NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dick Young
305 867-2468

For Release:

January 1979

RELEASE NO: KSC 2-79

1979 LAUNCH SCHEDULE

MISSION	LAUNCH VEHICLE	LAUNCH SITE	SCHEDULED DATE
SCATHA (1)	Delta-148	17-B	January 25
FLTSATCOM-B (2)	AC-47	36-A	May 3
WESTAR-C (3)	Delta-149	17-A	August (call up)
HEAO-C (4)	AC-53	36-B	September
STS-1 (5)	Space Shuttle	39-A	September 28
SMM (6)	Delta-150	17-A	October
RCA-C (7)	Delta-151	17-A	November
INTELSAT V F-1 (8)	AC-54	36-A	Fourth Quarter

Key

(1) Corona physics research satellite. Spacecraft Charging At High Altitudes, or SCATHA (Department of Defense)

(2) Military communications satellite

(3) Western Union domestic communications satellite

(4) High Energy Astronomy Observatory

(5) Space Transportation System-1, first orbital mission of the Space Shuttle.

(6) Solar Maximum Mission

(7) RCA domestic communications satellite

(8) The INTELSAT V mission entails the launch of the first of a new series of high capacity communications satellites for the 102 nation International Telecommunications Satellite Organization.

NASA News

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For Release:

Mark Hess
305 867-2468

January 8, 1979

RELEASE NO: KSC 3-79

NASA TOURS RECORDS SECOND HIGHEST YEAR

KENNEDY SPACE CENTER, Fla.--More than 1.2 million visitors took the guided bus tours of the Kennedy Space Center and historical Cape Canaveral Air Force Station in 1978 as the Visitors Center experienced the second busiest year in its 13-year history.

Total tour attendance reached 1,289,653 in 1978, a 15.4 percent increase over last year's final tally of 1,117,603 patrons. Bus tour patronage for 1978 exceeded all previous years with the exception of the 1,389,000 in 1972 at the close of the Apollo lunar landing program.

For December, traditionally the Visitors Center's busiest month, bus tour patrons reached 89,355, a drop of 11.5 percent below the 100,983 for the same month in 1977. TWA Services, which operates the tours and Visitors Center for NASA, attributed the decline to visitation figures lower than anticipated for the entire state.

However, with the exception of December, monthly tour patronage figures for 1978 surpassed the previous year's monthly totals as the Spaceport continues to prepare for the first manned orbital test flight of the Space Shuttle, scheduled for this September.

Guided bus tours are operated from the Kennedy Space Center's Visitors Center, located on the NASA Causeway and accessible from U. S. Route 1, two miles south of Titusville, or Florida Route 3 from Merritt Island.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
305 867-2468

January 26, 1979

RELEASE NO: KSC 12-79

PROPOSALS ASKED FOR OPERATION OF SPACEPORT VISITOR PROGRAM

KENNEDY SPACE CENTER, Fla.--A prospectus soliciting proposals to manage and operate the public visitation program at the Kennedy Space Center in Florida was released by NASA on January 25.

As a result of the prospectus, NASA expects to enter into a concession agreement covering a 10-year period beginning May 1, 1980.

The Kennedy Space Center is NASA's principal east coast launch base but it is Florida's fourth most popular tourist destination as well. More than 1.6 million people came to KSC's Visitors Center in 1978 and a large percentage of them - some 1.3 million - took guided bus tours of the Kennedy Space Center and adjacent Cape Canaveral Air Force Station.

The Visitors Center consists of two major buildings housing a wide variety of dynamic and static exhibits on space exploration, motion picture theaters and bus terminal; a modern food services center, and exterior displays of full-scale rockets and spacecraft.

The successful proposer will be required to make a substantial initial investment, beginning with a fleet of buses to transport visitors along a tour route which includes historical landmarks and operational launch facilities for the Space Shuttle and conventional rockets.

The proposals are also to include offers for financing new buildings and facilities to enhance the NASA visitors program. NASA will provide some facilities, property and services for the concessioner's use but the visitors program must otherwise be financially self-supporting.

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The concessioner is to be granted the right to conduct such revenue producing activities as the sale of food, souvenirs and bus tour tickets, but is also required to provide some nonrevenue creating services in support of the program and to pay the expenses of the concession.

The visitor program is now operated by TWA Services, Inc.

The solicitations have been mailed to about 50 companies involved in tourism, recreation, park management and related fields. Companies not receiving the solicitation may obtain copies by writing J. E. Massey, AP-PRO-44, Kennedy Space Center, FL 32899 (Area Code 305-867-7356) and asking for Prospectus No. 10-9-0016-4.

A proposal conference to acquaint potential concessioners with the requirements and to orient them with the Kennedy Space Center will be held at KSC about February 15, 1979. Proposals to meet the terms of the solicitation are due in to the Kennedy Space Center by May 15, 1979.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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(feature)

For Release:

Karl Kristofferson
305 867-2468

April 4, 1979

RELEASE NO: KSC 40-79

ANN MONTGOMERY MAKES COLUMBIA FEEL AT HOME

KENNEDY SPACE CENTER, Fla.--Ann Montgomery is attractive, happily married and the mother of a brand new baby boy. Most women probably would consider this career enough. But, for Ann, domestic bliss is only half--granted, a very important half -- of the equation for personal satisfaction.

Ann, also has a professional career. She's an engineer for NASA at the Kennedy Space Center, a job that has allowed her literally to reach up and touch the stars. It began 11 years ago with Apollo and has matured for the Space Shuttle program.

Today, Ann is a site manager for the Orbiter Processing Facility, a sophisticated, hangar-like structure where Space Shuttle orbiters are readied for Earth-orbital missions. "It's quite a responsibility," she said, pointing from atop the tail service structure to the newly arrived Orbiter Columbia nestled in its work stands far below. "It's a new job, a new spaceship, new systems and new procedures...and a new challenge," she added, smiling.

Ann has her work cut out for her. As a site manager, she is responsible for everything that moves or is nailed down in the two-bay facility -- from security, janitorial services and vending machines up to managing and scheduling modifications for the support stands, cranes and systems that service the orbiter vehicles. This includes close coordination with the NASA and contractor organizations responsible for flight hardware and payload handling, "to make sure that what we do is not in conflict with what they are doing," she explained.

How does she feel about doing a job usually reserved for men? "I think it is a wonderful opportunity for me and for women in general. I was one of the first women at the Center involved in hands-on hardware operations. I've worked with spacecraft and climbed around launch pads and gantries, I feel qualified to handle the job.

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"I've never been in conflict with my associates. Everyone right down the line has been helpful and understanding. The men, especially, seemed to want me to succeed. In fact", she grinned, "I think being a woman was an advantage."

Does she see herself as an example for other women? "Of course," she replied. "If women are to improve their lot in the working world, they must first gain meaningful jobs, then prove themselves by satisfactory performance. My success is bound to influence other women, at least I hope so."

Choosing a career in the space program was no accident for Ann. Her father is Al Lavender who served many years with the Center's Public Affairs Office before retiring in 1978. "He had a lot to do with my decision," she admitted.

After graduating from Eau Gallie High School, she attended the University of Florida in Gainesville where she earned a B.S. degree in mathematics. She joined NASA in 1968, working in the crew systems section of Spacecraft Engineering. At night, she attended the University of Florida's off-campus Graduate Engineering Studies System (GENESYS), obtaining a master's degree in industrial engineering.

Her tenure with NASA was exciting from the start. She was involved with interior design of Apollo spacecraft crew modules, specifically relating to stowage of on-board experiments and habitability items such as food, clothing, cameras, recreational equipment, communications umbilicals and anything else Apollo astronauts might need to complete their space missions. She began with Apollo 7, the first manned Apollo flight, and continued through Skylab and the Apollo-Soyuz missions.

"It was a wonderful period to be at the Kennedy Space Center," she commented. "I worked with spacecraft designers, launch crews and astronauts and actually helped to stow the equipment on spacecraft. I felt that I was part of the mission, that in a way I also touched the stars."

After Apollo ended, she launched into preliminary planning for crew habitability for the Space Shuttle and Spacelab, the latter requiring three trips to Europe, which "I didn't mind a bit." Then, in February of this year, she was selected for her current assignment as a site manager for the Orbiter Processing Facility.

She hasn't had many free moments since, especially since the arrival of the Orbiter Columbia. "We've had our share of problems, small things that are to be expected with a new spaceship and facility. It's an educational process all over again, and the problems represent opportunities to learn," she volunteered.

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Ann admits that her hectic schedule of the past few months has sometimes disrupted her home life. However, her husband, Brian, a computer systems analyst with Pan Am, has been more than understanding. "He knows my job is important to me as an individual, and he pushes me to keep at it. Often, when I feel I am getting in over my head, or lack confidence in myself, he encourages me...tells me I can do it. That means a lot to me," she said, her voice wavering. Then, she brightened. "He's great with the baby (2-month-old, Keith) when I'm not around. He says he gives him a better bath than I do."

Ann Montgomery enjoys the best of two worlds. And the future seems even brighter and more rewarding.

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NASA News

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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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APR 26

For Release:

Mark Hess
305-867-2468

April 26, 1979

RELEASE NO: KSC 61-79

KSC INSTALLS SOLAR ENERGY REPORTER AT VISITORS CENTER

KENNEDY SPACE CENTER, Fla.--Ever wonder how much energy a typical family of four might save on their monthly electric bill by installing a solar water heating system?

Beginning next month, NASA's Kennedy Space Center will take daily measurements of solar energy as a public service to educate and inform local residents of the amount of solar energy available in the area.

Local news media will have the opportunity to report just how much sunlight has fallen during the day and include the information as part of their daily weather forecast.

On Thursday, May 3, the day celebrated around the country as "Sun Day," the Kennedy Space Center will begin operating a solar energy index reporter at the Visitors Information Center.

The equipment records and adds up the sunfall over the course of the day, based on solar energy available on 500 square feet of solar collectors, pointed south and inclined at an angle of 28.5 degrees from the horizontal. The information will represent the total solar energy available on the previous day, the accumulated energy for the current day and the Sun intensity at the moment.

Direct access to these daily solar energy measurements will be conveniently available to area newspapers, television and radio stations through a telephone answering system. Also, the front panel of the Solar Energy Reporter will display the solar measurements in a digital format so that tourists visiting the Visitors Center will be able to read the information as it is being recorded.

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The equipment used to measure this energy is called a Solar Energy Reporter, which consists of a pyranometer that measures Sun intensity and is located on the roof of a building at the Visitors Center; an integrator to accumulate measurements throughout the daylight period; a voice synthesizer to convert binary numbers to voice sounds and report the results in English over the telephone; and an automatic interface.

For reporting to the public, the information is electronically converted to a specific reading. A media representative calling in hears a voice-synthesized announcement of three sets of numbers.

The first set of numbers represents the total kilowatt-hours (KWH) of solar energy collected the previous day. The second group of numbers corresponds to the solar energy in KWH accumulated in the current day to that instant. And the third reading is an up-to-the-minute measure of the sun's intensity in kilowatts.

The selection of kilowatt hours was made because the general public can relate to kilowatt hours--the basis for their electric utility bills.

The solar index reporter will be available by telephone only to news media representatives. Local press can obtain the toll-free number, and information on how to incorporate a daily solar energy report in their regular weather forecast by calling the KSC Public Information Office at 867-2468.

The Florida Solar Energy Center has also agreed to cooperate with KSC in expanding the awareness program by receiving calls from the public who are interested in getting more information on the solar index reporter over their toll-free telephone number 1-800-432-0575.

KSC's Visitors Center is located on the NASA Causeway, and is accessible from U. S. Route 1, two miles south of Titusville, or State Road 3 on Merritt Island.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

May 29

Hugh Harris
305-867-2468

For Release:

RELEASE NO: KSC 100-79

May 29,1979

DR. WALTER J. KAPRYAN RETIRES; GEORGE F. PAGE TO SUCCEED HIM AS DIRECTOR OF SHUTTLE OPERATIONS

KENNEDY SPACE CENTER, FL -- Kennedy Space Center Director Lee R. Scherer announced today the retirement of Dr. Walter J. Kapryan, Director of Shuttle Operations, and the appointment of George F. Page to fill that position, effective June 1.

In making the announcement, Scherer said, "The retirement of Dr. Kapryan represents a great loss of experience to the Center. 'Kappy' has had a distinguished career with NASA spanning nearly 32 years, during which he made many major contributions to the success of all of this nation's manned flight programs, including the transition of the Kennedy Space Center from Apollo to the Shuttle era. I am hopeful that we will be able to call upon his talents as a consultant."

Dr. Kapryan's first assignment with NASA was at the Langley Research Center in Virginia. He joined that organization in September 1947 when Langley was headquarters for the National Advisory Committee for Aeronautics and was assigned to the NASA Space Task Group at Langley in March 1959. Shortly thereafter, he was appointed project engineer for the Mercury Redstone 1 spacecraft and came to the Cape Canaveral area in 1960 with that spacecraft.

During the early phases of the Gemini Program, Dr. Kapryan was responsible within the Gemini Program Office for the test planning and determining requirements for spacecraft checkout equipment to be located at KSC.

In 1963, he established and headed the MSC Gemini Program Office at KSC. He participated in the preparation and countdown of all manned Gemini flights and all Apollo Saturn 1B and Saturn V missions.

Prior to assuming his present position in September 1969, Dr. Kapryan held the position of Deputy Director of Launch Operations. Previously, he was Assistant Apollo Spacecraft Program Manager at KSC, representing the Manned Spacecraft Center, assuring close coordination between the two centers in spacecraft positions.

A graduate of Wayne State University in Detroit, Michigan, he was awarded an Honorary Doctorate of Science degree by Florida Institute of Technology in August 1973. He has received many NASA awards and honors, among them a Superior Achievement Award in 1965 for his contributions to the Gemini program and the Group Achievement Award for his part in the dual Gemini 7/6 mission in 1966. Dr. Kapryan received a NASA Exceptional Service Medal for his contributions to the Apollo program on September 30, 1969; a NASA Distinguished Service Medal recognizing his role in the Apollo 13 and 14 missions on February 27, 1971; and NASA's Outstanding Leadership Medal in September 1975.

In 1974, Dr. Kapryan was presented the "Gold Award" of the Affiliate Council of the Engineering Societies of Detroit, Michigan, an honor bestowed annually upon the outstanding engineer from the Detroit area.

He resides in Indialantic with his wife Eloise. The Kapryan's have two daughters, Alice and Vicki, both of whom live in Houston, Texas.

Page has been Director of Cargo Operations at the NASA John F. Kennedy Space Center.

Since joining NASA in June 1963 as a Spacecraft Test Conductor on the Gemini program, Page has served as Chief Spacecraft Test Conductor for Gemini and Apollo launch operations; Chief of Spacecraft Operations Division for Apollo, Skylab and ASTP launch operations; and Director of the Expendable Vehicle Operations Directorate. His professional experience before coming to NASA included five years as a launch operations engineer with General Dynamics Corporation and six years as a flight test engineer with Westinghouse Electric Corporation.

Significant awards presented to Mr. Page were NASA's Distinguished Service Medal for his role in the 1975 ASTP operations and two NASA Exceptional Service Medals for his part in the Apollo 8 and Apollo 11 operations.

