T State University in 1971 and a doctor of philosophy in Physics from Massachusetts Institute of Technology in 1976; presented an honorary doctorate of Laws from North Carolina A&T State University in 1978 and an honorary doctorate of Science from Morris College in 1980.

MARITAL STATUS: Married to the former Cheryl Moore of Jamaica, New York. Her parents, Mr. and Mrs. Harold Moore, reside in Cherry Hill, New Jersey.

CHILDREN: Reginald Ervin, February 12, 1982.

RECREATIONAL INTERESTS: He enjoys performing as a jazz saxophonist, teaching karate, running, bowling, boxing, fishing, football, and cooking.

ORGANIZATIONS: Member of the American Association for the Advancement of Science, the American Optical Society, the American Physical Society (APS), the APS Committee on Minorities in Physics, the North Carolina School of Science and Mathematics Board of Trustees, and Omega Psi Phi, and is a visiting lecturer in Physics at Texas Southern University.

SPECIAL HONORS: Graduated magna cum laude from North Carolina A&T (1971); named a Presidential Scholar (1967-1971), a Ford Foundation Fellow (1971-1974), a National Fellowship Fund Fellow (1974-1975), a NATO Fellow (1975); winner of Omega Psi Phi Scholar of the Year Award (1975), Los Angeles Public School System's Service Commendation (1979), Distinguished Alumni Award (1979), National Society of Black Professional Engineers Distinguished National Scientist Award (1979), Friend of Freedom Award (1981), Outstanding Young Man of America (1980), Who's Who Among Black Americans (1980), an AAU Gold Medal (1976), five Regional Blackbelt Karate Championships, and numerous proclamations and achievement awards.

EXPERIENCE: While at Massachusetts Institute of Technology, Dr. McNair performed some of the earliest development of chemical HF/DF and high-pressure CO lasers. His later experiments and theoretical analysis on the interaction of intense CO₂ laser radiation with molecular gases provided new understandings and applications for highly excited polyatomic molecules.

In 1975, Dr. McNair studied laser physics with many authorities in the field at E'cole D'ete Theorique de Physique, Les Houches, France. He has published several papers in the areas of lasers and molecular spectroscopy and has given many presentations in the United States and Europe.

Following graduation from MIT in 1976, McNair became a staff physicist with Hughes Research Laboratories in Malibu, California. His assignments included the development of lasers for isotope separation and photochemistry utilizing non-linear interactions in low-temperature liquids and optical pumping techniques. He also conducted research on electro-optic laser modulation for satellite-to-satellite space communications, the construction of ultra fast infrared detectors, ultraviolet atmospheric remote sensing, and the scientific foundations of the martial arts.

CURRENT ASSIGNMENT: Dr. McNair was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a mission specialist astronaut on future space shuttle flight crews.

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MARCH 1982

Following graduation from MIT in 1976, McNair became a staff physicist with Hughes Research Laboratories in Malibu, California. His assignments included the development of lasers for isotope separation and photochemistry utilizing non-linear interactions in low-temperature liquids and optical pumping techniques. He also conducted research on electro-optic laser modulation for satellite-to-satellite space communications, the construction of ultra fast infrared detectors, ultraviolet atmospheric remote sensing, and the scientific foundations of the martial arts.

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MARCH 1982

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Robert L. Stewart (Lieutenant Colonel, USA)
NASA Astronaut

BIRTHPLACE AND DATE: Born August 13, 1942, in Washington, D.C., but considers Arlington, Texas, to be his hometown. His parents, Mr. and Mrs. Lee O. Stewart, reside in Waverly Hall, Georgia.

PHYSICAL DESCRIPTION: Brown hair; brown eyes; height: 5 feet 6 inches; weight: 138 pounds.

EDUCATION: Graduated from Hattiesburg High School, Hattiesburg, Mississippi, in 1960; received a bachelor of science degree in Mathematics from the University of Southern Mississippi in 1964, and a master of science in Aerospace Engineering from the University of Texas in 1972.

MARITAL STATUS: Married to the former Mary Jane Murphy of La Grange, Georgia. Her parents, Mr. and Mrs. Emmett R. Murphy, are residents of Troup County, Georgia.

CHILDREN: Ragon Annette, February 25, 1965; Jennifer Lee, July 21, 1968.

RECREATIONAL INTERESTS: His interests include woodworking and photography.

ORGANIZATIONS: Member of the Society of Experimental Test Pilots, and the National Geographic Society; past member of Phi Eta Sigma, and the Scabbard and Blade (military honor society).

SPECIAL HONORS: Awarded 3 Distinguished Flying Crosses, a Bronze Star, a Meritorious Service Medal, 33 Air Medals, the Army Commendation Medal with Oak Leaf Cluster and "V" Device, 2 Purple Hearts, the National Defense Service Medal, the Armed Forces Expeditionary Medal, and the U. S. and Vietnamese Vietnam Service Medals; and presented the Army Aviation Safety Certificate of Recognition (1978).

EXPERIENCE: Stewart entered on active duty with the United States Army in May 1964 and was assigned as an air defense artillery director at the 32nd NORAD Region Headquarters (SAGE), Gunter Air Force Base, Alabama. In July 1966, after completing rotary wing training at Ft Wolters, Texas, and Ft Rucker, Alabama, he was designated an Army aviator. He flew 1,035 hours combat time from August 1966 to 1967, primarily as a fire team leader in the armed helicopter platoon of "A" Company, 101st Aviation Battalion (redesignated 336th Assault Helicopter Company). He was an instructor pilot at the U. S. Army Primary Helicopter School--serving 1 year in the presolo/primary-1 phase of instruction and about 6 months as commander of methods of instruction flight III, training rated aviators to become instructor pilots. He is a graduate of the U. S. Army's Air Defense School's Air Defense Officers Advanced Course and Guided Missile Systems Officers Course. Stewart served in Seoul, Korea, from 1972 to 1973, with the 309th Aviation Battalion (Combat) as a battalion operations officer and battalion executive officer. He next attended the U. S. Naval Test Pilot School

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at Patuxent River, Maryland, completing the Rotary Wing Test Pilot Course in 1974, and was then assigned as an experimental test pilot to the U. S. Army Aviation Engineering Flight Activity at Edwards Air Force Base, California. His duties there included being chief of the integrated systems test division as well as participation in engineering flight tests of UH-1 and AH-1 helicopters and U-21 and OV-1 fixed wing aircraft; serving as project officer and senior test pilot on the Hughes YAH-64 advanced attack helicopter during government competitive testing; and participation with Sikorsky Aircraft test pilots in developing an electronic automatic flight control system for the new Army transport helicopter--the UH-60A Black Hawk.

He has military and civilian experience in 38 types of airplanes and helicopters and has logged approximately 4,600 hours total flight time.

CURRENT ASSIGNMENT: Lt Colonel Stewart was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a mission specialist on future space shuttle flight crews. His technical duties in the astronaut office involve testing and evaluation of the entry flight control system for STS-1 -- the first space shuttle orbital mission.

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APRIL 1980

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CURRENT ASSIGNMENT: Lt Colonel Stewart was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period, making him eligible for assignment as a mission specialist on future space shuttle flight crews. His technical duties in the astronaut office involve testing and evaluation of the entry flight control system for STS-1 -- the first space shuttle orbital mission.

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APRIL 1980

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Henry W. Hartsfield, Jr. (Mr.)
NASA Astronaut

BIRTHPLACE AND DATE: Born in Birmingham, Alabama, on November 21, 1933. His mother, Mrs. Norma Hartsfield, resides in Birmingham, 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 Bitburg, 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 5,500 hours flying time--of which over 4,900 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.

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Hartsfield served as backup pilot for STS-2 and STS-3, Columbia's second and third orbital flight tests.

Hartsfield was pilot for STS-4, the fourth and final orbital test flight of the shuttle Columbia, which launched from Kennedy Space Center, Florida, on 27 June 1982. He was accompanied by Thomas K. Mattingly (spacecraft commander) on this 7-day mission designed to: further verify ascent and entry phases of shuttle missions; perform continued studies of the effects of long-term thermal extremes on the orbiter subsystems; and conduct a survey of orbiter-induced contamination on the orbiter payload bay. Additionally, the crew operated several scientific experiments located in the orbiter's cabin as well as in the payload bay. These experiments included the continuous flow electrophoresis system experiment designed to investigate the separation of biological materials in a fluid according to their surface electrical charge. The crew is also credited with effecting an inflight repair which enabled them to activate the first operational "Getaway Special"--comprised of nine experiments that range from algae and duckweed growth in space to fruit fly and brine shrimp genetic studies. STS-4 completed 112 orbits of the earth before landing on a concrete runway at Edwards Air Force Base, California, on July 4th.

With the completion of his first space flight, Mr. Hartsfield has logged 169 hours and 11 minutes in space.

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JULY 1982

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With the completion of his first space flight, Mr. Hartsfield has logged 169 hours and 11 minutes in space.

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JULY 1982

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Michael L. Coats (Commander, USN)
NASA Astronaut

BIRTHPLACE AND DATE: Born January 16, 1946, in Sacramento, California, but considers Riverside, California, as his hometown. His parents, retired Air Force Colonel and Mrs. Loyd A. Coats, are residents of Montrose, Colorado.

PHYSICAL DESCRIPTION: Brown hair; blue eyes; height: 6 feet; weight: 185 pounds.

EDUCATION: Graduated from Ramona High School, Riverside, California, in 1964; received a bachelor of science degree from the United States Naval Academy in 1968, a master of science in Administration of Science and Technology from George Washington University in 1977, and master of science in Aeronautical Engineering from the U.S. Naval Postgraduate School in 1979.

MARITAL STATUS: Married to the former Diane Eileen Carson of Oklahoma City, Oklahoma. Her parents, Dr. and Mrs. James W. Carson, reside in O'Fallon, Illinois.

CHILDREN: Laura M., August 29, 1973; Paul M., November 2, 1978.

RECREATIONAL INTERESTS: He enjoys reading, racquetball, and jogging.

SPECIAL HONORS: Awarded 2 Navy Distinguished Flying Crosses, 32 Strike Flight Air Medals, 3 Individual Action Air Medals, and 9 Navy Commendation Medals with Combat V.

EXPERIENCE: Coats graduated from Annapolis in 1968 and was designated a naval aviator in September 1969. After training as an A-7E pilot, he was assigned to Attack Squadron 192 (VA-192) from August 1970 to September 1972, aboard the USS KITTYHAWK, and during this time, flew 315 combat missions in Southeast Asia. He served as a flight instructor with the A-7E Readiness Training Squadron (VA-122) at Naval Air Station, Lemoore, California, from September 1972 to December 1973 and was then selected to attend the U.S. Naval Test Pilot School, Patuxent River, Maryland. Following test pilot training in 1974, he was project officer and test pilot for the A-7 and A-4 aircraft at the Strike Aircraft Test Directorate. He served as a flight instructor at the U.S. Naval Test Pilot School from April 1976 until May 1977. He then attended the U.S. Naval Postgraduate School at Monterey, California, from June 1977 until his selection for the astronaut candidate program.

He has logged 2,600 hours flying time and 400 carrier landings in 22 different types of aircraft.

CURRENT ASSIGNMENT: Commander Coats was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a pilot on future space shuttle flight crews.

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Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Judith A. Resnik (PhD)
NASA Astronaut

BIRTHPLACE AND DATE: Born April 5, 1949, in Akron, Ohio.

PHYSICAL DESCRIPTION: Black hair; brown eyes; height: 5 feet 4 inches; weight: 115 pounds.

EDUCATION: Graduated from Firestone High School, Akron, Ohio, in 1966; received a bachelor of science degree in Electrical Engineering from Carnegie-Mellon University in 1970, and a doctorate in Electrical Engineering from the University of Maryland in 1977.

MARITAL STATUS: Unmarried.

RECREATIONAL INTERESTS: She is a classical pianist and also enjoys bicycling, running, and flying during her free time.

ORGANIZATIONS: Member of the Institute of Electrical and Electronic Engineers; American Association for the Advancement of Science; IEEE Committee on Professional Opportunities for Women; American Association of University Women; American Institute of Aeronautics and Astronautics; Tau Beta Pi; Eta Kappa Nu; Mortarboard; Carnegie-Mellon University Admissions Council; Senior Member of the Society of Women Engineers.

SPECIAL HONORS: Graduate Study Program Award, RCA, 1971; American Association of University Women Fellow, 1975-1976.

EXPERIENCE: Upon graduating from Carnegie-Mellon University in 1970, Dr. Resnik was employed by RCA Missile and Surface Radar, located in Moorestown, New Jersey; and in 1971, she transferred to the RCA Service Company in Springfield, Virginia. Her projects while with RCA as a design engineer included circuit design and development of custom integrated circuitry for phased-array radar control systems; equipment specification, project management, and performance evaluation for control system equipment; and engineering support for the NASA sounding rocket program and telemetry systems. Dr. Resnik authored a paper concerning design procedures for special-purpose integrated circuitry.

Dr. Resnik was a biomedical engineer and staff fellow in the Laboratory of Neurophysiology at the National Institutes of Health in Bethesda, Maryland, from 1974 to 1977, where she performed biological research experiments concerning the physiology of visual systems. Immediately preceding her selection by NASA in 1978, she was a senior systems engineer in product development with Xerox Corporation at El Segundo, California.

CURRENT ASSIGNMENT: Dr. Resnik was selected as an astronaut candidate by NASA in January 1978. In August 1979, she completed a 1-year training and evaluation period making her eligible for assignment as a mission-specialist on future space shuttle flight crews.

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JANUARY 1980

CURRENT ASSIGNMENT: Dr. Resnik was selected as an astronaut candidate by NASA in January 1978. In August 1979, she completed a 1-year training and evaluation period making her eligible for assignment as a mission-specialist on future space shuttle flight crews.

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JANUARY 1980

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Steven A. Hawley (PhD)
NASA Astronaut

BIRTHPLACE AND DATE: Born December 12, 1951, in Ottawa, Kansas, but considers Salina, Kansas, to be his hometown. His parents, Dr. and Mrs. Bernard Hawley, reside in Salina.

PHYSICAL DESCRIPTION: Blond hair; blue eyes; height: 6 feet; weight: 155 pounds.

EDUCATION: Graduated from Salina (Central) High School, Salina, Kansas, in 1969; received bachelor of arts degrees in Physics and Astronomy (graduating with highest distinction) from the University of Kansas in 1973 and a doctor of philosophy in Astronomy and Astrophysics from the University of California in 1977.

MARITAL STATUS: Married to Dr. Sally K. Ride of Los Angeles, California. Her parents, Mr. and Mrs. Dale B. Ride, reside in Encino, California.

RECREATIONAL INTERESTS: He enjoys basketball, softball, tennis, running, playing bridge, and reading.

ORGANIZATIONS: Member of the American Astronomical Society, the Astronomical Society of the Pacific, Sigma Pi Sigma, Phi Beta Kappa, and the University of Kansas Alumni Association.

SPECIAL HONORS: Evans Foundation Scholarship, 1970; University of Kansas Honor Scholarship, 1970; Summerfield Scholarship, 1970-1973; Veta B. Lear Award, 1970; Stranathan Award, 1972; Outstanding Physics Major Award, 1973; University of California Regents Fellowship, 1974; Group Achievement Award for software testing at the Shuttle Avionics Integration Laboratory, 1981; NASA Outstanding Performance Award, 1981; NASA Superior Performance Award, 1981; Second Orbiter test and checkout at Kennedy Space Center, 1982; Quality Increase, 1982.

EXPERIENCE: Hawley attended the University of Kansas, majoring in physics and astronomy. In 1971, he was awarded an undergraduate research grant from the College of Liberal Arts and Sciences for an independent studies project on stellar spectroscopy. He spent three summers employed as a research assistant: 1972 at the U.S. Naval Observatory in Washington, D.C., and 1973 and 1974 at the National Radio Astronomy Observatory in Green Bank, West Virginia. He attended graduate school at Lick Observatory, University of California, Santa Cruz. His research involved spectrophotometry of gaseous nebulae and emission-line galaxies with particular emphasis on chemical abundance determinations for these objects. The results of his research have been published in major astronomical journals.

Prior to his selection by NASA in 1978, Dr. Hawley was a postdoctoral research associate at Cerro Tololo Inter-American Observatory in La Serena, Chile.

NASA EXPERIENCE: Hawley served as a simulator pilot for software checkout at the Shuttle Avionics Integration Laboratory prior to STS-1. For STS-2, STS-3, and STS-4, Hawley was a member of the astronaut support crew at Kennedy Space Center, Florida, for Orbiter test and checkout. He also served as prime close-out crewman for STS-3 and STS-4.

CURRENT ASSIGNMENT: Dr. Hawley was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a mission specialist on future space shuttle flight crews.

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NOVEMBER 1982

NASA EXPERIENCE: Hawley served as a simulator pilot for software checkout at the Shuttle Avionics Integration Laboratory prior to STS-1. For STS-2, STS-3, and STS-4, Hawley was a member of the astronaut support crew at Kennedy Space Center, Florida, for Orbiter test and checkout. He also served as prime close-out crewman for STS-3 and STS-4.

CURRENT ASSIGNMENT: Dr. Hawley was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a mission specialist on future space shuttle flight crews.

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NOVEMBER 1982

Biographical Data



Lyndon B. Johnson Space Center
Houston, Texas 77058

NAME: Richard M. Mullane (Lieutenant Colonel, USAF)
NASA Astronaut

BIRTHPLACE AND DATE: Born September 10, 1945, in Wichita Falls, Texas, but considers Albuquerque, New Mexico, to be his hometown. His parents, Mr. and Mrs. Hugh J. Mullane, are residents of Albuquerque.

PHYSICAL DESCRIPTION: Brown hair; brown eyes; height: 5 feet 10 inches; weight: 146 pounds.

EDUCATION: Graduated from St. Pius X Catholic High School, Albuquerque, New Mexico, in 1963; received a bachelor of science degree in Military Engineering from the United States Military Academy in 1967; awarded a master of science degree in Aeronautical Engineering from the Air Force Institute of Technology in 1975.

MARITAL STATUS: Married to the former Donna Marie Sei of Albuquerque, New Mexico. Her parents, Mr. and Mrs. Joseph J. Sei, reside in Albuquerque.

CHILDREN: Patrick Joseph and Amy Michele, March 5, 1968; Laura Ann, February 19, 1971.

RECREATIONAL INTERESTS: He enjoys micro-computer software design, skiing, scuba diving, and playing racquetball during his free time.

ORGANIZATIONS: Member of the Air Force Association.

SPECIAL HONORS: Awarded 6 Air Medals, the Air Force Distinguished Flying cross, Meritorious Service Medal, Vietnam Campaign Medal, National Defense Service Medal, Vietnam Service Medal, and Air Force Commendation Medal; named a Distinguished Graduate of the USAF Navigator Training School (and recipient of its Commander's Trophy), the USAF Institute of Technology, and the USAF Test Pilot School; winner of Second Place Award for Technical Papers at the 1975 American Institute of Aeronautics and Astronautics Midwest Regional Conference for presentation of Master's thesis.

Richard M. Mullane

EXPERIENCE: Mullane, an Air Force Lt. Colonel, was graduated from West Point in 1967. He completed 150 combat missions as an RF-4C weapon system operator while stationed at Tan Son Nhut Air Base, Vietnam, from January to November 1969, and a subsequent 4-year tour of duty at Royal Air Force Base, Alconbury, England. In July 1976, upon completing the USAF Test Pilot School's Flight Test Engineer Course at Edwards Air Force Base, California, he was assigned as a flight test weapon system operator to the 3246th Test Wing at Eglin Air Force Base, Florida.

CURRENT ASSIGNMENT: Lt. Colonel Mullane was selected as an astronaut candidate by NASA in January 1978. In August 1979, he completed a 1-year training and evaluation period making him eligible for assignment as a mission specialist on future space shuttle flight crews.

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Betty Johnson
RELEASE NO. 83-004

For Release
February 18, 1983

CREWMEMBERS NAMED FOR STS-13, SPACELAB 2 AND 3

The National Aeronautics and Space Administration announced today the names of astronaut crews for STS-13 and Spacelab 3, as well as mission specialists for Spacelab 2.

Commanding STS-13 will be Robert L. Crippen, who was pilot on STS-1 and is scheduled for command of STS-7. His crew includes Francis R. Scobee, pilot; and mission specialists Dr. George D. Nelson, Terry J. Hart and Dr. James D. van Hoften.

STS-13, the sixth flight of the orbiter Challenger, is scheduled as a five-day mission in April 1984. Its major objectives are repair of the malfunctioning Solar Maximum Mission satellite and deployment of the Long Duration Exposure Facility.

Commander of the Shuttle crew for STS-18 (Spacelab 3, which is scheduled for launch prior to Spacelab 2) is Robert F. Overmyer. Overmyer was the pilot of STS-5. With him will be Frederick D. Gregory, pilot; and mission specialists Dr. Don L. Lind, Dr. Norman E. Thagard and Dr. William E. Thornton. Both Thagard and Thornton are scheduled for Shuttle flights prior to

Spacelab 3, Thagard on STS-7 and Thornton on STS-8. Payload specialists will be announced later.

Spacelab 3 will be the first operational Spacelab mission, carrying experiments in materials processing, space technology and life sciences.

Mission specialists on STS-24 (Spacelab 2) will be Dr. Anthony W. England and Dr. Karl G. Henize. Other crewmembers and payload specialists will be named later.

Originally scheduled to precede SL-3 into orbit, SL-2 is a developmental flight carrying 13 major experiments in fields such as plasma physics, infrared astronomy and solar physics. The transposition of the two Spacelab flights is caused by a delay in completion of the Instrument Pointing System, necessary for SL-2 experiments.

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For Release

Terry White
RELEASE NO. 83-005

February 22, 1983

NASA NEGOTIATES WITH ROTHE FOR SHOP SERVICES CONTRACT

The NASA Lyndon B. Johnson Space Center, Houston, Texas, has selected Rotne Development, Inc. of San Antonio, Texas for negotiations leading to award of a cost-plus fixed fee contract for central shop support services at the Center.

The services to be provided include assembly of electronic components and fabrication of electrical cabling to aerospace standards; disassembly, cleaning, and reassembly of components by use of ultrasonic and precision cleaning equipment and procedures to aerospace cleanliness standards; perform chemical finishing and plating of metals and other materials; the application of organic and inorganic coatings to metal, wood, plastics and composite materials; and inspection services as required to verify quality assurance standards.

Rothe's proposed cost and fee for providing these services for the period April 1, 1983, through March 31, 1984, is approximately \$700,000. NASA has the option to extend the contract for four additional one-year periods.

Bionetics Corporation of Hampton, Virginia, also submitted a proposal for its procurement.

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Steve Nesbitt
Release No. 83-006

For Release:
Immediate

LUNAR AND PLANETARY CONFERENCE TO BE HELD AT JSC

Evidence supporting the view that recently discovered Antarctic meteorites came to Earth from Mars and the Moon will be among topics explored at the Fourteenth Lunar and Planetary Science Conference March 14-18 at the NASA Johnson Space Center in Houston.

Proposals for a return to the Moon and establishment of a lunar base also will be presented at the conference which has drawn hundreds of scientists from around the world each year since the first lunar samples were brought to Houston in 1969.

Three sessions during the week-long event will be open to the public, beginning with a policy discussion of the case for a return to the Moon. That session will be held beginning at 1:30 p.m. March 16 in the auditorium of the Olin E. Teague Visitor Center.

February 25, 1983

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The prospects for future planetary exploration will be discussed at 8 p.m. that evening in the auditorium in a joint session with the Planetary Society.

Moon settlements, lunar bases, mining on the Moon and related topics will be covered in a third public session at 8 p.m. March 17 in the gymnasium of the Gilruth Recreation Center at NASA.

Over 460 abstracts of scientific papers have been accepted for distribution to conference participants and 296 oral presentations will be made in the fields of lunar and planetary geology, chemistry and physics.

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NOTE TO EDITORS: Members of the press wishing to cover any portion of the conference should contact Steve Nesbitt, Public Information Officer, at (713) 483-5111, for copies of the press abstracts, interviews with conference participants or other assistance. Press badges will be issued to media representatives in attendance.

NASA News

National Aeronautics and
Space Administration

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



Steve Nesbitt
RELEASE NO. 83-007

For Release
Immediate

NASA CONFERENCE TO HIGHLIGHT RETURN TO THE MOON

When scientists, economists and policy analysts meet in public sessions at the NASA Johnson Space Center next week to discuss man's return to the Moon, they will be proposing and pondering many of the critical elements needed to make such a return productive and permanent.

Three public presentations, two on a return to the Moon and one on future planetary exploration, will be part of the 14th Lunar and Planetary Science Conference to be held at JSC March 14-18, a gathering of scientists from around the world that has taken place in Houston each year since the first soil samples were brought back from the Moon by Apollo 11 astronauts in 1969.

The first public event, titled "Return to the Moon," begins at 1:30 p.m. Wednesday in the Teague auditorium. An 8 p.m. presentation Wednesday, also in the auditorium, will focus on "Prospects of Planetary Exploration." "Future Lunar Programs" will be the topic at a Thursday 8 p.m. public session in the gymnasium of the Gilruth Recreation Center.

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"The sessions on a return to the Moon are a look at where we think the space program should be in 10 to 15 years and a consideration of what we should be doing now in preparation," says Dr. Michael Duke, chief of lunar and planetary sciences at JSC.

Participants in the discussions will explore some of the many topics that such a project would entail. Transportation systems, sources of electrical power, use of natural resources, scientific benefits, and political considerations will be reviewed.

The space station and a mature space transportation system are prerequisites to the establishment of a lunar base, Duke notes. Any permanent lunar facility would be dependent on a method of routinely shuttling back and forth from the Moon to a space station in low Earth orbit. Vehicles with that capability have not been built, but would likely be a combination of orbital transfer vehicles now on the drawing board and the lunar landers used in Apollo.

The orbital transfer vehicles, designed to carry cargo from near-Earth orbit to geostationary orbit, could be equipped with landing legs to permit a touchdown on the Moon. Once there they might refuel with oxygen distilled from lunar soil by use of a

--more--

solar furnace and with silanes, propellants similar to hydrocarbon fuels, but in which the carbon atoms are replaced with silicon atoms.

Reasons for establishing a lunar base are just now being defined, but scientific benefits are among the most prominent. "The Moon is a cornerstone in our understanding of the planets," says Duke. Scientists have discovered that the oldest rocks we have examined on the Earth are about as old as the youngest rocks we have from the Moon.

Attempts to understand the origin of the Moon and its geologic development would be served by a return. Lunar polar-orbiting satellites could be used to locate major new resources which may include large quantities of water-ice in previously unmapped polar regions.

In 20 to 25 years radio astronomers may want to place a radio telescope on the far side of the Moon, shielded from Earth's effluent of radio noise and enabling them to listen in relative quiet to deep space, searching for clues in our understanding of the universe or perhaps signals from other civilizations.

With current emphasis on the commercial applications of space activity, economic considerations would play a leading role in lunar base development. Such a base would need to be largely

independent from Earth for its energy production. One paper to be presented during the conference highlights the use of space-based nuclear power plants which would provide reliable, abundant power for the site. A plant of this type is currently under development at Los Alamos National Laboratory.

Some see the Moon as a potential operating base for industries which are viewed as undesirable on Earth such as nuclear power plants. A nuclear fueled power plant on the Moon could beam electric power back to Earth as microwaves and nuclear waste could be stored on the Moon undisturbed by weather and geological forces that threaten such storage here.

Any Moon-based operation would likely be part of a chain which would include a space station in low Earth orbit. The Moon's low gravity makes it easier to use as a debarkation point to space, and such products as aluminum, once extracted and initially processed on the Moon, could be carried to the space station more cheaply than making the same, relatively short trip from Earth.

Duke says the time is right for someone to begin examining the economics of lunar operations. One analogy compares the Moon to a developing country on Earth. It initially requires an infusion of capital to take it through the stages from a source

of raw materials to subsistence economy to fully functioning economy.

Duke points out, however, that the Moon lacks an abundance of many of the important chemical elements found commonly on Earth. Carbon, water, and nitrogen are limiting factors in what can be done there, but the key in successful development of the Moon will be in making use of what it does have.

NOTE TO EDITORS: NEWS MEDIA REPRESENTATIVES WISHING TO COVER THE LUNAR AND PLANETARY SCIENCE CONFERENCE SHOULD CONTACT STEVE NESBITT, NASA PUBLIC INFORMATION OFFICE, 483-5111 FOR ASSISTANCE. MEDIA IDENTIFICATION BADGES AND PRESS ABSTRACTS WILL BE PROVIDED.

Brian Welch

For Release:

RELEASE NO. 83-008

IMMEDIATE

SCIENTISTS BELIEVE METEORITES MAY HAVE COME FROM MARS

A planetary science controversy, which has been active since the 1970s, may now be taking a new turn as recent studies at NASA's Johnson Space Center in Houston can provide new evidence that at least one and possibly nine meteorites found on earth have come from Mars.

If this idea is correct -- and scientists are quick to say that the only conclusive proof would be to collect samples from the surface of Mars itself -- these meteorites could be the most important extraterrestrial rocks studied here since the first return of lunar samples by the crew of Apollo 11 in 1969.

The scientific detective story which has some planetary scientists believing that rocks from Mars are now being studied here on earth goes all the way back to 1815, when a meteorite that fell near Chassigny, France, was recovered for scientific study.

March 15, 1983

More than a century later, scientists would discover that this meteorite is fundamentally different from nearly all of the thousands of meteorites found on earth -- it is nearly 3 billion years younger. Then in 1865, another of these unique meteorites was found in Shergotty, India.

Because they were slightly different in composition, both the Chassigny and Shergotty samples became the first members of two rare classes of meteorites, the chassignites and the shergottites. In 1911, a similar but equally unique meteorite fell near Nakhla, Egypt, killing a dog. It also became the first of a class of meteorites, the nakhlites.

The nine so-called SNC meteorites which make up these three classes -- four shergottites, three nakhlites and two chassignites -- have been found around the world in places like Antarctica, Brazil, Nigeria and Lafayette, Ind.

These meteorites are unique chiefly because their age, only 1.3 billion years, is incredibly young in comparison to other meteorites, all of which date back to the formation of the solar system about 4.5 billion years ago. The SNC meteorites, being 3 billion years younger, appear to have come from a different source than other meteorites, which have apparently formed in the asteroid belt between Mars and Jupiter.

When these unusually low ages were discovered in the 1960s, the real debate as to the origin of the SNC meteorites began.

They are all igneous rocks, which means they cooled and crystallized from molten lava. This evidence that the SNC meteorites formed by volcanic eruptions about 1.3 billion years ago only added to the mystery of where they came from, for there was no obvious planetary source for such young volcanic activity. By 1.3 billion years ago, the moon's volcanic activity had long since ceased. None of the more distant asteroids seem large enough to have generated prolonged volcanism. (The asteroid Vesta has been suggested, rather diffidently, as a possible source.)

Mars, however, is a large enough world to have generated the internal heat for relatively young volcanic activity. Realizing they had in their possession meteorites of unusual origin, scientists began to consider an unusual source, the planet Mars.

"In the pre-Apollo 11 days, there was a round of conjecture about what type of material might come from the moon," said Dr. Donald Bogard of Johnson's Planetary and Earth Science Division (PESD), which manages all of the samples returned from the moon during the Apollo program. "It was suggested that certain types of meteorites might be like lunar material. So conjecture on something coming from the moon is not new. That of Martian origin, however, is more recent."

These speculations were given increasing force in the 1970s, when NASA's Mariner 9 and Viking Orbiters returned pictures of numerous volcanic landforms on Mars, many of which were about 1 to 3 billion years old -- about the age of the SNC meteorites.

In the past three years, studies of the shergottite group added important new evidence. All four of the samples -- one from India, one from Nigeria and two from the antarctic -- were found to have been subjected to intense shock waves, like those generated by intense meteorite impacts about 180 million years ago. Moreover, all the shergottites were also exposed to cosmic-ray bombardment in space as small fragments about 2 million years ago. "An interpretation of those ages," said Dr. Lawrence Nyquist of Johnson, "is that these samples cooled from molten rock 1.3 billion years ago, were somehow ejected from a parent planet 180 million years ago as a large block more than 2 meters across, and that small fragments broke off in space about 2 million years ago. Those fragments later landed on earth."

But how did they get here? More perplexing, how did they leave the parent body in the first place? The first serious suggestion that Mars was the source was considered improbable by theoreticians. How, they wanted to know, could a block of material escape the gravity field of Mars? A meteorite capable of imparting the necessary velocity (3.7 kilometers per second), they said, would more likely vaporize rather than eject surface rocks. How could such ejected rocks penetrate Mars' thin but resistant atmosphere? And even if such a collision could send chunks of rock flying off into space from Mars, then why have not samples from the much closer moon been similarly propelled to earth and found?

Nyquist and Bogard, among others, decided to try to decipher the puzzle.

At the Lunar and Planetary Science Conference in Houston this month, Nyquist is presenting a paper which is the latest answer to the problem of how the samples might have gotten to earth from Mars. Drawing on past research, including his own, he suggests that a large meteorite striking Mars with a high enough velocity and a low angle of impact (about 15 degrees from the surface) could impact and then ricochet at high velocity partly vaporizing itself in the process. The vapor cloud produced by the impact and vaporization would carry with it pieces of the Martian surface, accelerating them to the high escape velocity needed to leave the planet.

This mechanism could explain how rocks are blown into space from the surface of Mars, but then why haven't scientists discovered rocks on earth similarly blasted off the nearby moon? Such grazing meteorite impacts must also occur on the moon, and the lunar crater Messier is generally considered as the classic example of the result of a grazing impact, with ejecta spread around it in a typical "butterfly" pattern.

The answer to this question may also have been found recently in Antarctica. A small meteorite, weighing only a little more than an ounce, was recovered last year from a desolate area called Elephant Moraine. At a first glance, this sample seemed identical to rocks returned from lunar highlands by Apollos 15, 16 and 17.

Although the scientists actively studying this sample are not yet convinced that it comes from the moon, they should be able to settle the question by comparing its mineral composition, chemistry and age with definite lunar samples. If the rock does come from the moon, it seems possible that similar impacts could have sent us rocks from Mars as well.

Nyquist believes the possible lunar sample found in Antarctica represents further circumstantial evidence for his theory, but, he adds, that even without this find, there is an explanation for the near-absence of lunar samples on earth and the apparent relative abundance of Martian ones. The difference arises from the simple fact that it takes much longer for a meteorite to travel from Mars to earth than from the moon to earth. An impact large enough to propel rocks into space occurs on either Mars or the moon only about every 100 million years, he says, and the Mars-to-earth travel time is more than 100 million years. This means that there is an essentially steady flow of small amounts of material coming from Mars. A rock blasted from the moon, on the other hand, would be quickly swept up by the earth's gravity, probably within a few days and the lifetimes of stony meteorites, exposed to terrestrial weather is at most only a few hundred years.

At the same time that Nyquist's research is entering the field, Bogard is wrapping up a paper which makes the evidence for Martian origin of the rocks even more persuasive.

Another antarctic meteorite, a shergottite collected in 1979, also from the Elephant Moraine region near the U.S. McMurdo Base, contained traces of the noble gases (argon, krypton, xenon, etc.) similar to those measured on Mars by the Viking landers. Measurements of these gases in the meteorite (sample EETA 79001) "don't look like anything so much as the Viking measurements of the Martian atmosphere," Bogard said.

Besides chemical abundance patterns in the meteorites that point to Mars, Bogard's experiments in the last few months have turned up isotopic patterns that are also close to what the Viking landers measured. Argon-40, for example (not the more common argon-38), is anomalously plentiful on Mars, and the similar argon-40 and helium-4 abundances found in the antarctic meteorite lead to a strong suggestion of Martian origin.