Page was born in Pittsburgh, Pennsylvania, and attended school in Harrisburg, Pennsylvania. After service in the Army Air Corps during World War II, he enrolled at the Pennsylvania State University where he earned a B.S. degree in Aeronautical Engineering in 1952. He and his wife, the former Dorie Prince of Teheran, Iran, have three children and reside in Cocoa Beach, Florida.

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NASA News

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Kennedy Space Center, Florida 32899
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Dick Young
305 867-2468

For Release:

July 31, 1979

RELEASE NO: KSC 142-79

PIONEER 11 TO PROVIDE FIRST CLOSE-UP GLIMPSE OF SATURN

KENNEDY SPACE CENTER, Fla.--NASA's third planetary spectacular of the year will occur in late August and early September when Pioneer 11 swoops in to within 13,300 miles of Saturn's cloud tops.

Launched by KSC on April 5, 1973, Pioneer will provide scientists with their first close-up views of the giant and colorful planet with its striking rings and 10 moons.

Voyagers 1 and 2 are now Saturn-bound after flybys of Jupiter in March and July, respectively, and data obtained from Pioneer 11 will be useful in planning their flights past the ringed planet in 1980 and 1981.

As of 8 p.m. EDT August 1, Pioneer 11 will be within 15,464,600 miles of Saturn and cruising toward the planet at a speed of 19,000 miles per hour. Its distance from Earth at that time will be 932 million miles.

The Saturn encounter is the second planetary surveillance job for Pioneer 11. On December 2, 1974, it skimmed to within 26,725 miles of Jupiter's cloud tops. This close passage permitted the gravity and motion of Jupiter to act as a slingshot, increasing the spacecraft's velocity and placing it on the trajectory which is now carrying it toward its close encounter with Saturn.

The trajectory from Jupiter to Saturn is about three times as long as the first leg of Pioneer's outbound journey from Earth to Jupiter. Pioneer's trajectory carried it high above the plane of the ecliptic in which the planet's revolve around the Sun, reaching a maximum height of about 102 million miles in 1976.

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KSC FORM OT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

As it rushes in toward Saturn, Pioneer will approach from the north and cross outside the plane of the planet's rings at a distance of 21,500 miles from the rings and 112,000 miles from the planet. Its closest approach to Saturn will be made on September 1 after it crosses south of the ring plane.

Pioneer 11, or Pioneer Saturn as it has been designated since its swing past Jupiter, is expected to return approximately 150 pictures of Saturn, with the first transmission scheduled for August 20 at a distance of about 634,000 miles.

About two thirds of the 150 images expected by project scientists at the Ames Research Center in Mountain View, California, will view the planet with more detail than is possible through observations made from Earth. These high resolution photographs will be received at Ames from August 26 until September 8. The smallest object visible in the near-encounter images will be about 50 miles in diameter.

Transmission time for spacecraft data moving back to Earth at the speed of light will be 86 minutes, as compared to the 52 minutes required for Voyager 2 data to reach Earth from Jupiter.

Appearing to the Earth observer as a bright yellowish star of the first magnitude, Saturn is the sixth planet from the Sun, around which it revolves at an average distance of 886 million miles.

Saturn is only slightly smaller than Jupiter (it has a mean diameter of 75,000 miles as compared to Jupiter's 88,000 miles) and completes an orbit around the Sun every 29 and a half years. If the years are long, the days are short - it rotates on its axis every 10 hours, 14 minutes.

Difficult to observe in detail from Earth because of its great distance, Saturn is known to have a banded structure which is probably due to cloud systems similar to those of Jupiter. The atmosphere is believed to consist mainly of hydrogen and helium although methane and ammonia have been detected.

Saturn has 10 moons and Pioneer's instruments will be trained on the largest of them - Titan - to learn more about its atmosphere and clouds.

Pioneer will make its closest approach to Titan - a giant moon larger than Mercury and slightly smaller than Mars - at a distance of 220,700 miles on September 1.

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Saturn's most distinctive trademark is its elaborate ring system - believed to consist of ice, ice-covered rocks or ice imbedded with rocks. The rings have become less of an exclusive feature in recent years with the discovery of less spectacular ring structures on Jupiter and Uranus.

The Pioneer News Room will be opened at the Ames Research Center on August 27 and information may be obtained on coverage by calling Area Code 415-968-5091. Mission status reports may be obtained by calling Area Code 415-968-5600.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:
AUG 27 1979

Dick Young
305 867-2468

RELEASE NO: KSC 155-79

TWA SERVICES SELECTED FOR SPACEPORT VISITORS CENTER CONCESSION

KENNEDY SPACE CENTER, Fla.--A 10-year concession agreement designed to enhance facilities and services at the Kennedy Space Center's Visitors Center has been awarded to TWA Services Inc., Chicago, Ill.

Involved in the agreement will be the operation of the guided bus tours of the Kennedy Space Center and Cape Canaveral Air Force Station as well as management and operation of the Visitors Center.

TWAS has been concessionaire for KSC's public tour and visitor program since its inception in 1966. The firm was selected in July for negotiation of the new 10-year agreement as a result of a competition announced by KSC on January 24.

The 10-year agreement is effective May 1, 1980, and includes an option for five additional years.

Under the agreement, TWA Services will invest up to $8,501,000 in construction of new visitor facilities.

Among the projects contemplated are:

1. a 500-seat theater
2. Exhibits Maintenance Building
3. Exhibits Building
4. West Parking Lot and New Entrance Road
5. Moonscape and Lagoon
6. Central Receiving Building
7. Interconnecting Walkways and Landscaping
8. Rehabilitation of Saturn 1/1B Blockhouse 37 and Development of an Audio-Visual Presentation
9. IMAX (large screen format) Theater
10. New Food and souvenir Facilities

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KSC FORM QT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

The visitors program is basically self-supporting but NASA will provide some facilities, property and services for the concessionaire's use.

The Kennedy Space Center is NASA's principal east coast launch base but it is Florida's fourth most popular tourist destination as well. More than 1.6 million people came to KSC's Visitors Center in 1978 and a large percentage of them - some 1.3 million - took guided bus tours of KSC and Cape Canaveral Air Force Station.

The Visitors Center is accessible via the NASA Causeway off U. S. Route 1 two miles south of Titusville or Florida Route 3 from Merritt Island.

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NOTE TO EDITORS/NEWS DIRECTORS

A news conference on this new concession agreement and its promise for the future will be held in Theater 1 of the KSC Visitors Center at 10 a.m. on Wednesday, August 29. Answers to questions concerning the details of the agreement will be deferred until that time.

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

September 24, 1979

Mark Hess
305 867-2468

RELEASE NO: KSC 161-79

KSC RECEIVES EXPERIMENTS FOR FIRST SHUTTLE PAYLOAD

KENNEDY SPACE CENTER,Fla.--Two experiments that will be part of the first payload to be carried into space by the Space Shuttle Orbiter Columbia--the Shuttle Imaging Radar Antenna and the Ocean Color Experiment--have been delivered to the Kennedy Space Center. The remaining five experiments are scheduled to arrive here by the second week in October.

Columbia's first payload, called OSTA-1, is made up of seven experiments designed to carry out investigations for Earth resources applications. The payload, under the management of NASA's Office of Space and Terrestrial Applications (OSTA) will fly on the Space Shuttle's second Orbital Flight Test scheduled for launch from KSC.

The first orbital shuttle mission will carry instrumentation to evaluate its performance and will carry a special package called the Induced Environment Contamination Monitor to measure the effects of the Shuttle on the space immediately around it. The IECM will be carried on all six orbital flight test missions.

The payload carried on the second shuttle flight is reusable. This will permit adjustment and modification of the payload instruments and other hardware to allow its use on subsequent flights at relatively low cost.

Five of OSTA-1's seven experiments will be mounted to an Orbital Flight Test pallet, a 3-meter (10-foot) long, U-shaped structure that fits inside the orbiter's large cargo bay. The other two experiments will be located in Columbia's cabin.

Dr. Jim Ragusa, launch site support manager for the shuttle's first payload mission, said the pallet will be ready for mounting

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KSC FORM OT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

experiments about October 17. Since its arrival last December, the pallet has been housed in KSC's Operations and Checkout Building where technicians are outfitting it with systems for thermal control, electrical power and for commanding and acquiring data from the experiments.

Designed and assembled by the British Aerospace Corporation for the European Space Agency, as part of the joint ESA/NASA Spacelab program, the pallet is nearly identical to experiment pallets which will be used in Spacelab missions. This is the first of two pallet systems, with the next scheduled to carry physics and astronomy experiments on the fourth shuttle flight.

The first shuttle payload investigations are:

Shuttle Imaging Radar: Uses large 30-by-7-foot antenna to acquire data to evaluate a spaceborne imaging radar for geologic exploration, with particular emphasis on mineral exploration and fault mapping.

Ocean Color Experiment: Designed to evaluate a passive ocean color sensing technique for mapping the concentration of chlorophyl-producing phytoplankton in the open ocean.

Shuttle Multispectral Infrared Radiometer: Will obtain radiometric data from a number of geologic test locations around the world in 10 spectral bands.

Measurement of Air Pollution from Satellites: Will measure the variation in carbon monoxide-both natural and man-made--concentration levels in the atmosphere along the orbiter's flight path.

Feature Identification and Location Experiment: Will provide a means for identifying, spectrally classifying, physically locating and tracking surface features or clouds.

Night/Day Optical Survey of Thunderstorm-Lightning: First attempt to look at lightning from space to develop lightning prediction techniques.

Life Science Carry-On Experiment: Will determine the amount of moisture needed for plant/seedling growth in zero gravity. This experiment is the prototype for an experiment to be flown aboard the Spacelab 1 mission.

Ragusa said after all preparations are completed, the pallet will be turned over to a joint NASA/industry team for about four and one-half months of experiment integration. The payload will then be placed in a Cargo Integration Test Equipment stand,

which simulates the orbiter's cargo bay, for testing interfaces between the experiments/pallet and the vehicle.

About six weeks before launch, the payload will be sealed inside the payload canister for transport to the Orbiter Processing Facility and installation in Columbia.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

Rocky Raab
305-867-2468

October 2, 1979

RELEASE NO: KSC 166-79

THREE LAUNCHES REMAIN ON NASA's 1979 SCHEDULE

KENNEDY SPACE CENTER, Fla.--With seven successful launches posted thus far in 1979, only three more are scheduled during the remainder of the year.

The first of these will be from the NASA launch facilities at Vandenberg AFB in California on October 29. Called MAGSAT, it is a NASA applications satellite to study the earth's magnetic field. MAGSAT will be carried into a polar orbit aboard a Scout launch vehicle.

The two remaining launches will be conducted by the Kennedy Space Center in Florida. On December 4, FLTSATCOM-C will be launched by NASA for the military services. The Fleet Satellite Communications spacecraft will be shared by the U. S. Navy, U. S. Air Force, the Department of Defense and the Presidential Command Network. FLTSATCOM-C will be launched aboard an Atlas-Centaur rocket from NASA's Complex 36 and placed in a stationary orbit 22,300 miles above the equator.

Scheduled just two days later, on December 6, a domestic communications satellite called RCA-C will be launched from NASA's Complex 17 on a Delta rocket. RCA-C will be launched during a window extending from 8:35 to 8:44 p.m. and placed in a stationary orbit 22,300 miles above the equator. RCA-C is a 24 channel communications satellite, with each channel capable of carrying 1,000 voice circuits, one FM/color TV channel or 64 million bits per second of computer data.

The ten launches in 1979 represent the lowest rate for NASA in 20 years. In 1958 the newly formed NASA conducted only four launches. The fewest launches since that time has been 13, in 1977. Three other years saw 14 total launches, and the maximum was 36 launches in 1966.

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KSC FORM OT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

The current low launch rate is due to the transition between expendable launch vehicles and NASA's new and reusable space transportation system, the Space Shuttle. The Space Shuttle may be launched as often as 40 times per year after it becomes operational.

# # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

X something omitted

Oct 12

For Release:

Mark Hess
305 867-2468

October 12, 1979

RELEASE NO: KSC 176-79

KSC TO HOST SPACELAB 2 INVESTIGATOR WORKING GROUP OCT. 22-24

KENNEDY SPACE CENTER, Fla.--The Spacelab 2 Investigator Working Group, consisting of about 75 scientists and engineers selected to participate in the second Spacelab mission, will meet at the Kennedy Space Center October 22-24.

Spacelab is an orbiting laboratory that flies inside the Space Shuttle orbiter's cargo bay. Thirteen investigations will be flown on the Spacelab 2 mission, emphasizing astronomy, high energy astrophysics and solar physics research. Experiments will also be performed in plasma physics, botany and medicine.

Spacelab 2 is scheduled to be launched from KSC on the shuttle's 14th flight, operate in space for seven to 12 days, and land at KSC's Shuttle Landing Facility.

The Investigator Working Group consists of scientists serving as principal investigators for the experiments to be conducted during the mission, and NASA mission planners and design engineers.

Of the 13 investigations planned for Spacelab 2, 11 originate in the United States and two from the United Kingdom. Each investigators, resulting in the involvement of 47 scientists from across the country, and 12 from the U.K. The group was chosen from more than 1,000 candidates who responded to invitations to participate in the mission.

Spacelab is a joint venture involving NASA and the European Space Agency and organization representing 11 European nations. Analogous to a large truck used to haul trailers loaded with freight, the shuttle will routinely transport the reusable Spacelab into

-more-

orbit, crammed with facilities, equipment and experiments.

Like the first Spacelab mission, the primary objective of this mission is to verify the performance of Spacelab systems and subsystems and to measure the environment surrounding the Space Shuttle.

The secondary objective is to obtain scientific, applications and engineering data and to demonstrate the broad capability of Spacelab to perform space research.

Generally, Spacelabs consist of unpressurized frames, or pallets, for holding experiments and pressurized laboratory modules which can be arranged in several combinations within the payload bay of the orbiter. Spacelab 2 will be a pallets-only mission.

Spacelab 2 will consist of three 3-meter (10-foot) pallet segments, and a special structure designed to support a large cosmic-ray experiment, exposed to space in the orbiter cargo bay. Nine of the thirteen experiments are located on the three pallets, which serve as a mounting platform for the experiment instrumentation, and provide power, thermal conditioning, data and other services to the instruments. Two life sciences experiments will be carried in the orbiter's mid-deck, and one experiment involves only observations from the ground.

An important feature of the Spacelab 2 mission, is that many of the investigations capitalize on the new capabilities of shuttle and Spacelab. For example, the orbiter's weight-carrying capacity allows the use of a massive instrument such as the cosmic-ray experiment, along with several other large instruments. Another is an ejectable subsatellite to demonstrate the use of the shuttle's remote manipulator arm, the capability of the orbiter to launch subsatellites, and the ability of the spacecraft to maneuver about the subsatellite in space. The solar-oriented experiments will use an Instrument Pointing System which will accommodate the four experiments weighing a total of 547 kg (1,200 pounds) and aim them with pin-point accuracy.

The opening-day meeting of the Investigator Working Group will be devoted to detailed descriptions of the Spacelab 2 experiments by the principle investigators.

The remainder of the sessions will include presentations on other aspects of the mission, and to working discussions among the scientists and between the scientists and NASA design engineers and mission planners. A tour of the Kennedy Space Center is scheduled for October 23.

Mission scientist for Spacelab 2 is Dr. Eugene W. Urban of NASA's Marshall Space Flight Center, Huntsville, Ala. KSC's Launch Site Support Manager for the mission is Bud Wirman.

# # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Oct 26
~~Oct 29~~

X

For Release:

Dick Young
305 867-2468

October 26, 1979

RELEASE NO: KSC 183-79

NOTICE TO EDITORS/NEWS DIRECTORS

SPACE SHUTTLE STATUS BRIEFING SCHEDULED FOR OCTOBER 29

KENNEDY SPACE CENTER, Fla.--A press briefing on the status of Space Shuttle processing at the Kennedy Space Center will be held at noon on Monday, October 29.

Participating will be Dr. Robert H. Gray, Manager of KSC's Shuttle Projects Office, and Kenneth S. Kleinknecht, OV-102 Vehicle Manager for NASA's Johnson Space Center, Houston, Texas.

The briefing will be held in Room 2201 of the Headquarters Building and media representatives who wish to attend should be at the KSC News Center, Room 1207, Headquarters Building, no later than 11:45 a.m.

Media representatives unable to attend may monitor the briefing by calling the KSC Operator at 867-7110 and requesting that they be connected with the V-2 Circuit.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

X

Mark Hess
305 867-2468

For Release:

November 5, 1979

RELEASE NO: KSC 188-79

NASA TOUR FIGURES UP - FOUR MONTH DECLINE ENDS

KENNEDY SPACE CENTER, Fla.--Guided bus tours of the John F. Kennedy Space Center for the month of October were up 2.3 percent over the same month in 1978, breaking a four consecutive month decline in tour patronage that began in June, when gas shortages cropped up around the country.

Guided bus tours of the nation's Spaceport and adjacent Cape Canaveral Air Force Station attracted 64,437 visitors during October, compared to 62,989 for the same month a year ago.

October tour patronage brought the cumulative total for the first 10 months of 1979 to 1,122,160, a drop of 1.2 percent below the 1,135,318 recorded over the same period of 1978.

Tour patronage through May of this year had been proceeding at a record pace as the Spaceport continued its buildup for the first manned orbital flight of the Space Shuttle.

But nationwide fuel shortages at the beginning of Florida's heavy summer tourist season caused attendance figures from June through September to drop. As fears of gas shortages around the state have eased, patronage has steadily increased.

In anticipation of increasing numbers of visitors to the Kennedy Space Center when the Space Shuttle begins operational and routine flights into space, TWA Services, KSC's concessionaire for the public tour and visitor program recently announced it will invest up to $8.5 million in construction of new visitor facilities.

Guided bus tours are conducted from the KSC Visitors Center from 8 a.m. until two hours before dark every day of the year with the exception of Christmas.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Nov 30

For Release:

Dick Young
305-867-2468

November 30, 1979

RELEASE NO: KSC 239-79

NOTICE TO EDITORS/NEWS DIRECTORS

SPACE SHUTTLE, RCA SATCOM-3, NEWS CONFERENCES SET DECEMBER 5

KENNEDY SPACE CENTER, Fla.--News conferences on the status of the Space Shuttle program and the launch of RCA's SATCOM-3 communications satellite will be held at the Kennedy Space Center on Wednesday, December 5.

At 11 a.m. EST, John F. Yardley, NASA's Associate Administrator for Space Transportation System Acquisition, will make a presentation on the status of the Space Shuttle and respond to questions from the press.

This briefing will be held in the Fourth Floor Conference Room of the KSC Headquarters Building and media representatives who plan to attend should be in the KSC News Center in Room 1207 of the Headquarters Building no later than 10:45 a.m.

The second news conference of the day will be held in the Conference Room of the E&O Building, Cape Canaveral Air Force Station, beginning at 1 p.m.

This conference is on the RCA SATCOM-3 communications satellite scheduled for launch by KSC aboard a Delta rocket on Thursday, December 6. Launch and mission operations will be outlined by project officials. The launch opportunity for the COMSAT-3 mission extends from 8:35 to 8:47 p.m. EST.

Media representatives who plan to attend the RCA SATCOM-3 news conference should be in the KSC News Center, Room 1207, Headquarters Building, no later than 12:45 p.m. EST.

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KSC FORM OT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

Transportation to and from the news conference will be provided.

Media representatives unable to attend these conferences in person may monitor them by calling the KSC Operator at 867-7110 and asking to be patched into the V-2 circuit.

On launch day, permanently badged press may proceed directly to Press Site 1 at Cape Canaveral Air Force Station. Others will be badged at the Cape Canaveral Air Force Station Pass and Identification Building on Florida Route 401 near the Cape's south gate beginning at 7 p.m.

Launch commentary will be carried on the V-2 circuit from about T minus 1 hour until the end of powered flight and spacecraft separation approximately 25 minutes after liftoff.

# # #

NASA News
National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

December 13, 1979

Bob Gordon
713-483-5111

Dick Young
305 867-2468

RELEASE NO: KSC 246-79

COLUMBIA SCHEDULED TO BEGIN MAJOR SYSTEMS TEST ON DECEMBER 15

KENNEDY SPACE CENTER, Fla.--The Columbia, the first Space Shuttle orbiter to be flown in space, will begin its first major simulated "flight", all systems test here on or about December 15. Astronauts and ground support teams will put the vehicle through an around-the-clock, five-day critical operational test.

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

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

Test objectives include the demonstration of selected orbiter hardware and software (computer programs), and subsystem operations during a mission timeline. In addition to nominal launch conditions, the test will put the astronauts and ground support teams through various flight anomalies.

The test is also designed to demonstrate the ability to switch from the primary to back-up flight control systems, the ability of ground support systems to support an orbiter countdown, and the

capability of the interface between the orbiter onboard software with the Mission Control Center in Houston.

"It's a critical test for us," said George F. Page, the Kennedy Space Center's director of shuttle operations. "It's a crucial check of the compatability of the Launch Processing System with the orbiter in a configuration as close to launch as we can simulate at this time."

Page also noted that the OIT will test the automatic terminal countdown procedures which will monitor critical pre-flight functions being conducted too rapidly for human launch controllers to manage them manually.

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

The test will take place in the KSC's Orbiter Processing Facility where Columbia is undergoing final assembly and various aspects of checkout. The vehicle will be resting on its landing gear throughout the test. Power for the test will be furnished by the orbiter's electricity-producing fuel cells or ground support via an umbilical. Launch sequences of the ignition of the three shuttle main engines and the two solid rocket boosters, which provide the 6.9 million pounds of thrust necessary to place the spacecraft in orbit, will be simulated.

The test is divided into five runs with the first day devoted to buildup and checkout of vehicle and ground systems. Astronaut crewmembers will be in the cockpit through all phases and on the second day the crew will wear pressure suits through the operation which includes a nominal launch and entry. The crew will be transferred from the crew quarters and enter the vehicle as they would on launch day.

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

Firing Room 1 in KSC's Launch Control Center will be used to conduct the test. On hand will be a test team of about 120 engineers and technicians, comparable to the size of the launch team to be used on early Space Shuttle missions.

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Data from KSC will flow into the Mission Control Center's Operations Control Room at the Johnson Space Center where it will be monitored by flight controllers. Key parameters of systems performance will be observed by controllers who will later be on the scene during the actual launch and flight of the Space Shuttle.

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

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

Dick Young
305 867-2468

December 21, 1979

RELEASE NO: KSC 249-79

SHUTTLE LANDING FACILITY OPEN FOR EMERGENCY LANDINGS BY SANTA

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center's Shuttle Landing Facility (SLF), regarded as one of the world's best airstrips, will be open for emergency landings by Jolly Old Saint Nick if his high-flying reindeer encounter technical problems during his annual rounds on Christmas Eve.

The Shuttle Landing Facility has a concrete runway 15,000 feet long and 300 feet wide which will be used by the Space Shuttle orbiter returning from missions in Earth orbit beginning with the fifth orbital test flight. Landings from the first four missions will be made at the Dryden Flight Research Center at Edwards, California.

"The center will be closed on Christmas Eve," noted Center Director Richard G. Smith, "but we've advised Santa's North Pole Headquarters that he's free to use the strip in event of an emergency."

Bill Study, Airport Manager, added that the Shuttle Landing Facility has a sophisticated electronic landing system which would enable Santa to land under the most unfavorable weather conditions.

"Flying weather can be quite hairy around here in December," said Study, "and our field could prove real handy should one of Santa's reindeer have a flame-out, lose hydraulics or experience some other serious technical problem."

He noted that a recent service bulletin had advised him that Santa's new sleigh is equipped with avionics compatible with the landing facility's Microwave Scanning Beam Landing System, known affectionately to its operations as the "miss-bliss".

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KSC FORM OT-2016 (5/79) (ONETIME FORM - REPRINT NOT AUTHORIZED)

"It's a great system," said Study. "We could bring a blindfolded duck down safely through a zero-zero visibility pea-soup fog at midnight with it.

"Old Santa has a vital mission to perform," Study added. "And if he gets in trouble, we just want him to know that it's okay with NASA if he lands on our shuttle strip. In a way, it means that SLF will have a new meaning - Santa Landing Facility."

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Roland Raab
305 867-2468

December 20, 1979

RELEASE NO: KSC 251-79

SPACE "BIRDS" NOT ENDANGERED SPECIES

KENNEDY SPACE CENTER, Fla.--Dedicated "birdwatchers" along the sands of the Space Coast may have found some cobwebs in their binoculars this year, but the few launches they saw were all good ones.

The three Delta and two Atlas Centaur launches from NASA facilities here were all story book successes. Three of the missions put communications spacecraft into their transfer orbits, and two missions were for purely scientific purposes.

Beginning the year was a Delta launch on January 30 from Pad 17B. The 4:42 p.m. liftoff carried an Air Force satellite called SCATHA to a near-synchronous orbit. SCATHA (Spacecraft Charging at High Altitude) is the first satellite devoted primarily to studying static charges which accumulate on satellites at geosynchronous altitudes.

Operating in a near-synchronous orbit which allows it to drift about 925 kilometers (575 miles) either side of the equator and circle the earth each 60 days, the satellite has a planned mission life of one year.

The second launch of the year involved another military spacecraft, this time aboard an Atlas Centaur rocket from Pad 36A. The FLTSATCOM mission lifted off at 2:56 p.m. on May 4 to place the third in this series of military communications satellites in a geosynchronous orbit.

The FLTSATCOM spacecraft is designed to provide reliable communications for ships and submarines at sea, planes in the air and ground units throughout the world, as well as a link between the President and military commanding officers anywhere.

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The next mission from KSC facilities on Cape Canaveral Air Force Station was also a communications spacecraft, this time a Westar-3 commercial satellite. The Western Union satellite rode a Delta rocket launched from Pad 17A at 8:02 p.m. on August 9 and is now stationed at 91° west longitude over the equator.

From this position near the Galapagos Islands, it provides either color television, 600 two-way telephone calls or millions of bits of high-speed data for commercial users in the United States.

The second of the pure science spacecraft launched this year was NASA's HEAO-3. This High Energy Astronomy Observatory was boosted into a 455 to 540 kilometer (280 to 335 mile) high orbit by an Atlas Centaur rocket at 1:28 a.m. on September 20. The satellite is designed to detect x-rays, gamma rays and cosmic rays, allowing scientists to study processes inside celestial bodies such as stars, quasars, pulsars and black holes. The series of three HEAO spacecraft were among the heaviest to be launched by Atlas Centaur, each being in the 6,000 to 7,000 pound class. HEAO-3 has a planned lifetime of six months.

The final launch of the year placed RCA SATCOM 3 into a geosynchronous transfer orbit aboard a Delta rocket. However, when the apogee kick motor was fired under RCA control, the satellite was lost. Despite an extensive radar and radio search effort, the satellite has not been located. The 8:35 p.m. launch on December 6 was successful from a NASA viewpoint, with all vehicle parameters nearly perfect through spacecraft separation. The satellite was to have been the first to be dedicated to the cable television industry.

The nine total launches for 1979 (including four from other launch sites) is the lowest total for NASA in 20 years. In 1958 the newly formed NASA conducted only four launches. The fewest launches since that time has been 13, in 1977. Three other years saw 14 total launches, and the maximum was 36 launches in 1966.

The current low launch rate does not imply that the space "birds" are becoming extinct. Rather it marks the transition between the use of expendable launch vehicles like Delta and Atlas and NASA's new and reusable space transportation system, the Space Shuttle. When fully operational, the Space Shuttle will conduct up to 40 flights each year.

When that happens, the "birdwatchers" will need to keep their binoculars clean and handy to view all the action.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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X roundup

Dec 20

Rusty Dorr
305 867-2468

For Release:
December 24, 1979

RELEASE NO: KSC 252-79

LIGHT LAUNCH SCHEDULE REFLECTS TRANSITION TO SPACE SHUTTLE

KENNEDY SPACE CENTER, Fla.--Only five satellites will be launched aboard expendable rockets from the Kennedy Space Center in 1980, reflecting the transition to the reusable Space Shuttle which should begin flight testing in late summer or early fall.

The Space Shuttle's first flight will last some 54 hours from launch at KSC's Complex 39A to touchdown at NASA's Dryden Flight Research Center, Edwards AFB, California. The prime crew for the first flight will be Astronauts John Young and Robert Crippen. Members of the back-up crew are Joe Engle and Richard Truly.

In addition to the Space Shuttle's first flight, the Spaceport is scheduled to also launch three Atlas-Centaur and two Delta rockets which will carry military and commercial communications satellites, and scientific spacecraft into orbit. These missions will be launched from Kennedy Space Center facilities on the Cape Canaveral Air Force Station.

** FLTSATCOM-C, the third in a series of Fleet Satellite Communications satellites, will be 1980's first launch. It is scheduled for January 17 aboard an Atlas-Centaur rocket. FLTSATCOM-C will become part of a versatile military communications system, providing reliable, instant communications for United States military units throughout the world.

** The Solar Maximum Mission (SMM-A) is scheduled for launch in January or February aboard a Delta rocket. SMM-A is a NASA-funded scientific satellite which will study solar flares, sunspots and other temporary activity on the sun's surface, from Earth orbit. All other 1980 launches will be reimbursable, with the respective spacecraft owners bearing costs of the rockets and launch operations.

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** In August, the Geostationary Operational Enviromental Satellite-D (GOES-D) will lift off atop a Delta rocket. This weather satellite will collect meteorological and oceanographic data for the National Oceanic and Atmospheric Administration.

** The first of two INTELSAT V launches scheduled for 1980 will be launched on an Atlas-Centaur in September. These two satellites are part of a new series of high-capacity communication satellites for the 102-member nations of the International Telecommunications Satellite Organization. The second INTELSAT V will be launched sometime in December, also aboard an Atlas-Centaur.

According to Charles D. Gay, the Director of Deployable Payloads Operations at the Kennedy Space Center, the launch load for 1980 is a light one, but should not be viewed with concern. Expendable launches will increase to 10 in 1980, as the transition to the Space Shuttle continues.

Two possible call-up missions may be launched in 1980 from KSC facilities. FLTSATCOM-D, a fourth military communications satellite atop an Atlas-Centaur, and SBS-A, first in a new series of communications satellites for Satellite Business Systems, and riding a Delta into orbit, may be launched in late 1980.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Roland Raab
305 867-2468

December 31, 1979

RELEASE NO: 254-79

LIFTING WEIGHTS HELP ROCKETS SHAPE UP

KENNEDY SPACE CENTER, Fla.--Sometimes even the most perplexing problem can be solved just by taking a different approach. When the huge segments for the Space Shuttle's solid rocket motors began arriving here slightly out-of-round, that's just what engineers did.