"It is one more line of evidence," Bogard said. But on the side of caution, he added, "Our studies are like fingerprint comparisons. But in the case of Mars, we have a rather smudged print. There are certain types of information which can only be derived from actually handling a sample, such as mineral chemistry and mineral petrology. Viking measured a fine dust surface layer, not rocks, to get a chemical composition of the surface. However, there are several elemental abundance patterns and certain isotopic signature patterns which make for a reasonably strong argument of Martian origin."

So far, the caution inherent in scientific detective work prompts researchers here to suggest a Martian origin specifically for sample EETA 79001 only, a shergottite, for both geochemical and geologic reasons. But since the shock event and the cosmic ray exposure apparently occurred at the same time for all of the four shergottites, Nyquist will go so far as to suggest that perhaps all the shergottites originated in the same place. Other scientists go even further to suggest that the evidence gleaned from sample 79001 and the other samples indicates that all nine SNC meteorites came from Mars.

"The only conclusive thing would be to go to Mars and find out," said Planetary and Earth Sciences Division Chief Dr. Michael Duke. What is sure is that the detective work and the debates will continue until that day 20 or 30 years hence when either a human or a robot is able to bring a piece of the Red Planet back to earth where the question can be answered once and for all.

-end-

For Release

Betty Johnson
RELEASE NO. 83-009

March 21, 1983

Flight Control of STS-6

STS-6 will differ significantly from previous missions in payload operations aspects of flight control.

The Space Shuttle Challenger will carry on its maiden flight a 5,000-pound Tracking and Data Relay Satellite (TDRS) mated to a 32,000-pound Inertial Upper Stage (IUS) booster. Changes in payload operations control are caused by the unique nature of this cargo and NASA's responsibility to see it safely into geosynchronous Earth orbit.

Two geographically remote Payload Operations Control Centers (POCC) will monitor the journey of the TDRS/IUS all the way to geosynchronous orbit. Coordination of three geographically separate control centers is a new element in flight control.

Harold M. Draughon, lead flight director for STS-6, will have responsibility for the Houston Mission Control Center, and M. P. (Pete) Frank, Chief of Flight Operations Integration at Johnson Space Center, will have management responsibility for integrating the two remote POCC's. During this mission Frank will be located in Sunnyvale, California, at the POCC in the Air Force Satellite Control Facility. The third POCC will be in the Space Communications Company (SPACECOM) complex, White Sands, New Mexico.

SPACECOM is the owner of the Tracking and Data Relay Satellite and will operate it for NASA once the satellite is operational.

On STS-5 NASA contracted with the owners of the ANIK-C3 and the SBS-3 communications satellites to deliver those satellites into low Earth orbit on the Space Shuttle Columbia and to deploy them. Once deployed, however, the satellites became the responsibility of their owners, Telesat Canada and Satellite Business Systems, who utilized the Payload Assist Module (PAM) booster to inject the satellites into a transfer orbit.

Geosynchronous orbit, an orbit in which the satellite remains still in relation to a point on Earth's surface, is achieved in two stages. After a satellite is deployed from the Shuttle at about 150 nautical miles above the Earth, it is first boosted into an elliptical transfer orbit with a low altitude of about 150 miles and a high point of about 22,300 miles. A second booster firing then circularizes the orbit at its high point (apogee), placing the object into geosynchronous orbit.

The PAM booster used during STS-5 is a one-stage rocket which places the satellite into the elliptical transfer orbit. An apogee kick motor in the satellite itself accomplished the change to geosynchronous orbit. Unlike the PAM, the IUS is a complete two-stage booster which accomplishes both the first (transfer) and second (geosynchronous) orbits.

Also unlike the situation during STS-5 where NASA handed over control of each satellite to the customer after it was deployed from the Shuttle and before the PAM blasted it into transfer orbit, during STS-6 NASA will retain responsibility for the TDRS until it is placed successfully into geosynchronous orbit.

After the TDRS/IUS has been deployed from the Shuttle in low Earth orbit, Draughon will hand over management of the operation of the TDRS/IUS to

Frank. From that point through the first and second burns of the IUS until the TDRS is determined to be in geosynchronous orbit, Frank will be responsible for managing the integration of the two remote POCC'S. When successful geosynchronous orbit has been achieved, control will shift to the satellite's owner, SPACECOM.

Draughon served as entry team flight director during STS-3 and STS-4 and as backup flight director during STS-2. Pre-launch mission planning and coordination, as well as leadership and management duties during the on-orbit phase, are the responsibility of the lead flight director.

Ascent/entry flight directors will be Jay H. Greene and Gary E. Coen, both of whom have Shuttle flight control experience.

As with previous Shuttle missions, three teams of flight controllers will alternate shifts in the Mission Operations Control Room (MOCR). The facility provides centralized control of the Shuttle from launch to landing and is backed up by additional teams operating from nearby staff support rooms, as well as from the two remote POCC's. 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 directors, 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:

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 entry.

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 computers.

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

Booster Systems 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 entry.

Propulsion Systems Engineer (Prop) -- Responsible for monitoring 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.

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

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 (OIC) -- 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.

Payload Officer (Payloads) -- Coordinates all payload activities with the two remote POCC's.

Upper Stage Officer (UPCO) -- Responsible for the power control panel, which is the power transfer panel for both spacecraft power and the IUS; for the communications interface unit, which routes all telemetry coming from the IUS to various orbiter systems and has the ability to command the IUS; and for the mechanical operations of the tilt table.

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-6.

Personnel assignments to STS-6 flight control teams follow:

<u>FUNCTION</u>	<u>ASCENT/ENTRY TEAM</u>	<u>ORBIT TEAM</u>	<u>PLANNING TEAM</u>
Flight Director	Jay H. Greene (Ascent) Gary E. Coen (Entry)	Harold M. Draughon	Brock R. Stone
Capsule Communicator	Richard O. Covey (Ascent) Roy D. Bridges Bryan D. O'Connor (Entry)	Jon A. McBride (Lead) Guy S. Gardner	Richard O. Covey Mary L. Cleave
Operations Integration Officer	Kim W. Anson	Wayne B. Boatman	Carolyn H. Blackhall
Flight Dynamics Officer	Bradford H. Sweet (Ascent) Willis M. Bolt (Entry)	Craig Staresinich	Gregory T. Oliver
Trajectory Officer	Willis M. Bolt (Ascent) Phillip J. Burley (Entry)	Brian L. Jones	Edward P. Gonzales
Guidance Officer	Will S. Presley	Thornton E. Dyson	K. Alan Keisner
Booster Systems Engineer	John A. Kamman (Lead) Jerry L. Borrer	Jenny Howard Jerry L. Borrer	Baldwin G. Fitzgerald
Propulsion Systems Engineer	N. Wayne Hale (Lead)	William H. Gerstenmaier	Charles D. Young
Guidance, Navigation and Control	Harold J. Clancy (Lead) David W. Whittle	Charles K. Alford David W. Whittle	Frank E. Trlica
Ground Control	John H. Wells (Ascent) Julius M. Conditt (Ascent) Norman B. Talbott (Entry) Wayne E. Murray (Entry)	Robert R. Marriott Charles R. Capps	Don E. Halter
Integrated Communication Systems Officer	Granvil A. Pennington	A. Lee Briscoe (Lead) Granvil A. Pennington	Harold Black
Data Processing Systems Engineer	Ernest E. Smith	Andy F. Algate (Lead) Ernest E. Smith	Michael Darnell
Environmental, Consumables and Mechanical Systems Engineer	Paul M. Joyce (Ascent) Charles T. Holliman	R. John Rector (Lead)	Jerry D. Pfleeger
RMS, Mechanical Systems and Upper Stages	John D. Blalock	Robert E. Anders (Lead) John D. Blalock	Rodney L. Lofton

Upper Stage Officer	David P. Huntsman	Jeffrey Williams (Lead) David P. Huntsman	Kathryn A. Havens
Flight Activities Officer	Robert H. Nute	Ben F. Ferguson	M. Lau
Payloads	Janis Plesums Linda M. Godwin (OJT)	J. J. Conwell James E. Duvall (OJT)	Anngienetta R. Johnson Daniel D. Fennessy (OJT)
Flight Surgeon	T. E. Lefton	James M. Vanderploeg	

end

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center

Houston, Texas 77058

AC 713 483-5111



25th Anniversary
1958-1983

Steve Nesbitt
RELEASE NO. 83-010

For Release:
Immediate

NOTE TO EDITORS:

MANAGEMENT AT THE NASA JOHNSON SPACE CENTER HAS ISSUED A FORMAL POLICY ON THE PUBLIC RELEASE OF INFORMATION RELATING TO ASTRONAUT CREW HEALTH DURING SPACE FLIGHTS. COPIES OF THE POLICY ARE AVAILABLE IN THE JSC NEWSROOM.

March 23, 1983

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Steve Nesbitt
Release No. 83-011

For Release
Immediate

JOHNSON SPACE CENTER ANNOUNCES INTERNAL REORGANIZATION

NASA Johnson Space Center Director Gerald D. Griffin has announced an internal reorganization of the space center effective after the sixth Space Shuttle flight next week.

Griffin cited the center's evolution from primarily a Space Shuttle development role to space transportation system operations.

The major organizational change involves the creation of three new elements: Space Operations, Research and Engineering, and Center Support. These will incorporate the existing functions at the center, shifting those more directly involving operational space flight into one unit, research programs into a second, and the support functions such as administration and maintenance into another.

March 30, 1983

Clifford E. Charlesworth will be acting Director of Space Operations, while continuing his present duties as Deputy Center Director. Reporting to Charlesworth will be George W.S. Abbey as Director of Flight Crew Operations, Eugene F. Kranz as Director of Mission Operations, and Jerry C. Bostick as Director of Mission Support.

Flight Crew Operations will include the Astronaut Office and NASA aircraft activity at Ellington Air Force Base. Mission Operations includes flight control teams, and Mission Support will encompass primarily the computer hardware and software support of the Mission Control Center and Space Shuttle simulators.

Aaron Cohen will serve as Director of Research and Engineering, a unit that will include many of the functions formerly included in the Engineering and Development organization and the Space and Life Sciences directorate. Reporting to Cohen will be William E. Rice, Assistant to the Director of Research and Engineering and acting Director of Space and Life Sciences, and Thomas L. Moser as acting Director of Engineering.

Center Support will be headed by William R. Kelly. Two functional areas under Kelly's overall supervision will remain essentially unchanged: Center Operations, Kenneth B. Gilbreath, director, and Administration, R. Wayne Young, director. Also reporting to Kelly will be Rob R. Tillett, Manager of the White Sands Test Facility.

Program offices were realigned in the organizational change. The Space Shuttle Program Office is renamed the National Space Transportation Systems Program Office. Dr. Glynn S. Lunney will continue as program manager.

The Space Shuttle Orbiter Project Office is renamed the Space Shuttle Projects Office and will manage all JSC Shuttle hardware development. Arnold D. Aldrich will continue as manager.

Two staff offices are abolished. They are the Technical Planning Office and Program Operations Office. Joseph P. Loftus, currently Chief of the Technical Planning Office, will remain on the center director's staff as Assistant to the Director (Plans). Richard A. Colonna, Manager of the Program Operations Office, will be assigned as Deputy Manager, Space Shuttle Projects. Functions and personnel of these offices will be reassigned within the new organizational framework. All other staff offices remain unchanged in the management structure.

#

Dave Garrett
RELEASE NO. 83-012

For Release:
April 7, 1983

IUS INVESTIGATION BOARD MEMBERS NAMED

National Aeronautics and Space Administration (NASA) and the United States Air Force (USAF) have named members of a joint anomaly investigation board to look into the Inertial Upper Stage (IUS) performance on STS-6. The IUS carried the first Tracking and Data Relay Satellite from low earth orbit to near geosynchronous position.

The board will be chaired by Air Force Brigadier General Donald W. Henderson, Commander of the Space and Missile Test Organization at Vandenberg Air Force Base, Calif. Mr. Thomas J. Lee, Deputy Director of NASA Marshall Space Flight Center (MSFC), will be the NASA counterpart. Other board members are Air Force Colonel Lester S. McChristian, Jr., Air Force Colonel William Foster, Mr. Robert J. Parks, and Mr. Alton E. Jones.

The purpose of the board will be to evaluate the circumstances and causes of Tuesday's IUS performance and to suggest courses of action to prevent recurrence. The board will hold its first meeting at USAF Space Division, (SD), Los Angeles, Calif., on Thursday morning, April 7, 1983. For further information contact Lt. Col. Herbert G. Baker, SD, Office of Public Affairs, area code 213-643-0030, or John Taylor MSFC, Office of Public Affairs, area code 205-453-0031.

Terry White
RELEASE NO. 83-013

For Release:

April 11, 1983

JOHNSON SPACE CENTER NEGOTIATES AIRCRAFT LEASE PURCHASE CONTRACT

The NASA Johnson Space Center, Houston, Texas will negotiate a firm fixed-price contract to lease, with option to buy, a used Gulfstream II aircraft from U. S. Aircraft Sales, Inc., McLean, Virginia. The twin turbojet aircraft will be modified into a Shuttle Training Aircraft (STA), joining two other STAs bought in January 1974 from Grumman Aerospace Corporation.

Full inspection and systems analysis on the airplane will be run during the lease period, after which NASA intends to exercise the purchase option and begin modification. The proposed lease-purchase price of the aircraft is \$6.9 million.

STAs are modified to have the final approach characteristics of the Shuttle orbiter, and are used for training Space Shuttle astronauts for the steep glide toward landing after coming back to earth from orbit.

Other offers of used Gulfstream IIs were received from Aviation Enterprises, Inc., Washington D.C.; Gulfstream Aerospace Corporation, Savannah, Georgia; Honeywell, Inc., Minneapolis, Minnesota; Omni International Corporation, Rockville, Maryland; and Procter & Gamble Company, Cincinnati, Ohio.

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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. 83-014

IMMEDIATE

NOTE TO EDITORS:

The post-flight news conference for the STS-6 flight crew will be April 22 at the NASA Johnson Space Center in Houston, Texas.

The conference will begin at 1 p.m. in Room 135 of Building 2.

Astronauts Paul J. Weitz, Karol J. Bobko, F. Story Musgrave and Donald H. Peterson will show a brief film clip and review mission highlights.

April 14, 1983

#

John Lawrence
RELEASE NO. 83-015

For Release:
May 16, 1983

ASTRONAUT RECRUITMENT

The first of what will become an annual selection of Space Shuttle astronauts will be instituted later this year by the National Aeronautics and Space Administration.

NASA anticipates openings for six pilots and six mission specialists in this selection. Pilot astronauts are responsible for control of Space Shuttles during launch, reentry and other required maneuvers, and for maintenance of flight systems. Mission specialists' responsibilities include management and operation of Shuttle systems which support payloads during flight.

Applications from civilians will be accepted between Oct. 1 and Dec 1, 1983. Selections will be made in the spring of 1984 and successful candidates will report to work that summer. Military services begin this month screening candidates for nomination to NASA.

Minimum qualifications for pilot astronauts are:

- * A bachelor's degree from an accredited institution in engineering, biological or physical science, or mathematics.
- * At least 1,000 hours time as pilot in command of high performance jet aircraft. Flight test experience is highly desirable.
- * Ability to pass a NASA Class I space flight physical examination, which is similar to military and civilian flight physicals.

- * Height between 64 and 76 inches.

For mission specialists, minimum qualifications are:

- * A bachelor's degree from an accredited institution in engineering, biological or physical science or mathematics.

- * Degree must be supplemented by a least three years related professional experience. An advanced degree is desirable and may be substituted for the experience requirement.

- * Ability to pass a NASA Class II space flight physical examination, which is similar to military and civilian flight physicals.

- * Height between 60 and 76 inches.

NASA has an affirmative action program goal of including qualified minorities and women among the newly-selected candidates.

The number of candidates to be recruited in subsequent selection periods will vary depending upon mission requirements and the rate of attrition in the existing astronaut corps.

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National Aeronautics and
Space Administration

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

Steve Nesbitt

RELEASE NO. 83-015

For Release:
IMMEDIATE

JSC OBSERVES FEDERAL WOMEN'S WEEK APRIL 26-28

The NASA Johnson Space Center's Federal Women's Program Committee will sponsor the Sixth Annual Federal Women's Week observance April 26-28.

The event is designed to increase awareness by both women and men of the role of women in the federal workforce, recognizing their contributions and potential.

Author and originator of the television program "Eyes of Texas," Ray Miller will be the keynote speaker at a luncheon Tuesday at the Gilruth Recreation Center.

Sessions on Wednesday at the recreation center include "Thinking on Your Feet" at 9 a.m. presented by Miller-Keys Associates of Austin, and "Stepping Stones to New Frontiers" by NASA Astronaut Kathryn Sullivan at 1 p.m.

--more--

April 21, 1983

Thursday events to be held at the Olin Teague Visitor Center include "Winning Script vs. Losing Script" at 9 a.m. by Dr. Warren Chaney of the University of Houston, Clear Lake campus, and "Medical Spinoffs from Space" at 1 p.m. by Dr. Charles LaPinta of NASA.

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National Aeronautics and
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25th Anniversary
1958-1983

For Release:

John Lawrence
RELEASE NO. 83-016

May 11, 1983

NOTE TO EDITORS

A pre-flight press conference with STS-7 astronauts Robert Crippen, Richard Hauck, John Fabian, Sally Ride and Norman Thagard, will be conducted at 1 p.m. CDT Tuesday, May 24, at the Olin E. Teague Auditorium, Johnson Space Center, Houston.

A series of mission background briefings will begin at 1 p.m. CDT Monday, May 23, in the JSC News Center and continue through that afternoon and Tuesday morning.

STS-7 is scheduled for launch at 6:33 a.m. CDT, Saturday, June 18.

#

Janet Ross

For Release:

Release No. 83-017

IMMEDIATE

FLIGHT CONTROL FOR STS-7

The seventh flight of the Space Shuttle and the second flight of the orbiter Challenger will include several first-time mission objectives.

Challenger will carry a Shuttle Pallet Satellite (SPAS) developed by the Messerschmitt-Bolkow-Blohm-GmbH Space Division in West Germany. It will be the first payload to be deployed and retrieved during a flight.

SPAS will be deployed by the Remote Manipulator System (RMS). On STS-2, 3 and 4 there was a separate position in the Mission Operations Control Room (MOCR) for the testing phase of the RMS. RMS is considered an operational unit for STS-7 and has been incorporated in the RMU (Remote Manipulator System, Mechanical and Upper Stage Systems) position in the MOCR.

Proximity operations (maneuvering around the SPAS) will occur on flight day five. Although this is the first time proximity operations will occur in the Shuttle program, the technique will become standard for rendezvous missions and for retrieving satellites. Proximity operations on STS-7 are a preparation for the STS-13 solar max mission which will attempt to capture, repair and restore to operation the Solar Maximum Satellite launched on February 14, 1980.

JUNE 7, 1983

STS-7 landing site is the Kennedy Space Center (KSC), FL. All previous planned landing sites have been at Edwards Air Force Base (EAFB), CA. However, due to bad weather conditions the STS-3 spacecraft landed at Northrup Strip, NM. Lakebed landings at EAFB were done to checkout the orbiter and landing techniques in preparation for shorter concrete runway landings.

The RMS deploying and retrieving a satellite, SPAS proximity operations, and landing at a new site are significant first-time mission objectives.

Lead flight director for STS-7 is Tommy W. Holloway, who has served as flight director on four 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.

The Orbit 2 team flight director is John T. Cox. He was flight director during STS-4 and STS-5 for the Planning team and the Orbit 2 team, respectively.

Ascent and entry flight directors are Jay H. Greene and Gary E. Coen, respectively. Both were STS-6 flight directors.

Planning flight director is Lawrence S. Bourgeois. STS-7 will be Bourgeois' first mission with flight director responsibility. He was selected as a flight director in 1981 and had served as Chief of Ascent Flight Techniques where he supported the STS-2 and STS-3 missions and Chief of Orbit Techniques on STS-5 and STS-6. He has experience as a member of the flight control team.

As with previous Shuttle missions, three teams of flight controllers will alternate shifts in the MOCR with a fourth team designated as an offline, on-call, troubleshooting team. The MOCR facility provides centralized control of the spacecraft from launch to landing and is backed up by additional teams operating from nearby staff support rooms in which government and contractor employees monitor data for analysis and evaluation.

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 and data processing functions in the front row.

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

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

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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.

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

Personnel assignments to STS-7 flight control team follows:

<u>FUNCTIO.</u>	<u>ASCENT/ENTRY TEAM</u>	<u>ORBIT TE.</u> Orbit 1 (1st name) Orbit 2 (2nd name)	<u>PLANNING TEAM</u>	<u>TEAM 4</u>
Flight Director	Jay H. Greene (Ascent) Gary E. Coen (Entry)	Tommy W. Holloway John T. Cox	Lawrence S. Bourgeois	
Capsule Communicator	Roy D. Bridges (Ascent) Bryan D. O'Connor (Entry)	Jon A. McBride Guy S. Gardner	Mary L. Cleave	Terry J. Hart John E. Blaha
Operations Integration Officer	Kim W. Anson Kerry M. Soileau	Wayne B. Boatman	James E. Wallace	
Flight Activities Officer	Elvin B. Pippert	William R. Holmberg	Charles R. Knarr	Ben Ferguson
Payloads	James R. Gauthier	Debbie T. Pawkett	William J. Boone	Michael W. Hawes
Flight Dynamics Officer	Ronald C. Epps (Ascent) Willis M. Bolt (Entry)	Ronald C. Epps James E. I'Anson	Gregory T. Oliver	Willis M. Bolt
Trajectory Officer	Bradford H. Sweet (Ascent) Phillip J. Burley (Entry)	Bradford H. Sweet Ronald H. Cohen	Ronald C. Epps	Phillip J. Burley
Guidance Officer	Willard S. Presley	Willard S. Presley	Gayle K. Weber	Thornton E. Dyson
Booster Systems Engineer	Jerry L. Borrer	Jerry L. Borrer	Jerry L. Borrer	Jenny M. Howard
Propulsion Systems Engineer	Ronald D. Dittimore	Charles D. Young William Gerstenmaier	Richard N. Fitts	Ronald Dittimore

<u>FUNCTION</u>	<u>ASCENT/ENTRY TEAM</u>	<u>ORBIT TEAM</u>	<u>PLANNING TEAM</u>	<u>TEAM 4</u>
		Orbit 1 (1st name) Orbit 2 (2nd name)		
Guidance, Navigation & Control	Harold J. Clancy David W. Whittle	Charles K. Alford David W. Whittle	James C. Admanson	
Integrated Communication Systems	Edward I. Fendell	Granvil A. Pennington	Roberto P. Moolchan	Richard W. Rodriguez
Data Processing Systems Engineer	Andrew F. Algate	Andrew F. Algate Ernest E. Smith	Michael Darnell	Lizabeth A. Cheshire
Environmental, Consumables & Mechanical Systems Engineer	Jimmy S. McLendon	Jerry D. Pfleeger Charles T. Holliman	R. John Rector	Jimmy S. McLendon
RMS, Mechanical & Upper Stage Systems Officer	Rodney L. Lofton	William D. Reeves	Robert E. Anders	Dale E. Moore
Flight Surgeon	James S. Logan	Theodore E. Lefton		
Ground Control	Charles R. Capps (Ascent) Norman R. Talbott (Ascent) George M. Egan (Entry)	Don E. Halter John H. Wells	Julius M. Conditt Robert R. Marriott	

For Release

Jack Riley
RELEASE NO. 83-018

May 17, 1983

DEPUTY DIRECTOR NAMED

Robert C. Goetz has been named Deputy Director of the NASA Johnson Space Center, Houston.

A 21-year NASA employee, Goetz is currently Director for Structures at the space agency's Langley Research Center in Hampton, VA. His appointment will become effective on July 1.

Goetz will replace Clifford E. Charlesworth who has held the position since 1979. Charlesworth was made Director of Space Operations, one of three new top management positions created in a recent reorganization at the Houston center. JSC Director Gerald D. Griffin said the appointment of Goetz "adds strong technical leadership for our future research and development programs. At the same time, it allows Cliff Charlesworth to apply his extraordinary experience toward making the Space Shuttle a truly operational transportation system."

Goetz joined NASA in 1962 to conduct research in hypersonic aeroelasticity in the Dynamic Loads Division at Langley. He served in increasingly responsible technical positions there until 1979, when he was assigned to NASA Headquarters in Washington, D.C., to head up structures and dynamics research. He returned to Langley in 1980 as Special Assistant to the Chief, of the Structures and Dynamics Division where he was placed in charge of advanced research.

Goetz was born in Miami, Florida. He received a Bachelor of Science degree from Georgia Institute of Technology in 1959 and a Master of Science degree in Engineering Mechanics from Virginia Polytechnic Institute in 1967.

He is the author of over 30 publications and presentations on hypersonic aeroelasticity, Space Shuttle dynamics and aeroelasticity, dynamic loads and flutter. Goetz has received several awards, among them a Sigma Xi Award for his master's thesis and a NASA Exceptional Service Medal, presented in October 1981, "For outstanding contributions to Shuttle technology and for direction of a broad range of analytical and experimental (thermal tile) certification efforts for STS-1." He is an Associate Fellow of the AIAA.

Goetz and his wife, Josemarie, have two children.

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National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center

Houston, Texas 77058

AC 713 483-5111

Steve Nesbitt
Release No. 83 -019

For Release

IMMEDIATE

HAM RADIO TO FLY ON STS-9

While Spacelab, an international scientific research facility, orbits the Earth this fall on its first mission, there will be more than one communications network in touch with its crew.

Dr. Owen Garriott, a NASA mission specialist astronaut and amateur radio operator, will use a hand-held radio during part of his off-duty time to communicate with some of the thousands of "ham" radio operators around the world. Garriott's call sign is W5LFL.

Original proposals to place an amateur radio transceiver aboard an orbiting U.S. spacecraft surfaced when NASA was about to launch Skylab in the early 70s. NASA rejected the plan, then dubbed SKYLARC (for Skylab Amateur Radio Communications) because it came too late in the development of the program.

Space Shuttle flights presented another opportunity. The American Radio Relay League (ARRL) and the Amateur Radio

May 31, 1983

Satellite Corporation (AMSAT) jointly requested that NASA supply a small transceiver to be carried by Garriott, a ham operator since his teens.

NASA accepted the proposal with the stipulation that the plan would not interfere with mission activities and that safety requirements were met.

Crew members aboard the Spacelab 1 flight will work on a 12-hour-on, 12-hour-off schedule. Use of the transceiver will be limited to one hour a day.

All "ham" radio operations for STS-9 will be in the two-meter band. Transmissions will be in the range 145.51 MHz to 45.770 MHz FM. Reception will be in the range 144.910 to 145.470 MHz FM. Twenty kilohertz steps will be used to both transmit and receive.

The radio will be operated from the aft flight deck of the Space Shuttle orbiter Columbia, which is carrying the Spacelab in its cargo bay.

The transceiver itself will be a battery-powered unit capable of five watts of output. The printed-circuit antenna will be placed in the upper crew compartment window on the aft flight deck.

Garriott will wear the standard in-flight headset when operating the radio.

Most of the Earth's land mass will be within line-of-sight transmission of the spacecraft during a typical day. The Spacelab 1 mission will have an orbital inclination of 57 degrees. The

times when Garriott will communicate with "ham" operators will be announced later.

"Amateur radio is a valuable national, even international, asset and it is certainly appropriate that Spacelab be used to demonstrate this capability," said Garriott, who will operate Spacelab 1 systems and conduct many of its experiments during the mission. "I look forward with great enthusiasm to brief conversations with as many of my fellow hams around the world as our work schedule will permit."

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For Release

Terry White
RELEASE NO. 83-020

IMMEDIATE

SECOND RELAY SATELLITE DELETED FROM SHUTTLE FLIGHT 8 MANIFEST

The second in a series of Tracking and Data Relay Satellites (TDRS), that had been scheduled for launch aboard orbiter Challenger in August 1983, has been officially deleted from the eighth Shuttle flight cargo list.

The decision by NASA program managers to remove TDRS-B from the STS-8 cargo was based on the failure of the Inertial Upper Stage (IUS) solid rocket booster to propel the first TDRS to geosynchronous altitude after deployment from Challenger on April 4 during the STS-6 mission. Reasons for the IUS anomaly and final corrective actions are under continuing evaluation by a joint U.S. Air Force and NASA Anomaly Investigation Board.

Attempts are under way to gradually boost TDRS-A to the needed 22,300 miles circular orbit using the satellite's small attitude thrusters firing on commands sent by the TDRS ground station at White Sands, New Mexico. This effort has been highly successful to date and the TDRS orbit perigee has been raised to 18,559 statute miles as of May 27, 1983. This leaves 3,675 miles

May 27, 1983

of perigee altitude and 57 miles of apogee altitude remaining to place the satellite in its originally intended geosynchronous orbit.

A Payload Deployment and Retrieval System Test Article (PDRSTA), originally planned to be carried aboard Challenger on STS-11, will be loaded on STS-8 in place of TDRS-B. PDRSTA is a 15x16-foot, 8,500 lb. aluminum and stainless steel structure fitted with four grapple fixtures. The test article simulates a large-mass payload for flight testing the remote manipulator system or robot arm. The purpose of the tests are to evaluate elbow, wrist and shoulder joint reaction to higher loads and to gain crew experience in operating the 50-foot long Canadian-built mechanical arm.

Unaffected by STS-8 cargo changes is the Indian National Satellite 1 (INSAT-1), a communication and meteorological geosynchronous satellite being carried by Challenger for the Indian Department of Space. INSAT-1 will be boosted from Challenger's 174-nautical mile orbit to geosynchronous altitude by a Payload Assist Module-D (PAM-D), the type which successfully boosted a Canadian communications satellite and a Satellite Business Systems payload from STS-5 last November.

-end-

For Release

June 6, 1983

Brian Welch

Release Number 83-021

FIRST SHUTTLE CONFERENCE SET FOR JUNE

As many as 1,500 scientists, engineers and technical experts connected with the Space Shuttle Program are expected to gather at the Johnson Space Center in Houston June 28 to 30 for a conference seen as the definitive review of America's latest space flight project.

A total of 84 papers ranging across 15 fundamental disciplines associated with the Shuttle development program will be presented. Lt. Gen. James A. Abrahamson, NASA Associate Administrator for Space Flight, will present the keynote address during the opening session.

"The Space Shuttle Program: From Challenge to Achievement," is the conference theme, and papers will address the advances in such areas as avionics design and development; aerodynamic challenges faced during launch and entry; guidance, navigation and control; Shuttle structural design; life support, environmental control and crew equipment; ground operations; propulsion and power; communications and tracking; mechanical systems; and thermal environments associated with the orbiter's flight regime.

The General Chairman for the conference is Aaron Cohen, Director of Research and Engineering at the Houston Center. JSC Director Gerald Griffin will deliver the welcoming remarks at the opening session.

Abrahamson's keynote address will focus on the challenges faced during the design, development and testing that led to the operational Shuttle system. His speech will be followed by a plenary session with the key Space Shuttle development managers led by former JSC Director of Engineering and Development Dr. Maxime A. Faget.

The afternoon of the first day and the two subsequent days will feature three parallel technical sessions running in three buildings on the central campus of the space center.

From 6 to 9 p. m. June 28, attendees will gather for a dinner at the Gilruth Center with Dr. Glynn Lunney, Manager of the National Space Transportation Systems Program, as the featured speaker.

From 11:30 a.m. to 12:30 p.m. June 29, a luncheon will be held at the Gilruth Center with Donald K. "Deke" Slayton, former astronaut and Shuttle Orbital Flight Test Manager, as the featured speaker. Members of the news media may attend both the diner and the luncheon. Cost for the dinner is \$15, and the luncheon cost is \$8. Reservations should be made before June 23 by calling (713) 483-3995.

A summary of the conference sessions is attached.

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SPACE SHUTTLE PROGRAM TECHNICAL CONFERENCE

"FROM CHALLENGE TO ACHIEVEMENT"

THE CHALLENGE

TUESDAY, JUNE 28, 1983 - BUILDING 2 AUDITORIUM

9:00 a.m.	Opening Remarks	Mr. Aaron Cohen
9:10	Welcome	Mr. Gerald D. Griffin
9:20	Keynote Address	Lt. Gen. James A. Abrahamson
9:45	"The Challenge"	Dr. Maxime A. Faget and Panel

THE ACHIEVEMENT

Parallel Technical Sessions - 10 Topic Areas - 84 Papers

<u>DATE/TIME</u>	<u>BUILDING 2 AUDITORIUM</u>	<u>BUILDING 30 AUDITORIUM</u>	<u>BUILDING 7 AUDITORIUM</u>
Tuesday 6/28/83 1:00-4:00pm	Aerodynamics #1	Ground Operations #1	Life Support, Environmental Control and Crew Station
Wednesday 6/29/83 8:30-11:30am	Integrated Avionics #1	Propulsion & Power #1	Communications & Tracking
Wednesday 6/29/83 1:30-4:30pm	Mechanical Systems #1	Aerodynamics #2	Ground Operations #2
Thursday 6/30/83 8:30-11:30am	Structures	Integrated Avionics #2	Propulsion & Power #2
Thursday 6/30/83 1:00-4:00pm	Thermal, Contamination Environments, Protection Systems	Guidance, Navigation & Control	Mechanical Systems #2

Social and Dinner, Tuesday, June 28 (Speaker, Dr. Glynn Lunney) - \$15
6pm - Gilruth Center

Luncheon, Wednesday, June 29 (Speaker, Dr. Donald K. Slayton) - \$8
12 noon - Gilruth Center

For reservations, please call Norm Chaffee's office, EP, X3995, by noon June 23, 1983.

For Release

TERRY WHITE

RELEASE NUMBER 83-022

JUNE 6, 1983

PHILDELPHIA HOSPITAL TO DEVELOP SPACE PROTEIN EXPERIMENT

The NASA Johnson Space Center, Houston, Texas has signed a cost reimbursement contract with The Graduate Hospital, Philadelphia, Pennsylvania to develop a Space Shuttle life sciences experiment on protein metabolism during space flight.

Under the contract, estimated to cost \$1,057,940, The Graduate Hospital will develop the experiment, provide supporting studies, crew training, payload testing and postflight data analysis under the technical management of the JSC Space and Life Sciences Directorate. The contract runs from March 1, 1983 to October 31, 1986.

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For Release

Brian Welch
Release No. 83-023

Immediate

STS-7 CREW'S HOUSTON WELCOME TO BE HELD ON JSC GROUNDS

Welcoming ceremonies for the STS-7 crew on their return to Houston will take place about mid-afternoon in front of Building 1 on the grounds of the Johnson Space Center following their Florida landing June 24.

The Orbiter Challenger is scheduled to touch down on the Shuttle Landing Facility at the Kennedy Space Center shortly before 6 a.m. CDT Friday after 96 orbits of the Earth. The crew will leave Florida about four hours after landing and arrive in Houston approximately early to mid-afternoon.

The welcoming ceremony will take place on the north side of Building 1, adjacent to the Building 2 News Center. JSC Director Gerald D. Griffin will welcome the crew and each of the crew members are expected to make brief remarks.

Accommodations will be made for the news media to cover this event. No return activities are scheduled at Ellington Air Force Base.

June 21, 1983

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National Aeronautics and
Space Administration

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

For Release

IMMEDIATE

Charles Redmond
Headquarters
Washington, D.C. 20546
(phone: 202-755-3056)

Steve Nesbitt
Johnson Space Center
(phone: 713-483-5111)

Release No. 83-024

NOTE TO EDITORS:

This Space Adaptation Syndrome fact sheet contains information on the historical perspective of space "motion sickness" and implications of these symptoms on current research activities and Shuttle operations.

This information is provided by the NASA Headquarters Life Sciences program office. Charts referenced in the text are located at the end of the document.

June 22, 1983

3.0 Occurrence of the Space Adaptation Syndrome During STS Missions 1-6

3.1 Data Collection Procedures

Because of its complexity and uniqueness this biomedical problem cannot be resolved solely with ground based research. The agency has acknowledged that it is essential that data be collected systematically on individuals who fly Space Transportation System (STS) missions in order to obtain final and valid solutions.