Because the two solid rocket motors used to provide liftoff thrust for the Space Shuttle are much too big to ship in one piece, the manufacturer makes each in several segments, to be assembled at KSC before launch.

Each segment is over 12 feet in diameter and about 27 feet long, and four such segments make up each 150 foot solid rocket motor. The segments are basically steel cylinders filled with the rubber-like solid propellant. A hole about five feet in diameter runs through the center of the propellant combination that causes the out-of-round condition.

Because the segments are stored and shipped horizontally, the semi-elastic propellant tends to settle, slumping from the top and bulging out at the sides. The half-inch thick steel shell cannot prevent all such slumping, nor can special stiffening rings which are attached to each end of the segments.

So far, the worst case of slumping has been only about one inch out of round, but even this much makes it impossible to mate one segment to the next one at KSC. But how to get the segments back to round is a tricky situation.

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When you are dealing with an object that weighs more than 345,000 pounds, and is filled with rocket fuel, you don't take too many chances. One of the techniques KSC engineers tried was lifting the segment to a vertical position, then allowing them to hang for several hours before erection in a work stand.

But even a few days in the vertical stand could not make up for the months spent horizontal in storage and shipment. Longer hanging was not feasible due to processing schedules and the hazard involved.

Not only did the hanging not cure the out-of-round condition, but the engineers feared that the solid propellant might now slump in a different direction, causing the long cylinder to take a pinched waist effect. None of the distortions are visible to the naked eye, but are large enough to create significant problems with mismatch to the adjoining segment.

It was during a "what do we do next" conference call that the different approach popped up. Engineers noted that the lifting points for the powerful cranes were located at what were now the wide points at each end of the segment. By unbolting the attach points and reattaching them 90° from the original location, the lift points might tend to pull the segment back to round when lifted.

When they tried the novel lifting technique, the segment was measured and was found to be almost perfectly round. Nox Wiley, KSC's chief of solid rocket booster operations, said "It's not a black magic approach, just some engineers applying some sound, basic techniques to solve a problem."

Now that they understand the problem, Wiley said, the engineers can plan to use the new technique as a matter of course. It is a simple matter to either have the manufacturer add two more lifting points, or do the chore after each segment arrives at KSC.

Lifting weights the correct way can help people shape up, but now we know that it can also help the weight shape up. That is, if the weight happens to be a 150 ton piece of a rocket.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Jan 24 X

For Release:

Dick Young
305 867-2468

January 24, 1980

RELEASE NO: KSC 5-80

NOTICE TO EDITORS/NEWS DIRECTORS

NOZZLE PLUG TESTS, BUDGET BRIEFING, AWARDS CEREMONY PLANNED AT KSC

KENNEDY SPACE CENTER, Fla.--A number of events open to coverage by the news media will be held at the Kennedy Space Center this week and next.

The remotely-controlled nozzle plug which will play a major role in the recovery of the solid rocket boosters from the Atlantic Ocean after a Space Shuttle launch will undergo testing in the Trident Basin at Cape Canaveral Air Force Station from January 24-26.

Press coverage of these tests has been scheduled for 10 a.m. on Friday, January 25. Media representatives who plan to cover the tests should be at the South Gate to Cape Canaveral Air Force Station by 9:30 a.m. on Friday. Members of the press with questions concerning the tests and their coverage should contact Roland Raab of our office at Area Code 305-867-2468.

A briefing on the NASA Fiscal Year 1981 budget will be open for press coverage in the KSC News Center, Room 1207, Headquarters Building, on Saturday, January 26, at 4 p.m. The budget briefing, conducted at NASA Headquarters, Washington, D. C., will be "piped" into the KSC News Center. Stories on the budget and its contents are embargoed for publication before 10 a.m. Monday, January 28, when the budget is scheduled for presentation to The Congress.

The Silver Snoopy Award will be presented to 65 KSC civil service and contractor employees by Center Director Richard G. Smith and Space Shuttle prime crew astronauts John Young and Robert Crippen in a ceremony to be held in the KSC Training Auditorium Monday, January 28, at 1 p.m.

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The Silver Snoopy Award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance in manned space flight programs. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

Press representatives who plan to attend the awards ceremony should be at the KSC News Center by 12:30 p.m. on Monday, January 28.

# # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

May 29

For Release

Rusty Dorr
305 867-2468

May 29, 1980

RELEASE NO: KSC 95-80

NASA PROVIDES SANCTUARY FOR BELEAGUERED MANATEE

KENNEDY SPACE CENTER, Fla.--The state of Florida has become the last refuge for the manatee, an endangered species with numbers decreasing at an alarming rate. Brevard County, in which the Kennedy Space Center is mainly located, has the highest incidence of manatee deaths in the state.

This alarming statistic has caused NASA to focus its attention on this native Floridian and to take steps to ensure its survival in the brackish rivers and lagoons surrounding the nation's Spaceport.

KSC is also the home of the Merritt Island National Wildlife Refuge, which is inhabited by hundreds of species of coastal plants and boasts a wide variety of birds, animals and reptiles. Twelve species of birds, mammals and reptiles here are on the endangered or threatened lists, more than in any other single location in the lower 48 states. All center activities are coordinated so that interference with the indigenous wildlife is kept to a minimum.

The manatee, or sea cow, is a large ponderous animal shaped like a fat cigar with two small, front flippers and a broad, spatula-shaped tail. Strictly vegetarian, these gentle creatures consume up to 100 pounds of food per day and may grow to over 12 feet in length and weigh over 1,000 pounds.

At one point, manatees flourished throughout the coastal states of the southeastern U. S., but were hunted extensively for their meat, blubber and ivory-like bones. Their numbers dwindled to the point where the entire U. S. population, estimated at about 1,000, now lives in Florida waters. Manatees have been protected by state law since 1893 and the Marine Mammal Act of 1972 bans hunting them in U. S. waters.

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The manatee has no natural enemy today, except for human carelessness or vandalism. Man accounts for about half of all manatee deaths. Herbicides and spreading shoreline development are gradually destroying their feeding and breeding grounds. The greatest culprit, however, is the power boat's lethal propellor blade. Boating accidents caused one-third of all manatee deaths last year.

The manatee is a mammal and must surface every few minutes to breathe. The slow-moving animal usually raises its snout just above water, making it an extremely vulnerable and well-hidden target for fast-moving motorboats. Most adult manatees bear the scars of a close encounter with their destructive neighbors.

The Merritt Island Wildlife Refuge reports that about 20 per cent of the nation's manatees spend at least a part of the year on the Space Center. NASA has recognized its responsibilities toward these vulnerable animals and is working to ensure a peaceful, productive co-existence.

David Dunsmoor, an environmental engineer at KSC, reports that several projects have been undertaken by NASA to study the manatee. Space technology was used to develop tracking devices which permitted wildlife workers to monitor the routes travelled by individual manatees. NASA funded aerial surveys in and around KSC to learn more about populations and group migratory habits. These studies have provided valuable insight concerning warm and cold weather feeding grounds, permitting Spaceport engineers to schedule work in specific areas when the manatees will be absent.

Anyone who operates a boat under U. S. Government control in KSC waters must take a manatee-training class, taught by the U. S. Fish and Wildlife Service. This course has also been taught to area Coast Guard members, who will hold classes for the general public.

Even the Space Shuttle program has had to make some allowances for manatees, although in this case the changes are going to benefit both parties. NASA will be using ships which have the function of recovering the spent solid rocket boosters after they are jettisoned from the Space Shuttle and land some 150 miles off the Florida east coast. These large, trawler-like vessels will be docked in one of the manatees' favorite feeding grounds in the Banana River.

The ships will be outfitted with a jet propulsion unit which can maneuver the ship in any direction at a low speed without the use of the ship's large propellors. Not only will these propulsion units be safer for the manatees, but they will be useful in retrieving the SRB's at sea. By switching to jet propulsion, the possibility of parachute lines being entangled

in spinning propellors will be eliminated during the SRB recovery procedure.

Besides these specific projects designed for use at KSC, NASA environmentalists also serve on various committees and working groups, such as the Florida State Endangered and Threatened Species Advisory Council. Space-age technology plus an old-fashioned concern for other living creatures are creating an environment where the manatee and the nation's space program can live together to the benefit of both.

# # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867 2468

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no date!

Dick Young
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For Release

IMMEDIATE

KSC RELEASE NO. 206-80

PREPARATIONS UNDERWAY FOR FIRST MAJOR SHUTTLE TEST

KENNEDY SPACE CENTER, FL. -- The orbiter Columbia has been mated with other Space Shuttle elements on a Mobile Launcher Platform in the Vehicle Assembly Building and preparations are underway for its first major test as a unified system - the Shuttle Interface Test.

The Columbia was moved the 300 yards from the Orbiter Processing Facility to the Vehicle Assembly Building on November 24 and mated with the external tank and solid rocket boosters assembled earlier on the mobile launcher platform.

The Shuttle Interface Test will run for more than two weeks and is designed to check out the mechanical and electrical connections between the various elements and the functioning of onboard flight systems.

This is the first flow of flight hardware through KSC's processing facilities. The Space Shuttle Orbiter Enterprise - which will not be flown in space - was used in a "pathfinder" flow through the facilities in 1979 but it lacked many of the systems essential for space flight which are aboard Columbia.

The SIT was originally scheduled to begin earlier this week but was delayed to begin no earlier than 1 a.m. EST Thursday, December 4. ?
The delay is due to a number of minor problems, among them the failure of a jacking and locking device on one of the two tail service masts which provide umbilical links with the orbiter.

The device is used for final adjustments in connecting the tail service mast carrier plate to the orbiter. The failure occurred only on one of the two tail service masts (the oxygen side) and the remaining unit (on the hydrogen side) is being used to affect the final connections.

It is expected that the connections will be made in time to permit the beginning of the test on Thursday.

- more -

KSC NO. 206-80

The umbilicals on the tail service masts provide electrical, fluid and gas services to the orbiter during pre-flight processing and are automatically disconnected at liftoff.

The Columbia's systems received a thorough checkout during the Orbiter Integrated Test conducted in late 1979 and early 1980. During that test, the operations of systems on the external tank which carries propellants for the orbiter's main engines and the twin solid rocket boosters was simulated.

During the forthcoming test, the entire Space Shuttle system will be tested as a unit to determine its readiness for flight. The orbiter's main enginenozzles, elevons, rudder and speedbrake, and body flap will be moved as they would be in flight and the solid rocket booster nozzles will also be gimbaled.

During the latter part of the test, the prime and backup crews for the first Space Shuttle mission - Astronauts John Young and Bob Crippen, and Joe Engle and Richard Truly - will participate in a number of simulations of ascents to orbit, launch and first orbit abort, and a descent from orbit to a landing.

"We have a number of 'firsts' coming up on this test," commented William H. Shick, Chief of the Prelaunch Test Operations Branch.

"We'll have about 150 personnel in Firing Room 1, the first time we've had entire Space Shuttle firing room crew here at one time," Schick added.

"It will also be the first time that the astronauts have been in the orbiter's cabin while the vehicle is in a vertical position. This will permit them to get a feel of what they can and can't reach and make an assessment of crew comfort while waiting on the pad for launch," said Schick.

While preparations are underway in the Vehicle Assembly Building for the Shuttle Interface, the work of filling the 900,000 gallon liquid oxygen tank at Complex 39's Pad A is proceeding.

Nine tank truck loads of "lox" were delivered to Pad A on Monday and a delivery rate of 10 tank truck loads per day is expected to continue for the next two and a half weeks.

The validation of Pad A's hypergolic farm system has been completed and cleanup work is in process.

# # # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
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AC 305 867-2468

No date!

Dick Young
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For Release:
Immediate

KSC NEWS RELEASE NO. 261-80

SHUTTLE INTERFACE TEST ENTERS SECOND WEEK

KENNEDY SPACE CENTER, FL.-- The Space Shuttle's first major test as an integrated flight system is in its second week in the Vehicle Assembly Building and flight crew members are to enter the Columbia's cabin this weekend to begin a series of flight simulations.

The Shuttle Interface Test began at 2 a.m. on December 4 and has continued around-the-clock since that time. The Space Shuttle Orbiter Columbia was moved to the Vehicle Assembly Building for mating with the shuttle's other elements - the external tank and solid rocket boosters - on a mobile launcher platform on November 24.

The test will run for more than two weeks and is designed to check out the mechanical and electrical connections between the various elements and the functioning of onboard flight systems.

Shuttle interfaces and individual systems have undergone extensive testing during the past week, including the mobile launcher platform/ orbiter liftoff umbilicals, external tank tumble system and the calibration of the orbiter's inertial measurement unit.

The orbiter's main engine nozzles were gimbaled and atmospheric flight control surfaces such as elevons, rudder/speed brake and body flap were moved to check clearances. The orbiter's auxiliary power units were not activated for this test; hydraulic power was provided by ground units in the VAB.

Checkout entered the integrated stage early on the morning of December 10 with the shuttle flight control integrated test. This test is designed to verify the ability of the orbiter's onboard computers to steer the solid rocket boosters during the ascent into orbit. The boosters are steered by hydraulically moving the solid motor nozzles.

Prime crew astronauts John Young and Bob Crippen and backup crewmen Joe Engle and Richard Truly are to participate in a series of flight

-more-

simulations scheduled to begin late Sunday afternoon, December 14.

These simulations are of ascents to orbit, return to launch site and single orbit aborts, and descents from orbit to landing. These tests are designed to validate primary and backup computer programs for the onboard flight system.

The T-zero for the first simulation is tentatively scheduled for 7 p.m. Sunday, December 14, the second 16 hours later and the remainder of the runs will be scheduled at 12 hour intervals.

Although the crew participation has not yet been firmed up, it is likely that Engle and Truly will be at KSC on December 13-14, Young and Crippen on December 15-16. The crews will alternate as permitted by their training assignments at the Johnson Space Center in Houston, Texas.

The thermal protection system work left open from the Orbiter Processing Facility has been resumed in the Vehicle Assembly Building. In excess of 2,000 gap fillers are being inserted between the TPS tiles and this work should be completed with no impact on a scheduled rollout from the VAB to Pad A in late December.

In addition, 24 tiles located in various positions on the orbiter are being replaced. Ten of these were damaged during the move to the VAB or during mating operations; 14 tiles are being removed to be reconfigured to meet step and gap requirements.

In other shuttle-related activity during the week, the payload cannister which will be used to transport shuttle payloads around the various KSC facilities is undergoing testing.

The cannister, with two dummy payloads installed, was hoisted to the vertical position on top of the cannister transporter in the VAB and moved to the pad on December 9. On December 10, engineers began testing procedures which will be used at the pad's Rotating Service Structure to hoist the cannister, attach the Payload Ground Handling Mechanism and move the dummy payloads into the Rotating Service Structure and lower the cannister back down on the transporter.

The first Space Shuttle payload - OSTA-1 - has been moved from the ATM Clean Room in the Operations & Checkout Building and placed in the Cargo Integration Test Equipment (CITE) stands in the O&C high bay. Reinstallation of seven Earth resources-type experiments is being done in preparation for a major experiments/pallet interface test in February.

Two of three shipments containing the Spacelab engineering model have arrived at KSC. The third shipment will arrive December 13.

KSC NO. 261-80

The engineering model is designed as a "pathfinder" to verify the equipment and procedures which will be used to process the flight unit, scheduled for the first Spacelab mission in 1983.

The engineering model consists of a habitable module, pallets, handling equipment, documentation and computer software.

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NASA News

National Aeronautics and
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No date! Dec 17?

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For Release:
Immediate

See Dec 12

KSC NEWS RELEASE NO. 268-80

FLIGHT SIMULATIONS CONDUCTED AS SHUTTLE INTERFACE TEST NEARS END

KENNEDY SPACE CENTER, Fl. -- The Shuttle Interface Test which began December 4 is nearing an end. The test is being conducted in the Vehicle Assembly Building where the orbiter Columbia was moved for mating with the external tank and solid rocket boosters on November 24.

The test is the first major checkout of the Space Shuttle as an integrated flight system and its closing days entail a series of four simulated missions involving the prime and backup crews for the first Space Shuttle mission.

Backup astronauts Joe Engle and Dick Truly were aboard Columbia at 9:30 a.m. Wednesday, December 17, for a simulated liftoff and return to launch site abort which ended in a mock landing on KSC's Shuttle Landing Facility 24 minutes after liftoff.

Two simulations remain -- another return to launch site abort and a normal reentry and landing from orbit.

The simulations are designed to validate primary and backup computer programs to be used by onboard flight systems during the STS-1 mission scheduled for no earlier than March, 1981.

The last two simulations are scheduled for completion on Thursday, December 18. The SIT is to end late this week following the completion of the mission simulations, stray voltage checks and other windup activities.

In other shuttle related activity, the processing of gap fillers and tile work is continuing. The reinstallation of 24 thermal protection system tiles removed for various reasons should be completed by Sunday, December 21, and gap filler work scheduled for the VAB should be completed by Tuesday, December 23. A minimal amount of gap filler work will remain to be completed after the Space Shuttle is transferrd to Pad A at Complex 39.

-more-

Gap filler work to be carried to the pad is centered about the aft end of the orbiter and work areas will be easily accessible.

At Pad A, Launch Complex 39, filling of the liquid oxygen storage tank is scheduled for completion during the afternoon of Wednesday, December 17. The tank has a storage capacity in excess of 900,000 gallons. Validation of the hypergolic fluids systems continues. Oxidizer work should be completed December 17 and validation of the fuel side of the system will begin immediately on completion of that phase of the work.

The dummy payloads inserted in the Payload Ground Handling Mechanism in the Rotating Service Structure earlier this week are to be reinserted into the payload canister and removed from the pad on December 17.

Solid rocket booster casing retrieval tests are being conducted this week by the UTC Liberty. The tests with the Ocean Test Fixture and nozzle plug began on December 15 and will continue through December 19. The test area is located approximately 30 miles east of Cape Canaveral.

The Liberty's sister ship -- the UTC Freedom -- remains at the shipyard at Fort George Island, Fla., and is to undergo sea trials on December 18-19.

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John F. Kennedy Space Center
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Mark Hess
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For Release:
Immediate
December 23, 1980

KSC NEWS RELEASE NO. 275-80

FINAL PREPS UNDERWAY FOR STS-1 MOVE TO LAUNCH PAD

KENNEDY SPACE CENTER, FL. -- Final preparations are underway for moving the Space Shuttle vehicle from the Vehicle Assembly Building to Launch Complex 39's Pad A. The move is scheduled for Monday, December 29.

Stacking of the first Space Shuttle vehicle was completed with the mating of the Orbiter Columbia to the other Shuttle components - the external propellant tank and solid rocket boosters - on November 24 in the VAB's High Bay 3.

Extensive tests have been conducted on the STS-1 vehicle to verify the various mechanical and electrical connections between the Shuttle's flight elements and the ground support systems used to checkout, fuel and launch the Shuttle.

Another major test was also performed - the Shuttle Interface Test - which was the first large-scale checkout of the Space Shuttle as an integrated flight system. The SIT included four simulated missions involving the prime and backup crews for the first Shuttle flight. The simulations were conducted to validate primary and backup computer programs to be used by onboard flight systems during the STS-1 mission, scheduled for no earlier than March, 1981.

The Shuttle Interface Test ended on Dec. 19 with the completion of the last simulated flight, a descent from orbit to a make-believe landing at the prime landing site for the first shuttle flight, Edwards Air Force Base, California.

With the SIT finished, ordnance work began. Ordnance includes all the explosive devices installed on the STS-1 vehicle which are used to separate various components - such as the solid rocket boosters and external tank - from one another during the flight. Installation and checkout of ordnance was completed December 23.

Columbia is scheduled to be powered down at midnight on December 23, following final closure between the external tank and twin solid rocket boosters, calibration of the Inertial Measurement Unit and installation and retest of the Input/Output Processors, part of the orbiter's General Purpose Computers.

One of the orbiter's navigation systems, the IMU provides data

to the orbiter's computers about the vehicle's attitude, position, acceleration and velocity. In orbit, the IMU is aligned using celestial navigation instruments.

The IOPs were removed following the completion of the SIT and improvements made in the reliability of the units. Reinstallation and retest is in progress. The IOPs are the parts of the orbiter's data processing system that translate information from the vehicle's central processing unit into commands which they relay to the vehicle systems.

Processing of gap fillers and tile work is continuing. The re-installation of 4 thermal protection system tiles removed for various reasons is scheduled for completion December 24, and gap filler closeout work required prior to rollout is scheduled to be completed by Dec. 27. A minimal amount of gap filler work will remain to be completed after the Space Shuttle is transferred to Pad A. Gap filler work to be carried to the pad is centered about the aft end of the orbiter and work areas will be accessible.

In preparation for the move, one of two Crawler-Transporters at KSC was moved from its park site to the east side of the VAB in front of High Bay 3. On Sunday, December 28, the crawler will be moved inside the VAB and positioned underneath the Mobile Launcher Platform.

Dismantling of all but essential access platforms in High Bay 3 is also underway.

A final review of VAB testing and Pad A status will be conducted by senior NASA management prior to rollout to verify all scheduled program objectives have been met and there are no constraints for the rollout to the launch pad.

In other Shuttle related activity work on the external tank needed to support the rollout is essentially complete. During the past week, the devices used to safe and arm the solid rocket booster igniters were installed, and valves that control the flow level of hydrazine into the SRB's thrust vector control system were replaced.

Solid rocket booster casing retrieval tests with the UTC Liberty were concluded. However, one of two dewatering nozzle plugs failed at various weld joints and broke into two pieces during the sea tests. The pieces were retrieved and a failure analysis team is investigating the problem.

Full-scale simulations of a Return to Launch Site abort were successfully conducted at the Shuttle Landing Facility. Hook up of critical ground support cooling and purge units to a mockup of the aft end of the orbiter were performed well within the 15 minute design criteria. The activities were to simulate convoy operations at the Shuttle Landing Facility in the event the orbiter returns to KSC for a landing on the 15,000-foot long runway shortly after liftoff.

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867-2468

For Release.

IMMEDIATE

KSC NEWS RELEASE NO. 13-81

DELTA BOOSTER FOR GOES MISSION DAMAGED

Kennedy Space Center, FL. --- A Delta rocket booster being prepared for a March space mission was damaged today at Complex 17 on Cape Canaveral Air Force Station.

The first stage and interstage adaptor for the Delta booster had been erected earlier this week, and the first three of nine solid rocket motors had been placed in slings inside the launch pad mobile tower. As the tower was being moved into place for installation of the three rocket motors this morning, a large door at the top of the tower struck the top two feet of the 15.5 foot tall interstage adaptor.

The moving tower caused the Delta booster to tilt several feet from the vertical, in turn causing two of three booster holddown bolts to pull free from the launcher mounts. The Delta then tilted back into the tower, where it came to rest. The three solid rocket motors were not damaged in the incident, and there were no injuries to workers.

At the present time, the vehicle is standing against the mobile tower, several degrees from the vertical. The interstage adaptor is deformed about six inches, and there is some deformation to the engine section attach points, at the fuel tank connection. Additional damage to the booster is still being assessed, and it is not known if the vehicle will be usable for the GOES-E mission for which it was being prepared.

The Delta rocket first stage stands 74 feet tall, and is topped by the 15.5 foot interstage adaptor. The second stage, which fits down inside the adaptor, was not yet installed in the rocket.

The GOES-E mission, to boost an advanced weather satellite into geosynchronous transfer orbit, had been scheduled for March 12. The impact of the incident on the launch date has not been determined.

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January 22, 1981

NASA News

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Jun 12

For Release:

Mark Hess
305 867-2468

Immediate

KSC RELEASE NO. 165-81

EIGHT LAUNCHES OF EXPENDABLE VEHICLES REMAIN SCHEDULED IN 1981

KENNEDY SPACE CENTER, Fla.--Eight more launches of expendable rockets from NASA facilities on the East and West coast are scheduled in 1981. As many as five more rockets may be launched by NASA's Kennedy Space Center in 1981 from facilities on Cape Canaveral Air Force Station, and three launches are planned from KSC facilities at Vandenberg Air Force Base, California.

Launches planned from Cape Canaveral are divided between the workhorse Delta rocket and NASA's most powerful expendable vehicle - the Atlas Centaur. Vehicles launched from Vandenberg will include two Delta rockets and an Atlas-F, launched by the Air Force with NASA performing a monitor-only role.

NASA has successfully launched three rockets this year. The first launch of 1981 occurred on February 21 - that of an Atlas Centaur rocket carrying a COMSTAR commercial communications satellite.

Back-to-back launches followed in May. On May 22, the GOES -E weather satellite was successfully hurled into geosynchronous orbit aboard a Delta rocket. Little more that 24 hours later, Atlas Centaur 56 rocketed away from its launch pad, putting an INTELSAT V communications satellite into orbit some 22,240 miles above the equator over the Atlantic Ocean.

All of the remaining launches scheduled from Cape Canaveral are reimbursable missions - which means the customer reimburses NASA for the cost of the rocket and all related launch services.

Launches planned aboard Atlas Centaur rockets include a FLTSATCOM-E, military communications satellites, and an INTELSAT V commercial communications satellites.

Planned for launch aboard Delta rockets are two RCA commerical communications satellites - RCA D and RCA Prime - and the second in a series of Satellite Business Systems satellites - SBS-B - used for business communications needs.

Each of the five remaining spacecraft to be launched from

Cape Canaveral are intended for geosynchronous orbit 22,240 miles above the Earth's equator.

Launches planned from NASA's West Coast facility include a polar-orbiting weather satellite - NOAA-C - aboard an Atlas F rocket, and two NASA scientific spacecraft, the Dynamic Explorer and the Solar Mesospheric Explorer. Both of the NASA scientific payloads will be launched on Delta rockets.

Launch dates listed below are tentative. Final determination of the exact launch date will be made closer to launch.

MISSION	VEHICLE	SITE	PREDICTED LAUNCH DATE
NOAA-C	ATLAS-F	WTR	JUNE 22
DE	DELTA 157	WTR	JULY 31
FLTSATCOM-E	AC-59	36-A	AUG 6
SBS-B	DELTA 155	17-A	AUG 20**
INTELSAT V F-3	AC-55	36-B	SEPT 24
SME	DELTA 158	WTR	SEPT 15
RCA-D	DELTA 156	17-A	OCT 15**
RCA-Prime	DELTA 159	17-A	DEC 3**

**These launch dates depend upon resolution of problem with Payload Assist Module

# # #

June 12, 1981

NASA News

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For Release:

Andrea Shea-King
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IMMEDIATE

KSC RELEASE NO. 175-85

OSCEOLA BUSINESS LEADERS TO LEARN ABOUT SPACE STATION

KENNEDY SPACE CENTER, Fla. -- What kind of impact Space Station will have on the Central Florida area will be discussed when NASA spokesman Jim Ball addresses the Osceola County Comittee of 100.

The talk will be given at 12:00 noon, Sept. 10, 1985 at the Orlando Hyatt, located at the intersection of US Hwy. 192 and Interstate 4 in Kissimmee.

Ball is a public affairs specialist at Kennedy Space Center. He is responsible for providing information about NASA and its activities to the general public.

Both the public and media are invited to attend this event. Those interested should contact Bill McCarty at (305) 847-3174 for further details.

Sept. 3, 1985

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NASA News

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For Release:

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KSC RELEASE NO. 176-85

ASSOCIATION OF UNIVERSITY WOMEN TO LEARN ABOUT SPACE PROGRAM

KENNEDY SPACE CENTER, Fla. -- NASA's Space Shuttle Program and related activities at Kennedy Space Center will be the topic of a presentation to be given on Sept. 16, when NASA spokesman Bob Miller addresses the American Association of University Women.

The talk will be given at 6 p.m. at the Community Church of Vero Beach in Vero Beach, Florida.

Miller is a Safety Assurance Officer with the Safety, R&QA, & Protective Services Directorate at KSC. He establishes Center policy regarding safety, reliability and quality assurance. Miller's duties also involve measuring compliance of those policies by contractor and KSC organizations.

The media is invited to cover this event and should contact Jean Wyatt at (305) 231-4106 for further details.

Sept. 3, 1985

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IMMEDIATE

KSC RELEASE NO. 178-85

SPACE EXPLORATION TO BE EXAMINED AT ANNUAL CONVENTION

KENNEDY SPACE CENTER, Fla. -- Space exploration is as inevitable today as the opening of the West was two centuries ago.

How we will go about that exploration is the subject of a presentation to be delivered by NASA spokesman Steve Dutczak before the Illinois League of Savings Institutions at its 106th annual convention.

The talk will be given Sept. 17, at 8:15 a.m. at the Hyatt Regency Grand Cypress Hotel in Orlando, Florida.

Dutczak is an educational specialist representing the Education and Awareness Office at NASA's Kennedy Space Center.

Media representatives are invited to cover this event and should contact Norma Altman at (217) 522-5575 for further details.

Sept. 3, 1985

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NASA News

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For Release:

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September 11, 1985

KSC RELEASE NO. 186-85

PLANNING RESEARCH CORP. SHUTTLE CENTAUR CONTRACT EXTENDED

KENNEDY SPACE CENTER, Fla. — NASA's John F. Kennedy Space Center has extended an existing contract with Planning Research Corporation (PRC) Systems Services Co. of Cocoa Beach, Florida. The $12,421,841 extension brings the total contract value to $66,187,413.

The agreement calls for PRC to provide engineering services for the Directorate of Engineering Development at the Kennedy Space Center, and at Vandenberg Air Force Base, California.

The cost-plus-fixed-fee contract extends the period of performance from January 1, 1986 through September 30, 1986.

Under the terms of the contract, PRC is responsible for designing ground support systems for the Shuttle Centaur program. The Shuttle Centaur will be used to inject space vehicles into interplanetary trajectories after deployment from the Space Shuttle.

First use of the high-energy Centaur upper stage will be on the Ulysses International Solar Polar Mission, which will explore the sun from an orbit over its polar zones and the Galileo Mission, an exploration of Jupiter's environment. These two interplanetary missions are scheduled to be launched, from KSC, within six days of each other in May, 1986.

PRC will also provide designs for Shuttle launch support equipment for the Department of Defense at VAFB. Vandenberg Air Force Base will become the second launch and landing facility for the Shuttle in the mid-1980's. VAFB will be used primarily by the Department of Defense to launch payloads into a polar orbit.

Another major responsibility under this contract is to provide KSC with designs for shuttle-cargo ground support equipment.