A Detailed Supplemental Objective (DSO) was developed to initiate this data collection process with the first six STS missions. A primary purpose of this DSO was to conduct inflight observations, supported by a series of preflight and postflight data collection procedures, on the crewmembers in an effort to begin validating ground based tests which may be predictive of susceptibility to the space adaptation syndrome. An additional objective was to implement crew testing procedures which would enable acquisition of data to be used in validating countermeasures for the syndrome.

Part of the required crew preflight activity was based on guidelines set forth in NASA's medical operations policy for the prophylaxis and treatment of space motion sickness with anti-motion sickness drugs. This policy states that astronauts with a positive history of space sickness or with no space flight experience will be premedicated with a properly selected anti-motion sickness drug. Premedication is operationally defined as taking the prescribed drug either prior to launch or immediately after the inflight "OMS 1" orbital correction maneuver. The "OMS 1" maneuver occurs about 10 minutes after orbit insertion. The policy further states that astronauts who have flown in space with no symptoms of space sickness are not required to be premedicated. Any individual who experiences space motion sickness will be administered appropriate inflight treatment with anti-motion sickness drugs. The policy requires preflight side effects screening and efficacy testing with one or more anti-motion sickness medications.

During the early preflight period each of the crewmembers was asked to complete a questionnaire designed to elicit pertinent information regarding past experiences with various types of motion environments and responses to those environments.

Approximately three to six months before flight each of the crewmembers were tested at least one time for susceptibility to experimentally induced motion sickness in the Johnson Space Center (JSC) Neurophysiology Laboratory. The standard Coriolis Sickness Susceptibility Index (CSSI) test was used. This procedure requires the performance of head movements while rotating at a constant velocity in a servo-controlled chair. This test served two purposes. First, it provided a ground based susceptibility data point against which inflight susceptibility could be compared. Second, it provided a baseline for subsequent evaluations of anti-motion sickness drug efficacy. During this test session the crewmembers were instructed on the self-recognition and reporting of motion sickness symptoms. They were also instructed on the use of a microcassette recorder and symptom checklist which were to be used inflight for symptom reporting.

In accordance with the medical operations policy for the use of anti-motion medications, all of the crewmembers were screened for side effects with one or more medications. This screening was typically done under operational conditions. For example, the crewman would use a medication while working in the Shuttle simulator. Verbal reports of any side effects experienced were given to the crew surgeon and documented. The medication most frequently evaluated in this fashion (and the most preferred medication) was oral scopolamine (0.4 mg) plus dexedrine (5.0 mg). A recently developed transdermal (skin patch) method of administering scopolamine was evaluated by a few crewmen.

Crewmen who were required to be premedicated for flight were tested in the Neurophysiology Laboratory to evaluate the efficacy of the preferred medication in preventing or minimizing motion sickness. The CSSI test procedures described above were used. In a few cases where the initially preferred medication produced questionable results, the test was repeated with the same medication or a different medication. A minimum of two weeks was maintained between the rotating chair tests to minimize adaptation effects.

A microcassette tape recorder and symptom checklist were stowed onboard the Shuttle Orbiter. The flight crewmen were required to use the recorder and checklist during a designated time (pre-sleep period) each mission day to debrief on any symptoms or sensations that had been experienced. Questions pertaining to motion sickness and vestibular sensations were also asked of each crewman on the day of landing and during the postflight medical debriefing.

3.1 Findings

The motion experience questionnaire indicated that all of the crewmembers had a minimal history of susceptibility to terrestrial forms of motion sickness. The questionnaire revealed that a few crewmen had experienced some motion sickness symptomatology during past exposures to aerobatic flight, parabolic flight, and heavy sea conditions. The questionnaire results did not correlate with the actual incidence of space sickness symptomatology.

The preflight CSSI test results and occurrences of space motion sickness are summarized in Table 2. As indicated in this table, seven of the sixteen crewmen reported symptoms that were interpreted as being space motion sickness (space adaptation syndrome). The average preflight CSSI scores for the seven crewmen who experienced symptoms and those who did not were 25.4 and 37.6, respectively. (The CSSI has a scale of 0-100 where higher scores mean greater resistance to motion sickness. By way of contrast the average CSSI score for a population of non-astronauts at the Johnson Space Center is 13.5).

The preflight CSSI scores are positively correlated with susceptibility to space motion sickness, however, the data are not statistically significant.

Predominant symptoms reported by the crewmen are summarized in Table 3. Of the seven crewmen who experienced space motion sickness, six reported

one or more episodes of vomiting. The vomiting often occurred abruptly and generally resulted in a noticeable diminution of symptoms. Complete recovery from symptoms always occurred in 36-72 hours.

Twelve of the sixteen crewmen utilized oral scopolamine plus dexedrine as a prophylactic medication. In all but two of these cases the medication was taken after the "OMS 1" maneuver. Seven of these same crewmen experienced some degree of space motion sickness. One crewman used the transdermal scopolamine skin patch (applied 12 hours pre-launch) and reported no inflight symptomatology. Nine crewmen used an additional dose or doses of anti-motion sickness medication on mission days 1, 2, or 3.

In assessing the effectiveness of medications utilized, it must be recognized that the medications were taken after the OMS 1 maneuver and may have had insufficient time to reach a therapeutic level before the crewmen were stressed. Orally administered scopolamine normally requires 60-90 minutes to reach its peak effectiveness. Some crewmen were already beginning to move about in the vehicle within that period of time. On the basis of available data it cannot be determined whether or not the crewmen would have had more severe symptoms if they had not used anti-motion sickness medication. Verbal reports from the crewmen suggest that the medication was having some positive effect. Clearly, additional ground based and flight data must be collected to establish more efficient drugs and drug administration strategies.

None of the crewmen experienced any motion sickness or other unusual vestibular sensations post-landing. With one documented exception, no vestibular disturbances were experienced as a result of exposure to gravito-inertial forces during re-entry and landing. The same crewman reported a transient vertigo during re-entry. This incident, plus general concerns about the potential impact of space adaptation syndrome on STS operations, gave impetus to a special series of detailed test objectives (DTO's) which were implemented on STS missions 5 and 6.

4.0 Alterations to Mission Timelines Induced by the Space Adaptation Syndrome

On the basis of available information, an absolute and definitive statement of the effects of the space adaptation syndrome on mission operations and crew performance cannot be made. No quantitative testing of crew performance has been conducted during any of our past space flights. Also, specific and complete information on meaningful mission timeline alterations induced by space adaptation syndrome is not readily available.

In general, however, it is known that the overall impact of this syndrome on mission operations in the U.S. space program has been minimal. Planned crew activities on only four missions (about 10% of all flights to date) have been altered by the space adaptation syndrome. A planned EVA on Apollo 9 was postponed one day in order to allow the crewmember scheduled to do the EVA an opportunity to fully recover from symptoms. The crew of the Skylab 3 mission went into a "powered-down" mode (i.e., reduced their workload) during approximately the first 36 hours of flight because of space adaptation syndrome symptomatology. A scheduled light work load day was swapped with a busy work load day to allow the crew of

the STS-3 mission to overcome symptoms. Lastly, a planned EVA on STS-5 was postponed one day to ensure that an affected crewman was fully recovered from symptoms of space adaptation syndrome. (The STS-5 EVA was ultimately cancelled not because of crew health, but because of failures in both EVA suits.)

None of the four events cited above had a deleterious impact on the successful accomplishment of mission objectives. Likewise, on all other missions where space adaptation syndrome symptomatology occurred, no degradation in mission objectives occurred despite the fact that the operational efficiency of affected crewmembers was probably impaired by some unknown amount. A significant factor is that with larger, cross-trained crews on STS, temporary performance inefficiencies experienced by part of the crew can be compensated for by other unaffected crewmembers. Such trade-offs may not be possible if the entire crew is moderately to severely affected by space adaptation syndrome symptoms. On the basis of past experience the likelihood of an entire STS crew being affected is remote.

5.0 R & D Programs Designed to Develop Solutions for the Space Adaptation Syndrome

Despite the fact that no medically serious consequences have occurred to date, this syndrome and its effects on crew performance, has the potential to disrupt mission timelines, EVA activities and possibly safe landing of the STS. Therefore, the Agency has undertaken a vigorous research and development program to define the physiological and behavioral mechanisms underlying this syndrome, to develop predictors of susceptibility and to develop operationally acceptable countermeasures. This program involves investigators at the Johnson space Center, the Ames Research Center and dozens of specialists at universities and medical centers throughout the U. S.

5.1 Mechanisms

A variety of studies with humans and animals have clearly indicated that the vestibular, visual and proprioceptive systems are the primary receptors implicated in motion sickness. With this knowledge a number of investigators are examining various aspects of the predominant theory of motion sickness, the sensory conflict theory. As illustrated in figure 1, this theory postulates that as a result of past experience, neural stores in the brain associated with these receptor systems are programmed to react in a predetermined manner to specific environmental stimuli. If the current stimuli correlate with established neural patterns, the response is normal. If, on the other hand, the stimuli conflict with those stored neural patterns, a neural mismatch, or what many scientists refer to as sensory conflict, occurs. Various kinds of sensory conflict are thought to be provocative. Examples of such conflict include that which can exist between inputs from the visual and vestibular systems or between inputs from the semicircular canals and the otolith apparatus. It is this latter type of conflict that is thought to be most important in the generation of space motion sickness.

A second hypothesis for explaining the cause of the space adaptation syn-

drome is referred to as the fluid shift hypothesis. This hypothesis holds that the headward movement of fluid which occurs at the onset of weightlessness, results in an increase in cranial venous pressure and thereby alters the responses of the vestibular receptors. Although the evidence is not strong that fluid shifts are a primary causative factor, they may play a role in amplifying the effects of sensory conflict or in increasing the level of susceptibility by changing the biochemical environment of the brain.

5.2 Prediction

Because the space adaptation syndrome has the potential to seriously reduce the efficiency of STS crewmembers it is important to predict individual susceptibility to the problem. At this time there are no procedures to accurately do so. Scientists at the Johnson Space Center and Ames Research Center are working to develop ground based modalities for prediction of susceptibility. With the ability to predict susceptibility appropriate countermeasures can be applied to avoid potential inflight problems. Two possible predictors under investigation are: motion sickness susceptibility studies and behavioral/physiological adaptability.

The motion sickness susceptibility studies are a group of interrelated inquiries. Chief among them are various provocative tests that produce disorientation and motion sickness. Possible correlations between the tests are being examined.

Closely related to the provocative tests are studies that evaluate the relationship between susceptibility and other vestibular responses, like semicircular canal response dynamics and vestibulo-spinal reflexes. Non-vestibular responses that are psychological, biochemical or hormonal in nature are also being examined.

Other investigations focus upon behavioral/physiological adaptability. Studies are based on the premise that some individuals can adapt to stressful or novel environments rapidly while others adapt at a slower pace. Slow adapters may be less able to resolve the sensory conflict that occurs in 0-g and therefore may be more susceptible to the space adaptation syndrome.

An integral part of these studies is the KC-135 aircraft. It is used to evaluate the validity of ground based tests for predicting susceptibility to space adaptation syndrome during the 0-g phase of parabolic flight. If it can be demonstrated that ground based tests can predict susceptibility aboard the KC-135, then it is possible that these same tests can predict susceptibility in space flight.

5.3 Countermeasures

Part of the maintenance of performance efficiency as well as the health of future astronauts depends upon the development of dependable countermeasures for the space adaptation syndrome. A wide range of studies dealing with the prevention and treatment of the problem are in progress. These investigations include: medication, vestibular

adaptation training and autogenic feedback training, as well as techniques for minimizing head and body movements.

Drugs that either prevent the onset of motion sickness or those that treat acute symptoms are under investigation. At this time, the emphasis is on preventive drugs.

Medications categorized as preventive are administered orally, transdermally or by absorption through the oral mucosa to subjects whose susceptibility to motion sickness has been established by various provocative tests or actual flight experience. Behavioral and physiological side effects are closely monitored through observation, reports from test subjects, and analysis of blood and urine. Through the efforts of the Biomedical Laboratories Branch at the Johnson Space Center a new, more sensitive technique has been developed for measuring blood levels of some of the drugs used in these studies. Methods have also been developed to measure the effects of these drugs on performance.

Scientists are also studying the use of natural substances for the prevention of space motion sickness. Operating on the premise that certain levels of chemicals in the body affect neural transmitters in the brain and vestibular pathways, researchers are examining ways in which dietary supplements might modulate the neural transmitters and in turn prevent motion sickness.

Work in the area of drugs that treat symptoms of motion sickness centers and upon substances that can be administered in the form of intramuscular injection, buccal or sublingual tablet is being done. These medications must quickly reduce symptoms, but without side effects that would adversely affect the performance of a crewmember.

Several alternative methods for reducing or preventing the space adaptation syndrome are currently under study.

One of the methods is vestibular adaptation training. Subjects with a history of motion sickness gradually acquire a tolerance to one type of motion environment. Once this is established they undergo ground based provocative tests and parabolic flight to discover if they can transfer the adaptation acquired in one motion environment to other motion environments. Then, over a period of months, they are retested to assess how well this adaptive training is retained. This study will help to determine how quickly future astronauts adapt to different motion environments as well as their ability to transfer and retain this type of instruction.

Other techniques under development at the Ames Research Center for combatting the space adaptation syndrome are biofeedback and autogenic therapy. The end result of both these methods is self-regulation of physiological responses. Using the biofeedback method, a subject can learn to consciously control normally involuntary processes with the aid of constant feedback from external biomedical instrumentation displays. In contrast, autogenic therapy uses no external feedback, but consists of a series of self-suggested exercises designed to elicit specific physiological responses.

By combining the two techniques, a new method called autogenic feedback training is emerging. In some individuals it effectively suppresses motion sickness symptoms through autogenic therapy exercises which provide the subject with specific instruction for the desired responses, and biofeedback which gives the subject immediate evaluation of his performance. Therefore, the time spent by a subject learning the desired response by trial and error is reduced and the probability of his making a correct response is increased.

Biofeedback, autogenic therapy and autogenic feedback training are under investigation singly and in combination in order to determine which technique is the most effective.

During space flight, crewmembers have reported experiencing nausea and/or spatial disorientation during the first few hours to days of a mission when head or body movements were too rapid. Thus, scientists are exploring techniques for minimizing these movements with various head and neck restraints which will reduce movements as well as vestibular input.

As research in this area continues, investigators will be studying a number of questions, including which head movements are the most provocative, the velocity at which these movements become provocative and what postural orientations are the most stressful. They will also study the role of visual cues in the elicitation of the space adaptation syndrome in order to develop techniques to minimize or eliminate the disorientation experienced by some individuals during space flight.

Of primary importance in developing methods for the prevention and treatment of the space adaptation syndrome are the health and efficiency of crewmembers. To this end, the countermeasures, whether used alone or in combinations, must be relatively fast acting but cannot inhibit the ability of a crewmember to perform tasks.

6.0 Future Directions

Although past research and development activities have yielded a great deal of information applicable to the space adaptation syndrome, a definitive solution to this vexing problem is needed at the earliest possible time. To this end, steps are now being taken to develop an accelerated program that will provide more focus on the current efforts and that will address certain areas that have hitherto received insufficient attention. The plan will include among its objectives the following major thrusts:

1. The development of more effective predictive indices.
2. The development of new and better drugs.
3. The development of more efficient preflight adaptation procedures.
4. The development of improved ways to manage symptoms.
5. The testing of "Biofeedback" by crewmembers on Shuttle flights.
6. The investigation of diet as a possible ameliorative measure.
7. An evaluation of performance effects induced by space adaptation syndrome and anti-motion sickness drugs.
8. The development of methods for the early detection of incipient symptoms.

9. The possible use of mechanical countermeasures such as neck fixating/compressing devices.
10. The more intensive use of data obtained during Shuttle flights and the rapid use of such data for the planning of subsequent missions.
11. The acquisition of additional inflight opportunities with more subjects and more sophisticated equipment to validate and extend the results of ground-based research.

The implementation of these objectives will require the establishment of facilities that do not now exist and the acquisition of additional personnel. The new facilities will include extensive ground simulation equipment, such as rotatory and linear accelerators as well as analogous flight equipment such as sleds, rotators and a triaxial centrifuge for the use of animal surrogates.

As part of the overall program, an effort will also be made to identify whatever new research to alleviate the problem might be accomplished with the Shuttle. Ideas will be sought from the community of neurophysiologists for experiments or lines of investigation that might lead either toward an immediate solution or to an understanding that will facilitate an eventual solution. Data obtained from Shuttle flights will be continuously examined in the expectation that it will provide clues for the more satisfactory management of subsequent flights. Because of the urgency of the problem, all on-going research, whether sponsored by NASA or by other organizations will be constantly scrutinized for developments that might contribute to a solution. With this as an objective, conferences, workshops, and scientific exchanges will be organized to marshal available data in the most timely and effective manner.

7.0 Select References

- A. A. Nicogossian & T. Parker. Space Physiology & Medicine, SP-447, 1982.
- B. Biomedical Results of Apollo. NASA SP-368
- C. R. S. Johnson and L. F. Dietlein. Biomedical Results of Skylab, NASA SP-377.
- D. J. T. Reasen and J. J. Brand. Motion Sickness, London Academic Press, 1975.