Planning Research Corp. has served as prime contractor to KSC's Engineering Development Directorate since 1974. In that role, the company designs ground systems and equipment in support of the Shuttle and its payloads at KSC and for the Department of Defense.

-30-

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

Debra J. Rahn
Headquarters, Washington, D.C.
(Phone: 202/453-2754)

September 12, 1985

Maurice Parker
Langley Research Center, Hampton, Va.
(Phone: 804/865-2935)

Release No. 85-127

ORBITER COLUMBIA MODIFIED FOR REENTRY RESEARCH

Significant changes have been made to Columbia, NASA's first Space Shuttle orbiter, to accommodate three research experiments to measure orbiter aerodynamic and thermodynamic characteristics as it reenters Earth's atmosphere. Researchers will use this flight data to develop future generation space transportation systems.

The most obvious change in Columbia's appearance is a cylindrical housing which replaced the fintip atop the vertical tail. The new experiment pod is approximately 20 inches in diameter and is capped at the leading edge by a spherical dome. The pod contains equipment for the Shuttle Infrared Leeside Temperature Sensing (SILTS) experiment.

SILTS will obtain high-resolution, infrared images of the upper (leeside) surfaces of Columbia's port wing and fuselage as the orbiter reenters Earth's atmosphere. The infrared images will provide detailed temperature maps at the surface of the leeside thermal protection materials. The maps will indicate the amount of aerodynamic heating of the surfaces in flight, acquiring data that cannot be adequately simulated in ground tests.

SILTS images will be obtained by an infrared camera, mounted inside the dome, that will view Columbia's left wing and fuselage through two windows. The windows will be protected from debris during launch by plugs that fill the window cavities. The plugs will be ejected when the experiment begins, and the windows will be actively cooled during reentry by the injection of gaseous nitrogen into the cavities. Experiment data will be stored on a tape recorder.

- more -

The experiment will be initiated by Columbia's computer at the time of entry interface, about 400,000 feet above Earth. It will end after the orbiter passes through the period of significant aerodynamic heating.

A less obvious change to Columbia is a completely new nosecap to house the Shuttle Entry Air Data System (SEADS) experiment. The nosecap has 14 penetration assemblies distributed about its surface, each containing a small hole through which local surface air pressure will be measured during reentry.

Measurement of the distribution of air pressure about the nosecap will allow precise post-flight determination of the orbiter's attitude relative to the oncoming airstream and the density of the atmosphere through which the vehicle has flown.

Accurate knowledge of these factors, coupled with vehicle motion information measured by a separate experiment, are required to determine orbiter aerodynamic flight characteristics. The lack of accurate air data has prevented scientists from determining exact orbiter inflight aerodynamic characteristics. SEADS will provide accurate data from an altitude of about 56 miles through landing.

A third experiment, not visible from outside the orbiter, is inside the nose wheel well. The Shuttle Upper Atmosphere Mass Spectrometer (SUMS) will complement the SEADS experiment by providing atmospheric density information at altitudes above 50 miles.

SUMS will sample air at Columbia's surface through a small hole, located just aft of the nosecap, to measure the number of molecules of various gas species. The information will be used to determine the atmospheric density that, with vehicle motion information, will allow determination of orbiter aerodynamic characteristics at altitudes where the atmosphere is extremely thin. Aerodynamic flight at these altitudes cannot be simulated in ground tests.

The SUMS instrument is a mass spectrometer originally developed for the Viking spacecraft that landed on Mars in 1976. It has been modified to operate in the reentry flight environment of the orbiter.

The experiments were developed at NASA's Langley Research Center, Hampton, Va., as part of the Orbiter Experiments Program, managed by NASA's Office of Aeronautics and Space Technology, Washington, D.C.

Columbia spent the past 18 months at Rockwell International Corp.'s facility in Palmdale, Calif., receiving these and other extensive modifications. Recently transferred from Palmdale to Kennedy Space Center, Fla., Columbia is scheduled to return to space in December 1985.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
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For Release:

Charles Redmond
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September 12, 1985

RELEASE NO.: 85-128

NASA SELECTS ROCKWELL FOR SHUTTLE OPERATIONS CONTRACT

NASA announced today that Rockwell Shuttle Operations Co., Houston, Texas, has been selected for negotiations leading to an award of the Space Transportion System Operations Contract (STSOC) at the Johnson Space Center, Houston. Other team members include Bendix Field Engineering Corp., Columbia, Md.; System Development Corp., Camarillo, Calif.; Omniplan Corp., Santa Monica, Calif.; RMS Technologies, Inc., Landover, Md.; and System Management American Corp., Norfolk, Va.

The 2-year award, with a 2-year priced option, will be for services beginning Jan. 1, 1986. Rockwell's proposal reflected a 4-year cost of approximately $685 million. Ultimately, follow-on awards could result in a total contract period of 15 years.

Johnson will manage the work under a cost-plus-incentive/award-fee contract arrangement which includes incentive fee on sound cost management and an award fee on the basis of performance.

Rockwell would be responsible for the performance of six major STSOC functions. Those functions are: (1) project management; (2) maintenance and operations; (3) sustaining engineering; (4) flight preparation requirements and analysis; (5) flight preparation production; and (6) direct mission operations, testing and support. The work involves such major facilities as the Mission Control Center, Shuttle Mission Simulator, Shuttle Avionics Integration Laboratory, Software Production Facility, Central Computing Facility and the Mockup and Integration Laboratory.

- more -

This selection represents the consolidation, into one contract, of work being performed by 16 firms under 22 contracts.

In addition to Rockwell, proposals were submitted by Ford Aerospace and Communications Corp. Space Information Systems Division, Houston; Grumman Space Operations Corp., Houston; and Lockheed Space Flight Co., Houston.

- end -

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IMMEDIATE

KSC RELEASE NO. 190-85

VERO BEACH CHURCH GROUP TO LEARN ABOUT SPACE PROGRAM

KENNEDY SPACE CENTER, Fla. -- NASA's Space Program and related activities at Kennedy Space Center will be the topic of a presentation to be given on Oct. 1, when NASA spokesman Mitch Varnes addresses the First Presbyterian Church Men's Fellowship group.

The talk will be given at 12 noon in the main hall of the First Presbyterian Church on Palm Blvd. in Vero Beach.

Varnes is a NASA Public Affairs Specialist with the Visitors Information Center at Kennedy Space Center.

Both the public and media representatives are invited to attend this event and should contact John Pollard or Joan Hickman at 305-231-5755 for further details.

Sept. 12, 1985

NASA News

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September 19, 1985

Steve Nesbitt
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RELEASE NO: 85-131

NASA NAMES TWO SPACE SHUTTLE CREWS

NASA today announced the astronaut crews for two upcoming Space Shuttle flights and changes or additions to the crews for three other flights.

Veteran astronaut John W. Young will command Shuttle flight 61-J, with the deployment of the Hubble Space Telescope, scheduled for August 1986. Charles F. Bolden Jr. has been assigned as pilot on 61-J. Three mission specialists already have been named to that flight. They are Kathryn D. Sullivan, Steven A. Hawley and Bruce McCandless.

The crew for mission 61-K, the rescheduled Earth Observations Mission, set for launch in September 1986, includes Vance D. Brand, commander; S. David Griggs, pilot; and mission specialists Robert C. Stewart, Owen K. Garriott and European Space Agency astronaut Claude Nicollier.

Two payload specialists, Michael Lampton and Byron K. Lichtenberg, already had been named for mission 61-K.

Shuttle mission 61-I, the retrieval of the Long Duration Exposure Facility and deployment of Intelsat VI-1, will be commanded by Donald E. Williams. Other crew members include pilot Michael J. Smith and mission specialists James P. Bagian, Bonnie J. Dunbar and Manley L. "Sonny" Carter.

Two changes have been made to crews of other flights. Norman E. Thagard replaces John M. Fabian on mission 61-G, the deployment of the Galileo interplanetary spacecraft scheduled in May 1986. Fabian will be leaving the agency in the near future. His plans are unannounced.

- more -

Thagard was scheduled to fly on mission 61-H, scheduled for launch in June 1986, and will be replaced by James F. Buchli.

Young will be making his seventh space flight and his third in the Shuttle program with 61-J. He was commander of STS-1 in April 1981, the first mission of the Shuttle program, and STS-9, the Spacelab 1 mission in 1983.

Bolden will be flying for the second time. He also is scheduled to fly as pilot on mission 61-C in December 1985.

Brand and Griggs were reassigned from the Spacelab 4 mission, the first dedicated life sciences flight. The launch date for that mission is currently under review. It will be Brand's third Shuttle flight. He also flew on the Apollo-Soyuz mission in 1975 in which Soviet and American spacecraft met in orbit.

Griggs was a mission specialist on flight 51-D in April 1985.

Stewart was the second astronaut to fly the manned maneuvering unit on mission 41-B and is scheduled to fly as a mission specialist on flight 51-J, the DOD mission in October. Garriott will be making his third space flight. He was a member of the Skylab 3 and STS-9 crews. Nicollier will be making his first trip into space.

Williams was pilot on flight 51-D. Smith is scheduled to pilot mission 51-L in January 1986. Bagian and Carter will be making their first Shuttle flights. Dunbar is scheduled as a mission specialist on the Spacelab D-1 flight, 61-A, in October.

Thagard and Buchli will each be making a third spaceflight.

- end -

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Andrea Shea-King
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IMMEDIATE

KSC RELEASE NO. 195-85

TELECOMMUNICATIONS GROUP TO LEARN ABOUT SPACE PROGRAM ADVANCES

KENNEDY SPACE CENTER, Fla. -- Telecommunications in NASA's Space Shuttle Program and related activities at Kennedy Space Center will be the topic of a presentation to be given on Oct. 7, when NASA spokesman Gene Rocque addresses the National Association of State Telecommunications Directors.

The talk will be given at 8 a.m. at the Wyndham Seaworld Hotel's Wedgewood Ballroom, in Orlando, Florida.

Planning future Space Shuttle launches is Rocque's responsibility in his job with the Mission Planning Office in the Launch and Landing Operations Directorate at Kennedy Space Center.

Media representatives are invited to cover this event, and should contact Donald Allen at (904) 488-3595 for further details.

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Sept. 23, 1985

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Andrea Shea-King
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IMMEDIATE

KSC RELEASE NO. 196-85

PATENT AWARD WINNERS TO LEARN ABOUT SPACE STATION

KENNEDY SPACE CENTER, Fla. -- NASA's next logical step -- Space Station -- will be the topic of a presentation to be given on October 19, when NASA spokesman James Johnson addresses the Westinghouse Electric Corp. Patent Awards Banquet gatherers.

The talk will be given at 7 p.m. at the Radisson Plaza Hotel in Orlando, Florida.

Mr. Johnson is deputy manager in the Space Station and Advanced Projects office for NASA at Kennedy Space Center. He is responsible for Space Station planning, future projects development and research and technology activities at KSC.

The media is invited to cover this event, and should contact Bill Smith at (305) 281-2434 for further details.

Sept. 23, 1985

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NASA News

National Aeronautics and
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Deborah Marth
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Immediate

KSC RELEASE NO. 232-85

NASA'S SPACEPORT USA AND ENTERPRISE CONTINUE TO DRAW TOURISTS

KENNEDY SPACE CENTER, Fla. — NASA's **SPACEPORT USA** and the Space Shuttle orbiter Enterprise continue to be a big draw for visitors to the central Florida area. KSC visitors will have until Nov. 11 to see the Enterprise before its departure from the Spacecoast area.

The Enterprise is on public display adjacent to the 363-foot-tall Saturn V/Apollo similar to the one which carried Americans to the Moon in the late 1960's and early 1970's. Both may be viewed from a tour bus stop in the shadow of the 52-story-tall Vehicle Assembly Building.

The Enterprise arrived from California aboard the 747 Shuttle Carrier Aircraft in late September. It will be moved to the Washington D.C. area on Nov. 16 and turned over to the Smithsonian Institution.

Arnold Richmond, Chief of KSC's Visitors Services Branch, said, "We are very pleased with the number of guests we are able to attract. The public certainly has enjoyed seeing the Enterprise on display and we were quite happy to have it here, even if for a short time."

SPACEPORT USA, located on the NASA causeway and accessible via U.S. Route 1 two miles south of Titusville or Florida Route 3 on Merritt Island, is Florida's fourth largest tourist destination. Open every day of the year with the exception of Christmas, it is visited by approximately two million visitors annually.

Attendance figures for the month of October show that nearly 81,334 people took the nominally priced two-hour guided bus tour of the nation's Space Center, a slight increase over 1984's October attendance. TWS Services, Inc., the prime contractor for **SPACEPORT USA**, estimates that since it premier, over 244,086 visitors have also viewed "The Dream Is Alive," a large-format movie on the Space Shuttle program which is shown on a five-story-tall, 70-foot-wide screen.

The visitors complex, nestled in a setting of orange groves and full-scale rocket displays, offers a comprehensive selection of imaginative space and aeronautics exhibits. There is no charge for admission.

# # #

Nov. 8, 1985

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

IMMEDIATE

Jim Ball
(305) 867-2468
KSC Release No. 239-85

NOTICE TO EDITORS/NEWS DIRECTORS

SHUTTLE LOGISTICS FACILITY TO BE DEDICATED DECEMBER 3

A new, state-of-the-art logistics support facility constructed at KSC's Launch Complex 39 will be formally dedicated at 10 a.m. Tuesday.

KSC Director Richard Smith, Lockheed Space Operations Company President E. Douglas Sargent, and Dulcie Burns, a special staff assistant and NASA liason for U.S. Rep. Bill Nelson, will take part in a ribbon-cutting ceremony.

The new 324,640 square foot building houses flight hardware spares and a variety of support equipment as well as office space for approximately 550 NASA and Lockheed employees. It consolidates into one facility logistics functions supporting Space Shuttle launch processing and turnaround activities performed by Lockheed Space Operations Company.

News media representatives are invited to attend the dedication ceremony and tour the new facility, which includes state-of-the-art automated storage and retrieval systems.

Interested press representatives should be at the Complex 39 Press Site by 9:15 a.m. Permanently badged media and those with Mission 61-B credentials may proceed directly to the Press Site. Others should call 867-2468 ahead of time and arrange for clearance.

# # #

November 27, 1985

KSC FORM 2-160A (3/80)

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

KSC Release No. 242-85

NOTICE TO EDITORS/NEWS DIRECTORS

DEDICATION OF SECOND SHUTTLE LAUNCH PAD SCHEDULED FOR DEC. 13

KENNEDY SPACE CENTER, Fla. - Complex 39's Pad B - last used for the launch of a Saturn IB/Apollo for a joint mission by the United States and Soviet Union in July 1975 - will be dedicated for its role in the Space Shuttle program at 9 a.m. on Friday, Dec. 13.

Pad B, the second of the two Complex 39 launch pads to undergo modification from the Apollo configuration, will be used for the launch of Space Shuttle mission 51-L, scheduled for Jan. 22, 1986. Launches of the 23 Space Shuttle missions flown since Shuttle flights began on April 12, 1981 have been conducted from Pad A.

Following the dedication ceremony, the group will go to Spaceport USA to view a showing of the large-screen IMAX movie "The Dream Is Alive." A reception will be held in the Galaxy Center at Spaceport USA from 10:45 a.m. until noon.

Media representatives interested in covering the Pad B dedication ceremony should be at the KSC News Center no later than 8:30 a.m. Transportation to and from Pad B will be provided.

Those who wish to attend only the reception may drive directly to Spaceport USA.

# # # # #

Dec. 5, 1985

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Andrea Shea-King
305-867-2468

For Release:
IMMEDIATE

KSC RELEASE No. 233-85

KENNEDY SPACE CENTER CONTRACTS BOOST FLORIDA ECONOMY

KENNEDY SPACE CENTER, Fl. — The impact of NASA's Kennedy Space Center on the economy of Florida is both direct and substantial. Businesses in the Sunshine State benefitted from more than $810 million in ongoing and new NASA government contracts awarded during fiscal year 1985.

According to year-end figures, Kennedy Space Center, NASA's principal launch and payload processing site, awarded $77,595,000 in new contracts and purchases to the Florida business community during FY '85.

Nearly $28 million ($27,905,000) of that went to off-center firms in Brevard County for services and supplies or equipment. Brevard County is the home of Kennedy Space Center.

The remaining $42,179,000 in contracts or direct orders were awarded to firms located elsewhere in the Sunshine State.

The fiscal year runs from Oct. 1 through Sept. 30.

During the 1984 Fiscal Year, KSC on-site contractors were paid $544 million and it is estimated that 90 percent of that amount stayed in the local area in the form of payrolls and purchases.

KSC Civil Service salaries total about $92 million annually. Current figures show that the KSC workforce, including NASA Civil Service, contractors and tenants, totals 16,000.

Recipients of the bulk of current ongoing contracts, those that are funded over a several year period, include Base Operations Contractor EG&G Florida, Inc.; Shuttle Processing Contractor Lockheed Space Operations Co.; and McDonnell Douglas Aeronautics Corp., one of the major contractors providing payload processing services.

The FY '83 contracting level at KSC was $682.4 million. The FY '84 level reached $763 million.

Kennedy Space Center's principal roles involve Space Transportation System (STS) ground operation efforts, which include Space Shuttle checkout, launch, landing and refurbishment and ground processing of Spacelab and other payloads remaining attached to the Shuttle during a mission.

-30-

Dec. 8, 1985

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Kenneth C. Atchison
Headquarters, Washington, D.C.
(Phone: 202/453-8400)

Immediate

NOTE TO EDITORS:

A series of NASA briefings on Space Shuttle Mission 51-L and Comet Halley Observations are scheduled for Dec. 12 and 13, originating from NASA's Headquarters, 400 Md. Ave., S.W., Washington, D.C., and Johnson Space Center, Houston, Texas.

The Dec. 12 briefings include 51-L mission overview (10 a.m.), Teacher-in-Space lesson plans (11 a.m.), payload specialist training (noon), Comet Halley observations (1 p.m.), Tracking and Data Relay Satellite payload (4 p.m.) and Space Shuttle Student Involvement Program experiments (5 p.m.).

On Dec. 13, the 51-L crew conference will be held at 10 a.m., with "round robin" interviews at 9-10 a.m. and 11 a.m. to 1 p.m. at Johnson Space Center.

All briefings will be carried on NASA Select TV via RCA Satcom F2R, Transponder 13. NASA Select video is also available at the AT&T Switching Center, Television Operation Control in Washington, D.C., and at many NASA Centers. Call 202/453-8372 for additional NASA Select TV information. All times in this notice are EST.

- end -

Dec. 9, 1985

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468
8-823-2468

For Release:

KSC RELEASE NO. 17-86 IMMEDIATE

VICE PRESIDENT, SENATORS GARN AND GLENN VISIT CREW FAMILIES

KENNEDY SPACE CENTER, FLORIDA -- Vice President George Bush, accompanied by U.S. Senators John Glenn and Jake Garn, and NASA Acting Administrator Dr. William Graham, arrived at KSC by about 5:30 p.m. today and have met with members of astronaut families, the KSC launch team, and the news media.

The Vice President told reporters gathered at the KSC Press Auditorium: "I've come here today at the President's request, accompanied by Sen. Garn and Sen. Glenn, to pay our respects to the families of the crew.

"The President and I and the entire nation join in mourning the seven splendid men and women who now rest in God's arms. Today's tragedy reminds us that danger awaits all who push back the frontier of space, it reminds us that the great adventure of space travel requires men and women of spirit and bravery.

"I'd like to say something in particular, something special, to the school children of our nation, and especially those from Concord: You must try to understand that spirit, bravery and commitment, are what make not only the space program, but all of life worthwhile. We must never, as people in our daily lives or as the nation, stop exploring, stop hoping, stop discovering -- we must press on.

"What can all of us give now to honor those we've lost. Let me suggest a memorial to them. We must be as they were: great in spirit, great in courage, and great in dedication to the adventure of which they were so much a part. We must resolve that like America's pioneers of the past, others will follow, others will explore, others will risk, as these seven brave Americans risked today.

"So I came here today to pay our sincere condolences to the families and the friends of the seven, and also to the proud men and women of NASA, we salute them in this hour of trial."

He, the two Senators, and Dr. Graham met privately with family members of the 51-L crew at the Operations and Checkout Building at shortly after 6:00 pm and then proceeded on to the Launch Control Center Firing Room to address the launch team at about 7 p.m.

They expressed their pride in the NASA team and what they've done and expressed the importance of pressing on with the program.

The Vice President and others who accompanied him then attended a Mission Management Team Briefing, in the Operations Center.

Vice President Bush and Senators Glenn and Garn will fly back to Washington this evening.

# # #

January 28, 1986

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Andrea Shea-King
Area Code 305/867-2468

Immediate

KSC RELEASE NO. 19-86

FLORIDA FIRM TO BUILD $10 MILLION ORBITER FACILITY

KENNEDY SPACE CENTER, Fla. - Ground will soon be broken for a 50,000-square-foot Shuttle Orbiter Modification and Refurbishment Facility.

NASA's John F. Kennedy Space Center has awarded a contract for $9,950,149 to W.& J. Construction Co., Cocoa, Fla., for construction of the facility to the northwest of the Vehicle Assembly Building at Complex 39.

Plans for the Orbiter Modification and Refurbishment Facility (OMRF) call for a 95-foot-tall high bay and a two-story low bay. The OMRF - which is a part of NASA's long-range facility plan - will provide needed space in which to perform modifications, rehabilitation and overhaul on Space Shuttle orbiters outside of the facilities used in the normal operational flow.

The additional space will enhance the center's abilities to meet anticipated future demands on Shuttle turnaround capabilities.

Under the terms of the fixed price contract, the Cocoa firm has 330 calendar days in which to complete the project.

# # # #

Feb. 25, 1986

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release

Mitch Varnes
(305) 867-2363

IMMEDIATE

KSC Release No. 26-86

SPACEPORT USA HAS BUSIEST MARCH IN HISTORY

KENNEDY SPACE CENTER, FLA. -- Attendance records at Spaceport USA, the Kennedy Space Center's visitors center, were broken for the second consecutive month in March when an estimated 250,000 people visited America's Spaceport.

More than 196,000 visitors boarded NASA buses during the month and were taken on a guided two hour tour of the space center. This number is significantly greater than the 150,000 guests who visited Spaceport USA during March 1985 and is the greatest number for March since public tours began in 1966. The previous March attendance high was set in 1983 when 190,671 people toured the space center.

Cumulative tour attendance for the year is also running at an a record level. The number of people who have opted for a tour in calendar year 1986 through March 31 is 456,830, compared to 360,886 for the same time period in 1985. The 1986 figure to date represents a 26.6 percent increase over the same period of 1985.

In addition to the increased tour and visitor attendance, more than 114,000 people viewed the IMAX space film, "The Dream is Alive," during the month. The film, which is shown in Spaceport USA's Galaxy Center, depicts what many astronauts say is "the next best thing to being in space."

Arnold Richman, chief of KSC's Visitors Services Branch, attributes Spaceport USA's rise in attendance to several factors. "Falling gasoline prices, a strengthening economy, thousands of spring breakers and gorgeous weather were all contributors to a great month," Richman said. "Spaceport USA is undoubtedly one of Florida's best values."

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Spaceport USA is Florida's fourth most popular tourist attraction. It is operated by TW Services Inc. under contract with NASA. Besides the bus tours and IMAX film, Spaceport USA has actual flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits, and other space memorabilia on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

April 1, 1986

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

David W. Garrett
Headquarters, Washington, D.C.
(Phone: 202/453-8400)

April 3, 1986

RELEASE: 86-38

ASTRONAUT MEMORIAL TO BE BUILT

NASA and the Astronauts Memorial Foundation, Inc. today announced plans to build a memorial at the Kennedy Space Center, Fla., dedicated to astronauts who have lost their lives while flying, training or awaiting assignment to fly for the space agency.

NASA will provide a site for the memorial at the Kennedy Space Center, while the foundation will raise funds for the design, construction and perpetual care of the memorial. U.S. Sen. Jake Garn and U.S. Rep. Bill Nelson, both of whom have flown on the Space Shuttle, are co-chairing national fundraising efforts for the private, non-profit foundation, based in Cape Canaveral, Fla.

Once the memorial is completed, education will become the focus of the foundation's efforts, according to the group's organizers. A scholarship fund will be established to support students pursuing careers in the fields of teaching, engineering and science.

The memorial will honor: the Space Shuttle Challenger crew, including Francis (Dick) Scobee, Michael Smith, Judith Resnik, Ronald McNair, Ellison Onizuka, Christa McAuliffe and Gregory Jarvis; the Apollo crew who died when a fire swept their spacecraft during a launch simulation in 1967, including Virgil (Gus) Grissom, Edward H. White II and Roger Chaffee; Gemini IX astronauts Charles Bassett and Elliott See, who were killed in a crash of their T-38 trainer aircraft in 1966; Theodore Freeman, who died in a T-38 accident in 1964; Clifton Williams, who also died in a T-38 accident in 1967, and Edward Givens, who was killed in an automobile accident in 1967.

- more -

Contributions to the Astronauts Memorial Foundation, Inc., may be addressed to:

P.O. Box 285
Cape Canaveral, FL
32920-0285

-end-

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NASA News

National Aeronautics and
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For Release:
May 6, 1986

KSC Release No. 37-86

REQUEST FOR PROPOSAL ISSUED BY NASA FOR PAYLOAD GROUND OPERATIONS CONTRACT AT KENNEDY SPACE CENTER

Kennedy Space Center, Fla. -- NASA issued today a Request for Proposal for a Payload Ground Operations Contract.

The scope of work covers launch preparation of Space Shuttle vertical payloads such as satellites, and horizontal payloads such as Spacelab.

Also included are the operations, maintenance, and engineering of the related processing facilities. Among these are the horizontal payload areas of the Operations and Checkout Building, the Vertical Processing Facility, several vertical spacecraft checkout hangars, facilities for loading hazardous spacecraft propellants, and a NASA telemetry facility on Cape Canaveral Air Force Station.

Processing of NASA payloads at the Vandenberg Launch Site and launch preparation of the Space Station components that are required at KSC are also within the scope of work.

Several contractors currently perform the existing operations that are detailed in the Request for Proposal. The majority of the functions are performed by McDonnell Douglas. Also performing a portion of the work are Boeing Aerospace, Computer Science Corporation, EG&G, and Planning Research Corporation. These will be consolidated into one agreement under the Payload Ground Operations Contact (PGOC). About 1,000 people are employed on these contracts and could be affected by the change.

It is anticipated that the preponderance of the work force under the new contract will be comprised of incumbent personnel.

The contract is expected to be awarded in January, 1987, and will be followed by a period of transition. The PGOC contractor is expected to participate in the payload processing for the next flight of the Space Shuttle.

The cost plus award fee type contract has optional extensions, giving the contract a possible life of up to 15 years.

Currently four potential bidders are at KSC, and since September, 1985 have been observing the present payload work to be included under much of the contract. They include McDonnell Douglas, Boeing Aerospace, Hughes Aircraft, and MBB Erno of West Germany.

The purpose of the Payload Ground Operations Contract is to obtain a single, long-term contract for payload processing activities. It is the last of three major NASA-KSC contracts designed to fulfill Space Transportation System operational objectives. It reduces cost and the necessary number of contractor interfaces, while it increases efficiency, effectiveness, and safety.

Proposals are due for submission by Aug. 5, 1986.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

IMMEDIATE

Andrea Shea-King
305-867-2468

KSC Release: 86 - 103

PLANETARY SPACECRAFT RETURNED TO EUROPE, JPL

KENNEDY SPACE CENTER, Fl.— NASA Administrator James C. Fletcher recently announced his decision to terminate development of the Centaur Upper Stage for use aboard the Space Shuttle. As a result, two planetary spacecraft originally scheduled for 1986 launches from the Space Shuttle are being returned to their respective sponsors.

The Ulysses spacecraft, an international effort intended to study the poles of the Sun and interstellar space, has been returned to the European Space Agency.

The spacecraft was loaded aboard an Air France Boeing 747 on June 17 and flown to the European Space Research and Technology Center in Noordwijk, The Netherlands, where it will be stored pending future project activity.

While housed in NASA facilities at the Cape Canaveral Air Force Station, Ulysses underwent a successful testing program. The spacecraft was due to be mated with its Centaur upper stage and tested as an integrated unit before being loaded into the payload canister for transfer to the launch pad. At the time of the Shuttle 51-L accident, the Centaurs were in the final months of preparation for the launches of Ulysses and Galileo, then scheduled six days apart in May.

The Ulysses spacecraft, a joint project between NASA and ESA, arrived at Cape Canaveral Air Force Station on Jan. 6, 1986. About 45 team members representing more than 12 different nationalities from ESA and Dornier Systems, builder of the spacecraft, arrived to assist in its prelaunch processing.

Galileo, an interplanetary spacecraft designed to study Jupiter and its moons, arrived at KSC in December, 1985. It recently underwent first-time spacecraft testing using power generated by radioisotopic thermoelectric generators (RTGs) in a special facility at Kennedy Space Center. In August, it will be shipped back to the Jet Propulsion Laboratory in Pasadena, Calif., where it will be stored and subsequently modified when a new upper stage vehicle is selected.

At the time of the Shuttle 51-L accident, major safety reviews of the Centaur system were underway. These reviews were intensified in recent months to determine if the program should be continued. The final decision was made on the basis that even following certain modifications identified by the ongoing reviews, the resultant stage would not meet safety criteria being applied to other cargo or elements of the Space Shuttle system.

# # # #

July 2, 1986

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202-453-8400

David Garrett
Headquarters, Washington, D.C.
(Phone: 202/453-8400)

For Release:

July 10, 1986
10:30 a.m. EDT

Hugh W. Harris
Kennedy Space Center, Fla.
(Phone: 305/867-2468)

Release No. 86-89

KSC DIRECTOR SMITH TO RETIRE

Richard G. Smith, Director of Kennedy Space Center, Fla., today announced his retirement from NASA effective July 31. He will become President and Chief Executive Officer of General Space Corp., Pittsburgh.

Deputy Director Thomas E. Utsman will serve as Acting Director until a new Director is appointed by NASA Administrator Dr. James C. Fletcher.

Smith, who has been director of Kennedy since September 1979, has spent his entire career, spanning more than 35 years, in the space program. He joined the rocket research and development team at Redstone Arsenal in 1951 upon graduation from Auburn University. In July 1960 he transferred to NASA when the Development Operations Division of the Army Ballistic Missile Agency became the nucleus for the establishment of the George C. Marshall Space Flight Center, Huntsville, Ala.