SPACE SICKNESS

DURING U.S. MANNED SPACE FLIGHT PROGRAMS

PROGRAM	NUMBER OF CREWMEN	INCIDENCE OF REPORTED SYMPTOMS
MERCURY	6	0
GEMINI	20*	0
APOLLO	33*	11**
SKYLAB	9	5
ASTP	3	0

- INCLUDES 4 CREWMEN WHO FLEW TWICE DURING PROGRAM
- INCLUDES 1 CREWMAN WHO EXPERIENCED SYMPTOMS ON BOTH OF TWO FLIGHTS

TABLE 1

**SPACE ADAPTATION SYNDROME SYMPTOMS
REPORTED BY CREWS OF STS MISSIONS (16 INDIVIDUALS)**

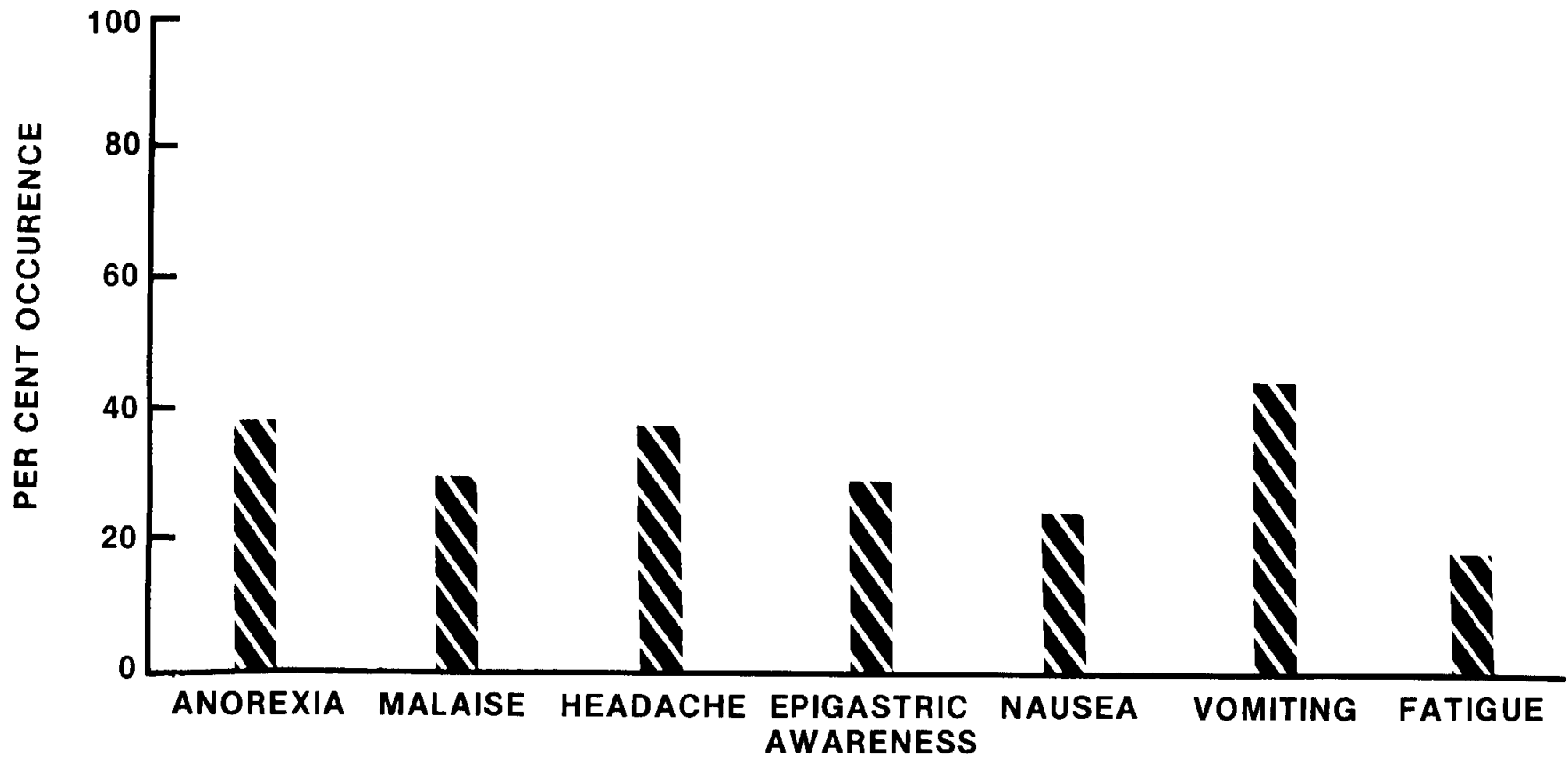


TABLE 3

PREFLIGHT CSSI TEST VS. INFLIGHT SMS* (STS MISSIONS 1-6)

*SPACE MOTION SICKNESS

	<u>YES</u>	<u>NO</u>
N	7	9
% OF TOTAL	44	56
 <u>CSSI SCORE:</u>		
RANGE	8.4-64.5	11.2-90.0
\bar{X}	25.4	37.6
S.D.	18.8	24.7
P (ONE-WAY ANOVA)	.3	

TABLE 2

-more-

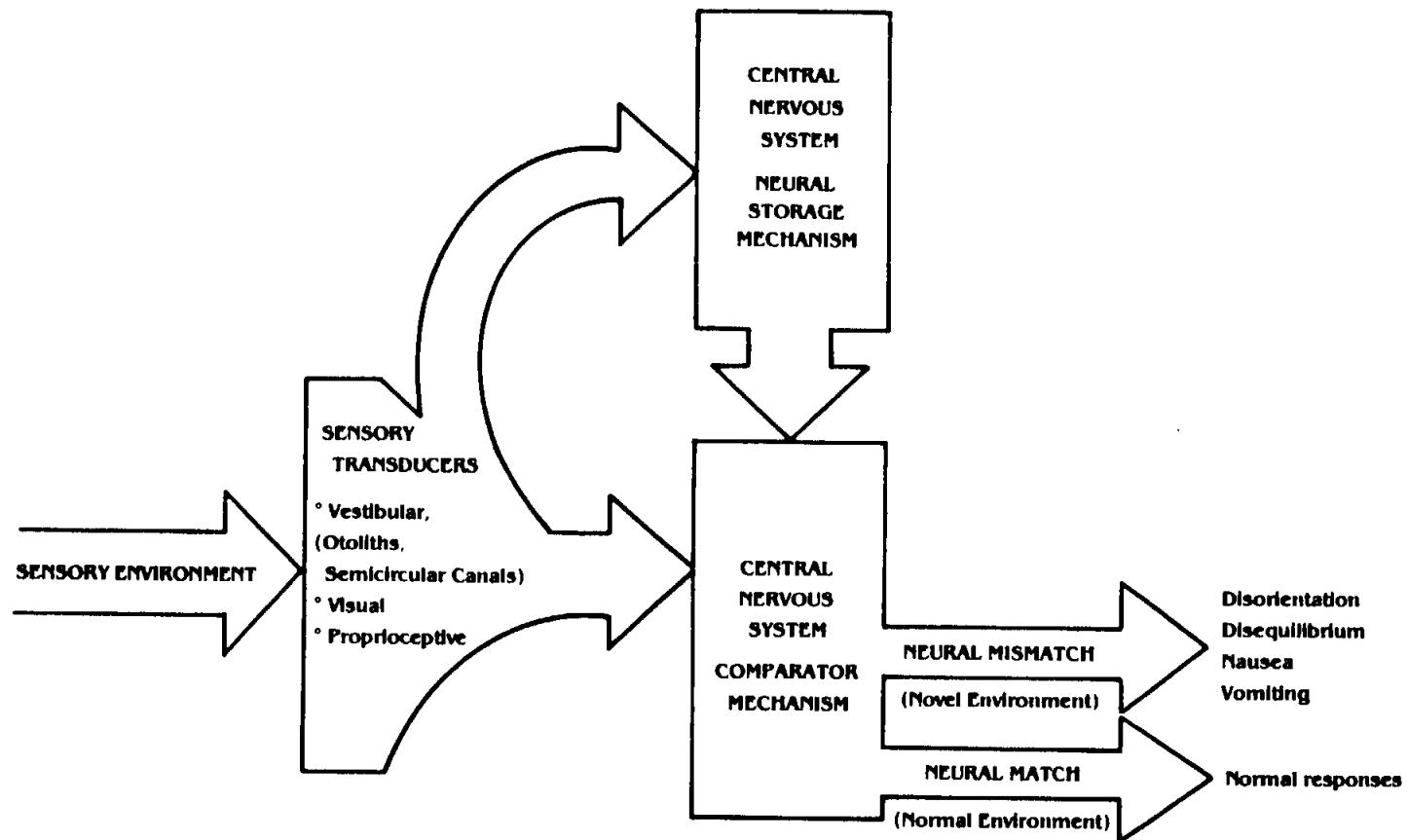


FIGURE 1

NASA-JSC

-end-

NASA News

National Aeronautics and
Space Administration

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



For Release

John Lawrence
NEWS RELEASE No. 83-025

June 24, 1983

NOTE TO EDITORS

A post-flight news conference with STS-7 astronauts Robert L. Crippen, Frederick H. Hauck, John M. Fabian, Sally K. Ride and Norman E. Thagard will be held 1 p.m. Friday, July 1, in the Teague Visitors Center auditorium, Johnson Space Center, Houston

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For Release

John Lawrence
RELEASE NO. 83-026

June 29, 1983

PAYLOAD SPECIALIST NAMED

The National Aeronautics and Space Administration today named Charles D. Walker payload specialist for the Shuttle's twelfth flight in March 1984. Walker, an engineer at McDonnell Douglas Astronautics Company in St. Louis, will be the first payload specialist to represent a project designed for commercial purposes.

As payload specialist, his job will be to run the materials processing device developed by McDonnell Douglas as part of its Electrophoresis Operations in Space project. This project is aimed at separating large quantities of biological materials in space for ultimate use in new pharmaceuticals.

Walker will join NASA crew members commander Henry W. Hartsfield, pilot Michael L. Coats, and mission specialists Judith A. Resnik, Steven A. Hawley, and Richard M. Mullane for the mission.

For the STS-12 flight, the current device which as flown three times will be reconfigured. In this new configuration, the device will operate continuously throughout the mission to produce sufficient material for clinical testing.

Mr. Walker joined McDonnell Douglas in 1977 and has worked on the EOS project since its beginning in 1978. He is currently chief test engineer for the project with responsibility for space flight testing and evaluation. He has also been involved with the project support efforts at Kennedy Space Center and at Mission Control Center, Houston. Walker has trained the NASA astronauts who have operated the EOS device for research on earlier Shuttle missions.

A native of Indiana, Walker was born in 1948. He received his Bachelor of Science degree in Aeronautical and Astronautical Engineering from Purdue University in 1971.

#

Dave Alter
RELEASE NO. 83-027

For Release
July 7, 1983

JSC to Test New Computer Language

A language to replace thousands now spoken by military and aerospace flight-type computers is being evaluated jointly by scientists and software linguists at NASA's Johnson Space Center and the University of Houston at Clear Lake City.

Ada, a single common high-order language, was developed by the Department of Defense (DOD) to replace more than 2,000 of its software dialects or tongues spoken by permanently-installed, embedded military computers. The DOD will make the language available to NASA and the aerospace industry.

Computers do not understand English. They converse in software such as HAL/S, which is the Space Shuttle language, or FORTRAN, COBOL and numerous others that require mathematics, symbols or letters. Although many times more complex, Ada is designed for the future -- space stations, NATO defense systems and craft of the 1990s.

Johnson Space Center was selected as NASA's Ada beta test site to evaluate the new language under a joint NASA-DOD cooperative agreement. The Center is assisted by the University of Houston's High Technology Laboratory under an approximate \$100,000 one-year contract.

If Ada becomes the universal aerospace computer language, permanently-installed Army, Air Force, NAVY and NASA computers will be able to converse with the same software, eliminating the need for complex and costly duplicate programming since software will be interchangeable.

When evaluation has been completed at JSC in about two years, all new flight-type software may be programmed to speak Ada.

The language was named Ada in honor of Augusta Ada Byron, the countess of Lovelace and daughter of Lord Byron. She is credited with programming the first known calculating machine, a numerical mechanical system invented by Charles Babbage in 1832.

#

For Release

John Lawrence
RELEASE NO. 83-028

July 7, 1983

NOTE TO EDITORS

A pre-launch news conference with STS-8 astronauts Dick Truly, Dan Brandenstein, Dale Gardner, Guy Bluford, and Bill Thornton, will be held at Johnson Space Center, Houston, at 1 p.m. Wednesday, July 13.

The previous day, Tuesday July 12, will feature a series of background briefings on technical aspects of the mission and experiments. First among these will be a flight plan briefing at 10 a.m. with Harold Draughon, lead flight director.

#

For Release:

Dave Alter
RELEASE NO. 83-029

July 12, 1983

GANEF, the Robot, Sends Choochoo to the Carbarn

Harry Erwin's laser-docking choochoo train may be headed for the carbarn, a victim of progress and a slick, one-armed robot named GANEF.

It was Erwin, head of NASA's Johnson Space Center Microwave and Laser Section, who introduced a toy train in 1980 as an inexpensive solution to perfecting rendezvous and docking for future spacecraft.

Its engine had a tall smoke stack that sported a bicycle reflector, necessary to return the laser beam. It was the best and cheapest way to test a laser system's ability to measure speed and distance between two moving targets. The test was successful.

But a train follows a track, moving forward and back. Needed was a maneuverable device to play the role of an angled target -- one that could move in more directions, at any angle, and toward the source of the laser, reflecting the beam back to its source.

Erwin, who delights in simplicity, studied mission simulators then decided on a do-it-yourself robot and persuaded NASA procurement to furnish a Heathkit for little more than the cost of an electric typewriter.

Erwin's staff assembled the robot, adding dexterity, maneuverability, improved his diction, vocabulary and computer memory.

Then, they named him GANEF, acronym for Ground Actuated Nonpareil Experimental Fetcher.

Less than three feet tall, GANEF rolls silently on electronic command from his corner niche, telescopic arm at rest. Three fist-size retroreflectors adorn his chest plate, replacing the single bike reflector that guided the train. GANEF's sing-song raspy voice announces, "Ready!" The laser docking test begins.

As may some day occur in space, a pencil-thin infrared laser begins a "rasterscan", its harmless narrow beam methodically slashing the air until it locates and locks on to a target retroreflector on GANEF's chest.

The beam then seeks out the two additional reflectors, measuring distance and angle in fractions of a second to determine position and attitude.

GANEF is playing the role of a satellite, lining up by laser to be guided along the same plane toward the docking mechanism. The angle and distance of the three retroreflectors enter the guidance and navigation computer. Motors, responding to computer

guidance, keep GANEF on track. A computer provides a continuous readout of distance and closing speeds accurate to a centimeter.

"We are perfecting a fully-automatic close-in docking space technique never done before," Erwin said.

Among the most difficult and necessary maneuvers in space is the "soft dock", said Erwin: the vehicle pulls in close, but does not make contact since a 5,000-pound satellite could be disoriented by the inertia of a docking 200,000-pound Shuttle orbiter.

Unlike Apollo command and lunar modules which banged together to connect, Erwin is aiming for a soft dock.

Erwin predicts free-flying robots and satellites will carry the laser docking and sensing innovation to dock with other high flying satellites, or while returning from high orbits to rendezvous and dock with Shuttle, which cannot achieve 22,000-mile stationary orbit.

"Laser sensing will become the eyes of the robots," said Erwin. "And with fiber optics, we can even provide GANEF with the sense of touch."

To which GANEF commented: "Ready!"

#

For Release:

Brian Welch
Release No. 83-030

July 20, 1983

BALLOON MEET TO CELEBRATE SPECIAL YEAR IN AIR & SPACE

A score of hot air balloons, the vehicles of the 18th Century's first aviators, will fly past a Saturn V rocket, the vehicle of the 20th Century's moon-walking astronauts, as disparate images from the world of flight help celebrate a special year in air and space.

The Bicentennial Balloon Meet '83, to be held at the Johnson Space Center August 13 and 14, will help commemorate the dual anniversaries of the first manned flight in 1783 and 25 years of space exploration. The meet also will benefit the United Cerebral Palsy campaign.

JSC Director Gerald Griffin called the balloon meet a fitting tribute to human innovation and ingenuity, linking 200 years of progress in aviation to the 25th anniversary of U.S. space exploration. "We hope the event will provide a visual reminder of how the first tentative steps into a new realm with new technology have led us to unimagined progress for the benefit of mankind," he said.

Between 50 and 100 balloonists will take to the skies in three ascensions from the 550-acre field adjacent to the Rocket Park at JSC. America's official balloon for the 200th anniversary of manned flight, the "Freedom," will participate in the event.

The U.S. Congress has designated 1983 as the Air and Space Bicentennial, marking man's first flight in a hot air balloon in France in November, 1783. President Ronald Reagan and Vice President George Bush are honorary chairmen of the U.S. Air and Space Bicentennial Committee, which has sanctioned the JSC meet as an official bicentennial event.

Sponsors plan three balloon launches during the weekend, two on Saturday at dawn and dusk and one at dawn Sunday. Balloon entries will be sponsored by local and national corporations and individuals, with proceeds from entry fees benefitting United Cerebral Palsy. U-Tote-Um, a national contributor to the campaign, will spearhead fundraising activities. Individual balloonists enter at a nominal fee and may carry a sponsor's banner. Sponsorships range from \$250 to \$2,500.

The balloon meet is free to the public on both days. Visitors should enter the Johnson Space Center through the main gate off NASA Road One, and are welcome to tour facilities at the Center during their visit. Regular offerings from 9 a.m. to 4 p.m. each day include the Rocket Park, where a Saturn V, a Mercury Redstone and a Little Joe rocket are located; the Bldg. 2 Visitor Center where various artifacts from the space program are on display; mockups of a lunar lander, the Skylab orbital

workshop and the Space Shuttle; and a tour of the Mission Control facility.

The Nassau Bay Hilton will serve as headquarters hotel for pilot briefings and fundraising functions.

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NOTE TO EDITORS: Although sponsors believe the best vantage points for photography will be from the ground or a helicopter (one will be available), there may be opportunities for news media representatives to go aloft in balloons, weather and pilot discretion permitting. There will be an advance photo opportunity July 24 when three balloons will be tethered near the Saturn V during activities associated with the Spaceweek celebration, and photographers are welcome. For the meet itself, news media representatives interested in covering the event should contact the JSC Public Information Office at (713) 483-5111 or Dyer International, the public relations firm representing fundraisers and commercial sponsors, at (713) 521-2702.

Terry White

For Release

RELEASE-NO.83-031

JULY 25,1983

NASA NEGOTIATES WITH LOCKHEED
FOR WHITE SANDS SUPPORT CONTRACT

The NASA Lyndon B. Johnson Space Center, Houston, Texas has selected Lockheed Engineering and Management services Company, Inc. of Houston for negotiations leading to a cost-plus-award-fee contract for support services at the JSC White Sands Test Facility near Las Cruces, New Mexico.

Running from February 1, 1984 through January 31, 1985, the first-year contract will be valued at approximately \$17.8 million and will have four one-year extension options. Total value of a five-year contract is approximately \$95.1 million.

Under the contract, Lockheed would perform propulsion testing, operate high-altitude test chambers, test materials and components, maintain equipment and buildings, and be responsible for administrative, logistics, safety, security and emergency services.

Other bidders were Kentron International, Inc., Dallas, Texas; Northrop Services, Inc., Anaheim, California; and Pan Am World Services, Inc., Cocoa Beach, Florida.

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Dave Alter
RELEASE NO. 83-032

For Release
August 19, 1983

HURRICANE DAMAGE EXPECTED TO TOP \$250,000 AT JSC

Six of more than 50 major structures at the Johnson Space Center received "significant roof and water damage" during Hurricane Alicia, NASA officials reported today.

More than 200 trees toppled, ten windows shattered and three huge steel rollup doors buckled before the gale-force winds. Some electronic test equipment moistened by rain is expected to be back in operation in 24 hours. There were no injuries and no flooding was recorded.

Damage is expected top \$250,000.

Significant damage was to the communications and tracking development laboratory and a mockup and training facility. Both will be dry and ready for test and training within 48 hours.

Damage is not expected to delay the the STS-8 mission scheduled for launch Aug. 30, but testing of the Tracking and Data Relay Satellite System (TDRSS) will take one extra day while electronic equipment dries. The test was expected to begin Sunday (Aug. 21).

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

For Release

Billie Deason
Release No. 83-033

August 25, 1983

FLIGHT CONTROL OF STS-8

The eighth flight of the Space Shuttle, extended to a six-day mission to allow additional testing of the Tracking and Data Relay Satellite System (TDRSS), includes some unique mission objectives. Mission eight will begin with the first night launch in the Shuttle program.

The first night landing in the Shuttle program will end orbiter Challenger's third flight. Landing is slated for concrete runway 22 at Dryden Flight Research Center, Edwards AFB, California.

Continuous Flow Electrophoresis System (CFES) operations will begin early in this flight. For the first time, live cells will be used in the process of separating biological materials in solution by passing them through an electrical field. Operation of CFES is scheduled for flights days 1 and 2.

Deployment of INSAT 1-B using a PAM-D upper stage is scheduled for flight day 2. Launch of this communications and weather satellite will be identical to satellite launches on STS-5 and STS-7.

The Payload Deployment and Retrieval System/Payload Flight Test Article (PDRS/PFTA), an aluminum, powerless test structure weighing 8,500 pounds, will be maneuvered using the Remote Manipulator System (RMS). The exact auto sequence run performed on flights 4 and 7 will be used with the larger weight/mass PDRS/PFTA payload to provide data on differences in arm response.

Verification of Ku-band data/communication links between TDRS-A (launched during STS-6) and the orbiter will be performed on flight day 1, flight day 3, flight day 4, and flight day 6.

Included in Challenger's payload are 12 Getaway Special (GAS) canisters sponsored by NASA, the U. S. Postal Service and the private sector.

Lead flight director for STS-8 is Harold M. Draughon, who has been lead flight director on STS-6, entry team flight director on STS-3 and STS-4 and backup flight director on STS-2. Additional responsibilities include prelaunch mission planning and coordination, as well as other leadership and management duties during the on-orbit phase of the mission.

The Orbit 1 team flight director is Brock R. Stone, who was planning team flight director on STS-6.

Ascent and entry flight directors are Jay H. Greene and Gary E. Coen, respectively, both veteran Shuttle flight directors. Planning Team flight director duties are assigned to Greene

As with previous Shuttle missions, three teams of flight controllers will alternate shifts in the MOCR with a fourth team designated as an offline, on-call, troubleshooting team. The MOCR facility provides centralized control of the spacecraft from launch to landing and is backed up by additional teams operating from nearby staff support rooms in which government and contractor employees monitor data for analysis and evaluation.

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 and data processing functions in the front row.

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.

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

Booster Systems 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 & 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 coordinating 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.

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

Personnel assignments to STS-8 flight control teams follow:

<u>FUNCTION</u>	<u>ASCENT TEAM</u>	<u>ENTRY TEAM</u>
Flight Director	Jay H. Greene	Gary E. Coen
Capsule Communicator	Bryan D. O'Connor	Guy S. Gardner
Operations Integration Officer	Wayne B. Boatman	Kim W. Anson
Flight Activities Officer	Cheevon B. Lau	Cheevon B. Lau
Flight Dynamics Officer	Willis M. Bolt	Gregory T. Oliver
Payloads	Robert M. Kelso	
Trajectory Officer	Ronald C. Epps	Phillip J. Burley
Guidance Officer	J. T. Chapman	Willard S. Presley
Booster Systems Engineer	Jerry L. Borrer	Jenny M. Howard
Propulsion Systems Engineer	N. Wayne Hale	
Guidance, Navi- gation & Control	James C. Adamson	James C. Adamson

<u>FUNCTION</u>	<u>ASCENT TEAM</u>	<u>ENTRY TEAM</u>
Integrated Communication Systems	Harold Black	Harold Black
Data Processing Systems Engineer	Andrew F. Algate	Andrew F. Algate
Environmental, Consumables & Mechanical Systems Engineer	Charles T. Holliman	Charles T. Holliman
RMU, Mechanical & Upper Stage Systems Officer	Albert Y. Ong	Albert Y. Ong
Flight Surgeon	Ellen L. Shulman	Ellen L. Shulman
Ground Control	Robert R. Marriott	C. R. Capps

<u>FUNCTION</u>	<u>ORBIT 1 TEAM</u>	<u>ORBIT 2 TEAM</u>	<u>PLANNING TEAM</u>
Flight Director	Brock R. Stone	Harold M. Draughon	Jay H. Greene
Capsule Communicator	Mary L. Cleave	John E. Blaha	Bryan D. O'Connor
Operations Integration Officer	Kim W. Anson	James E. Wallace	Wayne B. Boatman
Flight Activities Officer	Cheevon B. Lau	Carolynn L. Conley	Ben E. Ferguson
Flight Dynamics Officer	Brian L. Jones	Bradford H. Sweet	Edward P. Gonzalez
Payloads	Michele A. Brekke	Michael W. Hawes	Debbie D. Pawkett
Trajectory Officer	James E. I'Anson	Nicholas E. Combs	
Guidance Officer	J. T. Chapman	Gayle K. Weber	Mason Lancaster
Booster Systems Engineer	Jerry L. Borrer	Jerry L. Borrer	Jerry L. Borrer
Propulsion Systems Engineer	N. Wayne Hale	William Gerstenmaier	Charles D. Young
Guidance, Navi- gation & Control	James C. Adamson	C. K. Alford	Harold Hardwick

<u>FUNCTION</u>	<u>ORBIT 1 TEAM</u>	<u>ORBIT 2 TEAM</u>	<u>PLANNING TEAM</u>
Integrated Communication Systems	Harold Black	J. E. Conner	Roberto P. Moolchan
Data Processing Systems Engineer	Andrew F. Algate	Michael Darnell	Lizabeth A. Cheshire
Environmental, Consumables & Mechanical Systems Engineer	Charles T. Holliman	R. John Rector	Jerry D. Pfleeger
RMU, Mechanical & Upper Stage Systems Officer	Albert Y. Ong	Pramod Kumar	Mark J. Ferring
Flight Surgeon	Ellen L. Shulman	James S. Logan	
Ground Control	Robert R. Marriott	Julius M. Conditt	John H. Wells

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NASA News



25th Anniversary
1958-1983

National Aeronautics and
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Lyndon B. Johnson Space Center

Houston, Texas 77058

AC 713 483-5111

For Release:

John Lawrence
RELEASE NO. 83-034

September 6, 1983

NOTE TO EDITORS

A post-flight news conference with STS-8 astronauts Richard Truly, Daniel Brandenstein, Dale Gardner, Guion Bluford and William Thornton, will be held at 1 p.m. (CDT) Tuesday, Sept. 13, in the NASA News Center, Bldg. 2, Room 135, Johnson Space Center, Houston.

#

For Release

Terry White
RELEASE NO. 83-035

September 9, 1983

NASA NEGOTIATES WITH PIONEER FOR SPACE CENTER LOGISTICS

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

Contract services will include identification and cataloging of property, receipt and inspection of property, warehouse operations, bondroom operations, temporary storage operations, logistics plans and analysis, packing and shipping, transportation support, supply documentation, and stock inventory control.

Pioneer's proposed cost and fee for the period December 1, 1983 through November 30, 1984 is approximately \$2.5 million. NASA has the option to extend the contract for four additional one-year periods.

Other bidders were Corporation Delivery Systems, Inc., Houston, Texas; FOMM, Inc., Gainesville, Georgia; Trueno Corporation, Pasadena, Texas; and Universal Services Company, Inc., Houston, Texas.

#

For Release:

John Lawrence
RELEASE NO. 83-036

September 21, 1983

SHUTTLE CREWS SELECTED

Astronaut crews for two upcoming Space Shuttle Flights have been selected by the National Aeronautics and Space Administration.

The flights are scheduled to occur in June and August 1984 according to the current flight manifest.

Since some reordering of flights may occur, beginning in 1984 crews will be announced by payload assignment rather than an STS number. Mission designations consist of a numerical prefix indicating the year in which launch is to occur, a numerical designator for the launch ("1" for a KSC launch and "2" for a Vandenburg AFB launch), and a letter suffix which reflects the originally scheduled order of launch. Mission 41-D, for example, is a 1984 launch--"4"; to occur at KSC - "1" and was originally manifested as the fourth mission of that fiscal year - "D". If the launch moves in the sequence, the mission designator will not change.

Commander of the 41-E mission will be Karol J. Bobko (Colonel, USAF), 45, of Gulf Harbors, Fla. He was pilot on the sixth Shuttle flight in April. Other crew members will be Donald

E. Williams (Commander, USN), 41, of Lafayette, Ind., pilot; and as mission specialists, Dr. Rhea Seddon, 35, of Murfreesboro, Tenn.; Jeffrey A. Hoffman, Ph.D., 38, Brooklyn, N.Y.; and S. David Griggs, 43, Lawrence, Mich.

The 41-E payloads are to be the commercial satellites TELESAT and SYNCOM IV-1, a Large Format Camera, and a multipurpose experiment support structure provided by the Office of Aeronautics and Space Technology. Launch is forecast for June 6, 1984, and is to be the second flight of the orbiter, Discovery.

Payload 41-F will be a Department of Defense mission to be flown by the astronaut crew previously assigned to STS-10.

Commander of 41-G will be Frederick H. Hauck (Captain, USN), 42, of Winchester, Mass. He piloted the orbiter Challenger, on STS-7 in June. His crew will consist of David M. Walker (Commander, USN), 39, of Eustis, Fla., pilot; and mission specialists Dr. Anna L. Fisher, 33, San Pedro, Calif.; Joseph P. Allen, Ph.D., 46, Greencastle, Ind.; and Dale A. Gardner (Lt. Commander, USN), 34, Fairmont, Minn.

Allen is a veteran of a previous mission, having flown on STS-5 in November 1982. Gardner flew on STS-8 in August.

Cargo aboard this flight, which will also employ the orbiter Discovery, will be commercial satellites for TELSTAR, Satellite Business System, and Hughes Aerospace, and an astronomy experiment named SPARTAN. The projected launch date is Aug. 1.

National Aeronautics and
Space Administration

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

For Release

John Lawrence
RELEASE NO. 83-037

September 22, 1983

NOTE TO EDITORS

Media background briefings for the STS-9 Space Shuttle/Spacelab mission will be held Monday and Tuesday, Oct. 3 and 4, at the Johnson Space Center and Wednesday, Oct. 5, at the Marshall Space Flight Center.

A flight plan briefing by lead flight director Chuck Lewis will be the leadoff event at 1 p.m. Monday, Oct. 3, in Bldg. 2, Room 135, Johnson Space Center, Houston. Subsequent briefings that afternoon will cover STS-9 systems, Spacelab systems and the Spacelab mission plan.

A news conference and round-robin interviews with the STS-9 flight crew will occur at Houston Tuesday, Oct. 4. The news conference begins at 9 a.m. with mission commander John Young, pilot Brewster Shaw, mission specialists Owen Garriott and Robert Parker, and payload specialists Byron Lichtenberg and Ulf Merbold.

The following day, Oct 5, Spacelab payload specialists will be available for interviews and photo opportunities at the Spacelab training mockup located at the Marshall Space Flight Center in Huntsville, AL. At noon on the same day there will be a briefing on the Spacelab science activities planned for the joint American/European mission. Interviews will resume following this briefing.

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National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
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Terry White
RELEASE NO. 83-038

For Release
IMMEDIATE

NASA-JOHNSON AWARDS SAFETY, RELIABILITY CONTRACT
TO BOEING SERVICES INTERNATIONAL

The NASA Johnson Space Center, Houston, Texas has awarded Boeing Services International, Inc., Cocoa Beach, Florida a cost-plus-fixed-fee contract for safety, reliability and quality assurance engineering support services at the Center.

Beginning October 1, 1983 and running 36 months through September 30, 1986, the contract has an estimated value of \$29.48 million with a pre-priced three-month extension option valued at \$2.397 million. The contract covers safety, reliability and quality assurance engineering for current and future JSC programs for space hardware, software, ground support facilities, and for payloads including experiments.

Boeing was the only bidder in the competitive procurement.

#

September 27, 1983

National Aeronautics and
Space Administration

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

For Release

John Lawrence
RELEASE NO. 83-039

IMMEDIATE

LOUSMA RETIREMENT

Astronaut Jack R. Lousma has announced plans to leave NASA effective Oct. 1, and to retire from the U. S. Marine Corps.

Lousma was commander of the Space Shuttle orbiter, Columbia, on its third test flight in March 1982. He has been a NASA astronaut since April 1966, and served as pilot on Skylab 3 from July 28 to Sept. 25, 1973. He was a backup crewman for the Apollo-Soyuz flight, and was a member of the Apollo 9, 10, and 13 support crews.

He has been a Marine Corps officer since 1959, and will retire in the grade of colonel effective Nov. 1.

With regard to post-retirement plans, Lousma is evaluating a number of alternatives both in and outside the aerospace industry. For the immediate future, he and his family will continue to reside in the Houston area.

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September 28, 1983

National Aeronautics and
Space Administration

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



25th Anniversary
1958-1983

James D. Poindexter
AC 713 483-4433

For Release:
October 1, 1983

RELEASE NO: 83-040

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. Bobby (Bob) Mayfield. Mr. Mayfield 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. Mayfield was born in Denton, Texas on November 1, 1950. After graduating from R. L. Turner High School in Carrollton, Texas, he attended Texas A&M University, receiving a Bachelor of Science in Wildlife Science in 1973. The same year he received his teaching certificate.

Bob was commissioned into the Regular Army and served as a Signal Officer for four years with the 16th. Signal Battalion at Ft. Hood, Texas. In 1977 he resigned from the Army and began a career as a science teacher at Newman Smith High School in Carrollton, Texas. In 1980 he moved to Austin, Texas and taught Science at Grisham Middle School in Round Rock, Texas. Bob received a Master of Arts in Science Education from the University of Texas at Austin on August 15, 1983.

National Aeronautics and
Space Administration

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

Steve Nesbitt
RELEASE NO. 83- 41

For Release:

IMMEDIATE

NASA STARTS SPACE ADAPTATION RESEARCH PROJECT

The National Aeronautics and Space Administration has created a new project and research institute at the Johnson Space Center in Houston to focus efforts in solving some of the problems astronauts have in adjusting to the weightless environment.

The Space Biomedical Research Institute will function as part of the Space Adaptation Project within NASA's National Space Transportation Systems Program Office, the organization that manages the Shuttle program.

Space Adaptation Syndrome is the name NASA applies to a wide range of physical adjustments that astronauts sometimes experience, including nausea, vomiting and general malaise.

Because Space Shuttle missions are relatively short, usually less than a week, this condition can have a significant mission impact since it may reduce crew effectiveness for one to three days. Nearly half of space crews experience some symptoms.

--more--

October 17, 1983

Some in-flight data has been collected over the past 22 years of manned space flight, particularly during the extended Skylab missions. Experiments have been performed on several shuttle flights. Physician astronaut Dr. Norman Thagard flew on STS-7 and performed a whole range of data gathering experiments designed by Dr. Bill Thornton, another physician astronaut who conducted additional work on STS-8.

To speed up the process of finding countermeasures and perhaps help identify and assist those who may be more subject to the condition, NASA created the research project and established the institute.

Elena Huffstetler has been named project manager. Dr. Sam Pool, chief of medical sciences at the Johnson Space Center, is director of the institute. The Universities Space Research Association, the group which operates the Lunar and Planetary Institute, is under contract with NASA to aid in organizing the research community's effort in helping NASA tackle the space sickness problem.

At NASA headquarters, the Space Medicine Branch, Life Sciences Division, will be responsible for policy-level control of the program of both clinical and applied research.

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Terry White

For Release

RELEASE NO. 83-042

October 19, 1983

SPACE CENTER PICKS KELSY-SEYBOLD FOR HEALTH CONTRACT NEGOTIATIONS

The NASA Johnson Space Center, Houston, has selected Kelsey-Seybold Clinic, PA of Houston for negotiations leading to a new contract for occupational medicine and environmental health support at the Center.

With an estimated value of \$1,732,000 for the first year, second and third year options are anticipated.

Other competing firms were the Methodist Hospital Health Care System, Inc. of Houston, and Technology Scientific Services Inc. of Dayton, Ohio.

#

Steve Nesbitt
RELEASE NO. 83-043

For Release
October 25, 1983

STS OPERATIONS CONSOLIDATION

The NASA Johnson Space Center has initiated steps to consolidate virtually all existing contracts supporting Space Shuttle operations at the Center into a single, major contract.

JSC Director Gerald D. Griffin said the objective of the new contract is to develop a more efficient and cost-effective approach to Shuttle operations as the flight rate increases and as operations become more routine.

JSC plans to award a major contract early in FY 86 which will consolidate Space Transportation System (STS) operational support activities currently performed by approximately 16 different contractor organizations as well as some routine functions currently performed by the Center's civil service staff.

Activities such as the maintenance and operation of the Mission Control Center, the Shuttle simulator, the Shuttle Avionics Integration Laboratory and the STS portion of the Central Computing Complex as well as flight planning and direct mission support are among the major candidates for inclusion in the new contract.

JSC officials will be meeting early in November with companies likely to be affected by the consolidation.

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National Aeronautics and
Space Administration

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

Steve Nesbitt

For Release:

Release No.83-044

November 3, 1983

JSC AWARDS CONTRACT FOR HAULING, RIGGING SERVICES

The NASA Johnson Space Center has selected Space Tech Crane and Rigging Company, Inc., of Huffman, Texas, for negotiations leading to the award of a contract to provide rigging and heavy hauling services at the Houston space center.

Approximate value of the contract which will run from December 1, 1983 to November 30, 1984, is \$450,000. NASA has the option to extend the contract for four additional one-year periods.

Services to be provided include rigging, handling and transporting of space flight hardware and ground support equipment and the testing and certification of handling and moving equipment.

Other companies submitting proposals were Chemical and Vegetation Control of Baytown, Texas; D.L. Ryan, Inc., of Houston; East-West Riggers and Constructors, Inc., of Amhurst, New Hampshire, and Pioneer Contract Services, Inc., of Houston.

#

November 3, 1983

John Lawrence
RELEASE NO. 83-045

For Release
November 18, 1983

Flight Control of STS-9

Flight control of the ninth Space Shuttle mission will represent a significant increase in workload for mission control teams in two respects.

The first concerns mission duration. The nine-day flight will be the longest mission to date. The second aspect pertains to the increased duties some mission controllers will assume with the addition of responsibilities for Spacelab systems.

Additionally, a new flight control position will appear in the Mission Operations Control Room (MOCR) during STS-9. It will be the Command and Data Management Systems Officer, to be identified by the call sign, "CDMS," who will have responsibility for Spacelab computer systems.

Three other systems officers will see an increase in the volume of data they monitor through the addition of Spacelab systems to their realms of responsibility. They will be the Remote Manipulator System, Mechanical and Upper Stage Systems Officer (RMU), the Data Processing Systems Officer (DPS), and the Environmental, Consumables and Mechanical Systems Engineer (EECOM).

Lead flight director for STS-9 will be Charles R. Lewis, the most senior among current flight directors. In all, five flight directors will see duty during STS-9, reflecting the increasing specialization which is becoming a feature of mission operations. Jay H. Greene will direct the ascent portion

of the flight and entry flight director will be Gary E. Coen. Both performed in identical capacities on each of the three previous Shuttle missions. Sharing duties as flight directors during on-orbit phases will be Lewis, John T. Cox and Lawrence S. Bourgeois.

Paul M. Joyce, lead flight controller among EECOMS, estimates that STS-9 adds about a one-third greater workload to his duties as compared to previous Shuttle operations. These functions are essentially an extension of orbiter systems --- power distribution, life support, cooling and cabin fans, and management of cryogenic fuels. Management of cryogenics for fuel cells, Joyce said, will be a more significant duty on this flight in part because of the power levels to be experienced, but more because consumption must be monitored and budgeted over a longer duration flight.

Richard H. Koos, chief of the Payload Computer Section under the Director of Mission Operations, explained the relationship between the DPS and the new CDMS officer. For the DPS, STS-9 will feature the addition of 11 displays which cover nearly 300 parameters monitored by one of the orbiter's General Purpose Computers. The DPS officer would direct commands through the astronaut on duty in the flight deck, who would make inputs via keystrokes at the aft crew station.

The CDMS officer will be responsible for data processing hardware and software executes for Spacelab's two major computers and the associated input/output devices. One of the French-built computers controls and monitors Spacelab subsystems. The second provides control and monitoring for the lab's scientific experiments. A third backup computer is carried as an on-orbit spare. The CDMS console will be manned only during on-orbit phases and not during ascent or entry.

The RMU officer's duties will expand with the addition of some 30 parameters to be monitored during orbit phases. The lead RMU officer, Rodney Lofton, explained that the new functions are associated with the Common Payload Support Equipment, which consists of three elements.

The first is the Scientific Air Lock (SAL), which will be tracked for pressures and venting during inner and outer hatch openings and extension of the equipment table. The second is a Scientific Window Adaptor Assembly, through which a metric camera will record selected earth views. And finally, two viewports will be monitored. One is at the aft end of the Spacelab which is normally closed for thermal protection, but which will be opened at selected intervals for crew observation of the Shuttle pallet. The second is situated adjacent to the SAL. The RMU officer will monitor these for mechanical performance and integrity.

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

Flight Director (Flight) -- Has overall responsibility for the conduct of the mission and real-time decision-making.

Capsule Communicator (CAPCOM) -- Communicates with the flight crew on orbit.

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

Data Processing Systems Engineer (DPS) -- Responsible for data processing hardware and executes software for the vehicle's five onboard general purpose computers, which for STS-9 will include major Spacelab systems functions.

Command and Data Management Systems Officer (CDMS) -- Responsible for data processing hardware and executes software for Spacelab's two onboard subsystem and experiments computers and Remote Acquisition Units.

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 lighting for both orbiter and Spacelab systems.

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 Spacelab mechanical systems.

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 entry.

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

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

Booster Systems 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 system before entry.

Propulsion Systems Engineer (Prop) -- Responsible for monitoring 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.

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

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

Operations Integration Officer (OIC) -- 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.

Payload Officer (Payloads) -- Coordinates all payload activities with the remote POCC.

Personnel assignments to STS-9 flight control teams follow:

FUNCTION	ASCENT TEAM	ENTRY TEAM
Flight Director	Jay H. Greene	Gary E. Coen
Capsule Communicator	Guy Gardner	John E. Blaha
Ground Controller	George M. Egan	Wayne E. Murray
Surgeon	Dr. James S. Logan	Dr. P. M. Kuklinski
Operations Integration Officer	Wayne B. Boatman	Kim W. Anson
Flight Dynamics Officer	Roland C. Epps	Gregory T. Oliver
Guidance	J. T. Chapman	Thornton E. Dyson
Booster Systems Engineer	Jerry L. Borrer	Jenny M. Howard
Data Processing Systems Engineer	Ernest E. Smith	Gregory J. Harbaugh
Environmental, Consumables and Mechanical Systems Engineer	Jimmy S. McLendon	Jimmy S. McLendon
Guidance, Navigation and Control	David W. Whittle	David W. Whittle
Integrated Communications Systems	Ed I. Fendell	Ed I. Fendell
Propulsion Systems Officer	Ronald D. Dittmore	Ronald D. Dittmore
Remote Mechanical System, Mechanical and Upper Stages Systems Officer	Rodney L. Lofton	Rodney L. Lofton

FUNCTION	ORBIT 1	ORBIT 2	ORBIT 3
Flight Director	Charles R. Lewis	John T. Cox	Lawrence S. Bourgeois
Capsule Communicator Backup CAPCOM	Bryan O'Connor William Fisher	Mary L. Cleave Anna Fisher	Guy Gardner Franklin Chang
Ground Controller	John H. Wells	Robert R. Marriott	George M. Egan
Surgeon	James S. Logan	James Vanderploeg	Ellen L. Shulman
Operations Integration Officer	James E. Wallace	Wayne B. Boatman	Kim W. Anson
Payload Officer	Glenn H. Cress	William A. Middleton	William C. Burton
Flight Dynamics Officer	Bradford H. Sweet	Brian L. Jones	Phillip J. Burley
Guidance Systems Officer	K. Allan Keisner	E. Mason Lancaster	Thornton E. Dyson
Flight Activities Officer	Robert H. Nute	Gerald L. Shinkle	William R. Holmberg
Data Processing Systems	Lizabeth A. Cheshire	Michael Darnell	Ernest E. Smith
Command and Data Management Systems Officer	Ray B. Lachney	Dennis J. Webb	Richard H. Koos
Environmental, Consumables & Mechanical Systems Officer	Paul M. Joyce	J. Milton Heflin, Jr.	Jimmy S. McLendon
Guidance, Navigation and Control	Harold J. Clancy	Frank E. Trlica	David W. Whittle

FUNCTION	ORBIT 1	ORBIT 2	ORBIT 3
Integrated Communications Systems	A. Lee Briscoe	Granvil A. Pennington	Robert E. Castle, Jr.
Propulsion Systems	Charles D. Young	William H. Gerstenmaier	Ronald D. Dittmore
Remote Mechanical System, Mechanical and Upper Stage Systems	Albert Y. Ong	G. H. Ulrich	Rodney Lofton

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National Aeronautics and
Space Administration

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

For Release

IMMEDIATE

Dave Garrett
Headquarters
Washington, D.C. 20546
(phone: 202-755-3090)

Steve Nesbitt
Johnson Space Center
(phone: 713-483-5111)

Release No. 83-046

STS FLIGHT ASSIGNMENTS

The National Aeronautics and Space Administration has selected astronaut crews for four additional Space Transportation System flights: missions 41-G, 51-A, 51-C and 51-F, and has named a launch-ready standby crew.

The attached schedule lists crew assignments and cargo manifests as now planned.

November 17, 1983

SPACE SHUTTLE FLIGHTS
Calendar year 1984

(Note: Cargo manifests and crew scheduling are subject to change.)

Flight 41-B

Date: January, 29, 1984

Cargo: SPAS-01, Palapa B-2, Westar-VI.

Crew:

Vance D. Brand, commander
Robert L. Gibson, pilot
Bruce McCandless, MS
Robert L. Stewart, MS
Ronald E. McNair, MS

Flight 41-C

Date: April 4, 1984

Cargo: LDEF, Solar Max Repair

Crew:

Robert L. Crippen, commander
Francis R. Scobee, pilot
George D. Nelson, MS
James D. Van Hoften, MS
Terry J. Hart, MS

Flight 41-D

Date: June 4, 1984

Cargo: Telesat-I, Syncom IV-1, Large Format Camera, OAST-1.

Crew:

Henry W. Hartsfield, commander
Michael L. Coats, pilot
Judith A. Resnik, MS
Steven A. Hawley, MS
Richard M. Mullane, MS
Charles D. Walker, PS

Flight 41-E

DOD Mission

Flight 41-F

Date: August 9, 1984

Cargo: Telstar 3-C, SBS-D, Syncom IV-2, SPARTAN.

Crew:

Karol J. Bobko, commander
Donald E. Williams, pilot
Rhea Seddon, MS
Jeffrey A. Hoffman, MS
S. David Griggs, MS

Flight 41-G

Date: August 30, 1984

Cargo: OSTA-3, ERBS

Crew:

Robert L. Crippen, commander

Jon A. McBride, pilot

Kathryn D. Sullivan, MS

Sally K. Ride, MS

David D. Leestma, MS

FLIGHT 41-H

DOD Mission

-or-

TDRS-B

Crew:

Frederick Hauck, commander

David M. Walker, pilot

Anna L. Fisher, MS

Dale A. Gardner, MS

Joseph P. Allen, MS

Flight 51-A

Date: October 24, 1984

Cargo: MSL-1, Telesat-H, GAS Bridge

Crew:

Daniel Brandenstein, commander

John O. Creighton, pilot

Shannon W. Lucid, MS

John M. Fabian, MS

Steven R. Nagel, MS

Flight 51-B

Date: November 22, 1984

Cargo: Spacelab 3

Crew:

Robert F. Overmeyer, commander

Frederick D. Gregory, pilot

Don L. Lind, MS

Norman E. Thagard, MS

William E. Thornton, MS

Flight 51-C

Date: December 20, 1984

Cargo: TDRS-B or C

Crew:

Joe H. Engle, commander

Richard O. Covey, pilot

James F. Buchli, MS

John M. Lounge, MS

William F. Fisher, MS

Calendar Year 1985

Flight 51-F

Date: March 29, 1985

Cargo: Spacelab 2

Crew:

Charles G. Fullerton, commander

S. David Griggs, pilot

F. Story Musgrave, MS

Anthony W. England, MS

Karl G. Henize

Stand-by Crew

Karol J. Bobko, commander

Ronald J. Grabe, pilot

Richard M. Mullane, MS

Robert L. Stewart, MS

David C. Hilmers, MS

#

For Release

RELEASE NO. 83-047

December 3, 1982

RELEASED JOINTLY WITH THE EUROPEAN SPACE AGENCY, PARIS

EXTENSION OF STS-9 MISSION

NASA and ESA managers have decided to extend the STS-9 mission by one day contingent on satisfactory weather conditions for landing at Edwards, California.

The decision was made when it became clear that reserves of critical orbiter supplies, including fuel cell reactants and propellants, will easily support an extension and after a review of Spacelab science objectives showed that extending the mission from nine days to ten could add substantially to the mission science return.

The extension of the mission offers a unique opportunity to all of the science disciplines involved in Spacelab. The extension enables the acquisition of data in the very new field of solar physics called solar seismology, processing of a number of additional samples in the materials science facility, detailed exploration of the puzzling glow seen on orbiter surfaces and the possibly related processes which result in erosion of some materials exposed to space in low earth orbit. The vestibular studies, so important to understanding the space adaptation

syndrome, will be provided an opportunity to acquire important additional data of significance to future manned spaceflight.

Weather will be a key factor in finally committing to a one day extension because of a strong desire to assure planned and backup landing opportunities at Edwards, where facilities are in place to handle post-landing life science objectives.

Mission managers will continue to review the status of crew, orbiter, Spacelab and weather on a daily basis in determining whether to continue the mission up to and beyond its planned nine day duration. If the mission is extended to ten days, landing will occur at 10:01 a.m. CST (8:01 PST) on Thursday, December 8.

#

John Lawrence

For Release
IMMEDIATE

RELEASE NO. 83-048

NOTE TO EDITOR

A post flight news conference with the STS-9 crew and pre-flight briefings for late January Shuttle Mission 41-B will be held December 19-21 at NASA's Johnson Space Center, Houston.

STS-9 (Spacelab 1) crew members will conduct a news conference at 1 p.m. Monday, December 19.

Background briefings for mission 41-B will be Tuesday, December 20. The first of these will be by Lead Flight Director Harold Draughon at 9 a.m. Subsequent briefings will cover 41-B's payloads, extravehicular activities (EVA) and the Manned Maneuvering Unit.

Mission 41-B Commander Vance D. Brand; Pilot Robert L. Gibson; Mission Specialists Bruce McCandless II, Robert L. Stewart, and Ronald E. McNair will be available at a news conference at 9 a.m. Wednesday, December 21.

#

For Release: December 13, 1983

Terry White

RELEASE No. 83-049

NASA Center Announces Plans
for Flight Equipment Contract

The NASA Johnson Space Center, Houston, will brief prospective bidders December 16 on its plans for a single Space Shuttle flight equipment processing contract. The briefing will be in the JSC Building 30 auditorium at 9 am CST.

Flight equipment used repetitively on Shuttle flights includes spacesuits, manned maneuvering units, clothing, food and hygiene provisions, cameras, recorders, communications and television equipment, inflight tools, storage lockers, and other devices used in orbit by flight crews. The processing contract will cover equipment maintenance, manifesting for flight and for crew trainers, stowage engineering, mission planning for equipment flow and readiness, and equipment records.

Firms planning to attend the briefing should send names of those attending (limit four per company), company name, address and telephone number to Richard Regenburgh/BC24, Johnson Space Center, Houston, Texas 77058, or phone 713/483-2141. If more than 35 companies respond, the briefing will be repeated at a later date.

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For Release:

Steve Nesbitt

Release No. 83-050

December 22, 1983

JSC AWARDS AIRCRAFT SERVICES CONTRACT

The NASA Johnson Space Center has selected Northrup Worldwide Aircraft Services of Lawton, Oklahoma, for negotiations leading to a cost-plus-award-fee contract for maintenance and modification of aircraft assigned to the center.

Northrup's proposed estimated cost and fee for the initial one-year contract is approximately \$9,200,000. The initial contract period runs from March 1, 1984, through February 28, 1985.

Aircraft used in astronaut training, Earth resources research, administrative transport and other programs operate from Ellington Air Force Base a few miles north of the space center.

The work to be performed under the contract will be done primarily at the NASA facilities at Ellington and includes aircraft maintenance, engineering and logistics support to the Aircraft Operations Division of the JSC Flight Crew Operations Directorate.

--more--

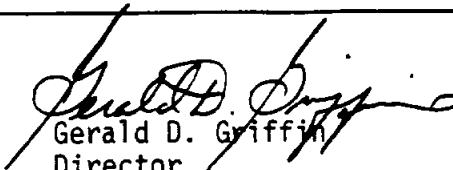
December 22, 1983

The government can elect to continue the contract for four additional one-year periods.

Other companies submitting proposals included A.J. Enterprises, Inc., of Houston; Mercury Consolidated, Inc., of Tustin, California; Serv-Air, Inc., of Greenville, Texas; and Western Airlines and LPL Technical Services, Inc., of Los Angeles.

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WOTs
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JOHNSON SPACE CENTER ANNOUNCEMENT Lyndon B. Johnson Space Center NASA	DATE	NO.
	8/24/83	83-121
	DIST	S
APPROVED		 Gerald D. Griffin Director

KEY PERSONNEL ASSIGNMENT

Dr. Joseph P. Kerwin is designated as Director, Space and Life Sciences and will assume his new duties in December of this year. He is currently the NASA representative at the Canberra Office, Department of Science and Technology, Belconnen, Australia. Dr. Kerwin, who holds the rank of Captain, U.S. Navy, has been detailed to JSC since his selection as a Scientist Astronaut in June of 1965. As a Scientist Astronaut, he flew on the Skylab 2 mission.

Dr. Kerwin received a bachelor's degree in philosophy from the College of the Holy Cross in Worcester, Massachusetts, in 1953, and a Doctor of Medicine degree from Northwestern University Medical School in Chicago in 1957. Dr. Kerwin graduated as a Naval Flight Surgeon in 1958 from the U.S. Navy School of Aviation Medicine in Pensacola, Florida.