Serving in positions of increasing responsibility at Marshall, Smith was appointed Deputy Manager and later Manager of the Saturn Rocket Program. In January 1974, Smith became Director of Science and Engineering and served in that position until he was appointed Deputy Director of Marshall later that year.

On Aug. 15, 1978, Smith accepted a 1-year assignment as Deputy Associate Administrator for Space Transporation Systems at NASA Headquarters, Washington, D.C. He served as Director of the Skylab Task Force, appointed by the NASA Administrator, to represent NASA preceding and following the reentry of Skylab.

-more-

For his contributions to the Apollo, Skylab and Space Shuttle Programs, Smith has received the NASA Medal for Exceptional Service in 1969 and the NASA Medal for Distinguished Service in 1973 and 1981. In January 1980, he received NASA's Outstanding Leadership Medal for his management of the Skylab Reentry Program.

He also was awarded the rank of Meritorious Executive in the Senior Executive Service in 1980 and Distinguished Executive in 1981. In June 1981, he was awarded an honorary doctorate of science Degree by the Florida Institute of Technology. His Alma Mater, Auburn University, awarded him an honorary doctor of science Degree on Dec. 9, 1983.

In commenting on his retirement, Fletcher said, "NASA is losing one of its strongest managers and engineers in the retirement of Dick Smith. His leadership in running major agency programs and directing the Kennedy Space Center through the advent of the Space Shuttle era will be sorely missed. He has been a force for excellence at all levels of his career, from the time he served as a beginning engineer to his present position as Director of the Kennedy Space Center and a member of NASA's Senior Management Council. Mitigating the sense of loss, is my delight that Dick's talents will continue to be utilized in the private sector to further develop the nations capabilities in space operations."

-end-

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NASA News

National Aeronautics and
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Washington, D.C. 20546
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Sarah Keegan
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Jim Ball
Kennedy Space Center, Fla.
(Phone: 305/867-2468)

For Release:
July 22, 1986

RELEASE: 86-95

TESTING OF SHUTTLE ORBITER WEATHER PROTECTION STRUCTURE SCHEDULED

Space Shuttle Atlantis is scheduled to be moved to Launch Pad 39-B to support verification testing of newly installed weather protection structures at Kennedy Space Center, Fla.

Currently stacked on Mobile Launcher Platform 1 in the Vehicle Assembly Building, Atlantis is slated to be transported no earlier than August 19.

A considerable portion of the orbiter is shielded by the Rotating Service Structure (RSS) that closes in around the Space Shuttle at the launch pad.

The new $3.3 million system of sliding and folding doors and seals will cover previously exposed, lower portions of the orbiter to greatly reduce the risk of damage to the orbiter's fragile heat protection tiles. The metal doors will slide between the orbiter's belly and its external tank.

Other weather protection structures to provide a roof seal and enclose the space between the RSS and the external tank were checked earlier this year.

Without the shielding, the tiles are susceptible to damage from hail and wind-blown debris and heavy rains can erode tile water-proofing.

The assembled Shuttle will allow checks of structural clearances, verification of seal integrity and validation of deployment procedures and timelines.

- more -

Operations managers and facility engineers scheduled the Pad B weather protection checkout to take advantage of having a fully assembled shuttle available. Atlantis originally had been assembled to support planned testing of Shuttle/Centaur hardware at Pad A this summer.

Existing weather protection systems at Pad 39-A are slated to be upgraded to the Pad B configuration next year.

Atlantis is expected to remain on the launch pad until early September.

- end -

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NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202-453-8400

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For Release:
August 11, 1986

RELEASE: 86-109

PROPOSALS RECEIVED FOR PAYLOAD GROUND OPERATIONS CONTRACT

Two companies have submitted proposals for the Payload Ground Operations Contract (PGOC), the third and last in a series of comprehensive contracts to be awarded by NASA Kennedy Space Center, Fla., to fulfill Space Transportation System operational objectives.

Boeing Aerospace Operations, Cocoa Beach, Fla., and McDonnell Douglas Astronautics Co., Kennedy Space Center, Fla., submitted competing proposals on Aug. 5. About 70 solicitation packages were sent out, some of which were for sub-contractor opportunities.

The request for proposals was issued May 6, 1986, and the contract award date is scheduled for mid-December.

The contractor selected will be responsible for preparing all payloads, such as communications satellites, scientific experiments and Spacelabs, for launch aboard Space Shuttles and expendable launch vehicles. The contract includes assembly, testing, checkout and transporting payloads while at KSC.

Other contract work includes the operations, maintenance and engineering of the related processing facilities.

Among these are the payload areas in the Operations and Checkout Building, the Vertical Processing Facility, several spacecraft checkout hangers, facilities for loading spacecraft propellants and a NASA telemetry facility on Cape Canaveral Air Force Station.

- more -

Future Space Station components that require launch processing at KSC and preparation of NASA payloads to be launched at the Vandenberg Launch Site also are within the scope of work.

The contract will consolidate work currently performed under separate on-site contracts involving about 900 people. The majority of current payload processing activity is performed by McDonnell Douglas with Boeing Aerospace, Computer Science Corp., EG&G Florida and Planning Research Corp. also doing a portion of the work.

The initial 3-year cost-plus-award-fee contract has optional extensions, giving the contract a possible life of up to 15 years. The contract start date is estimated to be Jan. 1, 1987.

The purpose of the PGOC is to obtain a single, long-term contract for payload processing activities. It reduces the cost and the necessary number of contract interfaces while increasing efficiency, effectiveness and safety.

Two other major contracts KSC has awarded are the Base Operations Contract (BOC) and the Shuttle Processing Contract (SPC). The BOC was awarded to EG&G, Inc., Wellesley, Mass., on Nov. 29, 1982. Lockheed Space Operations Company, Titusville, Fla., was awarded the SPC contract on Sept. 29, 1983.

The BOC consolidated institutional and certain technical support services covering utilities, facilities, administrative services, technical operations and health and safety services being provided by 14 different contractors.

The SPC consolidated 13 contracts providing launch processing and landing services for all Shuttle flight hardware and maintenance of related ground systems to NASA and the USAF at Vandenberg Air Force Base, Calif.

-end-

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
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AC 305 867-2468

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For Release:
September 8, 1986
2:00 p.m. EDT

RELEASE: 86-127

BOEING SELECTED FOR SPACE COMMERCIAL DEVELOPMENT AND UTILIZATION

NASA has selected Boeing Aerospace Company, Seattle, Wash., for contract negotiations to develop and implement a program to stimulate and sustain interest by United States companies in the utilization and application of aeronautics and space technology.

"Use of the microgravity environment of spaceflight for research leading to commercial development, production and application of technologies and materials needed on Earth is a key to the Nation's future in the world economic market. Boeing Aerospace Company has been chosen by NASA to help assure that the United States plays a major role in this initiative," said Isaac T. Gillam, NASA Assistant Administrator, Office of Commercial Programs.

The contract is expected to be 1 year in duration with two 1-year options. Estimated contract value will be approximately $1 million annually. Beginning in October, the work will be carried out by Boeing Aerospace Operations Company, Cocoa Beach, Fla.

The program's goal is to encourage U.S. firms, with private investment, to join with NASA to explore the application and utilization of new and innovative technologies for the mutual benefit of both parties.

Boeing will be aided by Peat Marwick, Mitchell & Co., New York City, the Nation's largest management and accounting firm. Together, they will establish an office in Washington, D.C., to generate user/NASA agreements and participation through a three-phase approach:

* Outreach: Viable U.S. companies will be shown that the use and application of aeronautics and space technology in their firms could lead to more efficient and effective day-to-day operations and increased productivity.

- more -

* Assistance: Boeing and Peat Marwick will provide the technical and business services necessary to help commercial users prepare proposals acceptable to NASA.

* Closure: The Boeing team will act as an intermediary, familiar with the needs and procedures of both the firm and NASA, to bring about a final NASA/user understanding.

Boeing is committed to being a major user of the Space Station and has entered into an agreement with NASA calling for the firm to fly a series of microgravity experiments aboard the Space Shuttle. These experiments will involve the growth in space of crystals which promise to prove valuable in the production of semiconductor materials.

Both NASA and Boeing consider the proposed Space Station critical to the U.S. commercial space effort. The Space Station, expected to be placed in Earth orbit in the early 1990s, will contain laboratory and research facilities for commercial endeavors.

- end -

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Azeezaly S. Jaffer
Headquarters, Washington, D.C.
(Phone: 202/453-1922)

September 8, 1986
2:00 p.m. EDT

RELEASE NO: 86-128

SPACE SERVICES INC. TO USE NASA LAUNCH FACILITY

NASA and Space Services Inc. of America (SSI), a Houston-based aerospace company, have agreed to general terms on the use of NASA'S Wallops Flight Facility, Wallops Island, Va., for the launch of the expendable Conestoga booster.

SSI will reimburse NASA for all direct costs for launch operations support provided by NASA to SSI.

Under the agreement, SSI will be responsible for preparation and launching of the vehicles, including all required non-NASA resources, and NASA will participate as observers to the extent necessary to insure compliance with all range and safety requirements. Overall range control, safety and operation will be the responsibility of the Goddard Space Flight Center, Greenbelt, Md., which controls the Wallops Flight Facility.

In signing the agreement, Isaac T. Gillam IV, Assistant Administrator for the Office of Commercial Programs, said, "Here is a clear and early example of NASA's continued support and commitment to the President's commercial space policy."

"With some modification and the construction of a Conestoga gantry at one pad, the Wallops facility is ideal for our type of operation" said Donald K. "Deke" Slayton, President of SSI. "It's an exciting arrangement and we are looking forward to working with the NASA people at both Goddard and Wallops."

First flight of the Conestoga with a commmercial payload could come as early as 1987 followed by two to three launches in 1988.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Jim Ball
Kennedy Space Center, FL
(305/867-2468)

Oct. 13, 1986

KSC Release No. 132-86

KSC PURCHASES ORBITER COMPONENTS FOR NEW AVIONICS TEST FACILITY

KENNEDY SPACE CENTER, Fla. -- Contracts for the purchase of several key Space Shuttle orbiter electronic components were recently awarded by KSC for the development of an avionics test laboratory here.

The equipment will help complete a three-year effort to develop a low-cost, high-fidelity orbiter avionics simulator at the spaceport. The facility is expected to become operational by the end of the year.

Harris Corporation, Melbourne, Florida was awarded a $749,583 contract to provide an orbiter Pulse Code Modulation Master Unit, a device which gathers data from orbiter instruments and flight computers and processes that data for transmission to the ground. The work will be performed by the firm's Government Aerospace Systems Division.

IBM Corporation was awarded a $585,000 contract to provide an orbiter Mass Memory Unit simulator. A flight Mass Memory Unit is used to store computer programs for both operation and check-out of the ship.

IBM will also supply two Display Electronics Units, part of the system that generates data displays on the computer screens monitored by the Shuttle's flight crew.

These components, which will be built as exact copies of the hardware used in the Shuttle orbiters, will be installed along with other similar components and special computer equipment at a test laboratory housed in KSC's Vehicle Assembly Building.

The facility is known as the Kennedy Avionics Test Set (KATS) and will allow engineers to test and debug ground checkout software used between orbiter flights. It can also be used to checkout orbiter flight hardware and is expected to become an important training tool.

KSC engineers who have revised and updated computer programs used in the testing and checkout of the Shuttle during its ground turnaround period have previously had to verify these programs in the Shuttle Avionics Integration Lab (SAIL) facility at the Johnson Space Center in Houston.

The Space Shuttle avionics system consists of more than 300 major electronic "black boxes" located throughout the vehicle, connected to more than 300 miles of electrical wiring. Special computer programs operated at consoles in the Launch Control Center firing rooms are used during vehicle checkout to verify the Shuttle's flight readiness.

The KATS lab will be capable of being linked to at least one of the firing rooms to simulate many of the orbiter systems.

# # #

NASA News

National Aeronautics and
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For Release:

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December 1, 1986

RELEASE NO. 86-91

WESSEL TO ATTEND MAXWELL PROGRAM AT SYRACUSE UNIVERSITY

V. William Wessel, Head, Safety Engineering Branch, Systems Safety, Quality and Reliability Division, at NASA's Langley Research Center, has been selected to attend the Maxwell Mid-Career Development Program at Syracuse University for 15 weeks beginning in January.

The objectives of the program are to develop an understanding of the social, economic and political forces that impinge on public organizations and their management; to understand the dynamics of public organizations and their managerial systems and processes; to develop skills of analysis, communications, leadership and decision-making required of public managers; to assess one's own managerial capabilities; and to design a personal career development strategy.

Wessel began his Langley career in 1981. As a supervisory safety engineering manager, he is responsible for planning, formulating and implementing safety programs, measures and controls for the safe operation of facilities and protection of personnel and property throughout Langley. He supervises safety personnel engaged in safety inspection, fire prevention and protection, radiological and laser surveillance, industrial hygiene, systems safety, occupational environment and public safety activities.

- more -

Wessel is responsible, as the center representative, for appropriate interface and communication with both NASA Headquarters in Washington, D.C., and the other NASA field installations and contractors to exchange mutually beneficial safety information. In addition, he advises and consults with top level management, research facility operators, and engineering and technical personnel regarding the application of safety engineering principles in the design, construction, modification and repair of research facilities and equipment.

"The Syracuse Maxwell Mid-Career program will provide the educational basis for my future decision making at Langley and for more effective leadership resulting in increased productivity," Wessel explained. "Further, an educational experience such as this will further improve communication skills which are of vital importance to career advancement.

Wessel came to Langley following a 15-year career in the private sector working for two major airframe manufacturers. "The challenge of experiencing management opportunities in both private industry and government provided the impetus for leaving the private sector," he said. "While many tools required to be a successful government manager may be gained by job experience, certainly the world of academics also plays a very important role."

Wessel received a bachelor of science desgree in mathematics and physics from Birmingham-Southern College in 1967 and did post graduate work at the University of Alabama.

He and his wife, Cynthia, live in Newport News. The have two children.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
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Diana Boles
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For Release:
December 4, 1986
4:00 p.m.

KSC RELEASE NO. 143-86

BIONETICS CORPORATION AWARDED CONTRACT EXTENSION

KENNEDY SPACE CENTER, Fla. -- The Bionetics Corporation, Hampton, Va., has been awarded a three-year, $9,034,711 contract extension by NASA for laboratory and environmental support services to the Biomedical Operations & Research Office at Kennedy Space Center.

Under the extension, Bionetics will continue operating the Center's clinical and physiological stress laboratories where research work is done for muscle and exercise physiology and cardiovascular conditioning. An Exercise Facility is also managed by the Biomedical Operations & Research Office through Bionetics which is available to KSC employees from 6:30 a.m. - 7:00 p.m. five days a week. More than 100 employees a day use the facility.

At Cape Canaveral Air Force Station, Bionetics maintains a microbiological lab in the Dispensary and conducts chemical and environmental analyses. The contractor also monitors the natural environment at KSC and carries out an environmental monitoring program for Shuttle launch and landing operations.

The Bionetics contract provides laboratory support for Hangar L, which is located at Cape Canaveral Air Force Station. Hangar L houses the Life Sciences Support Facility capable of processing Shuttle life sciences payloads. The facility includes laboratory and holding areas for biological specimens and support areas for principal investigators. Also supported is the Baseline Data Collection Facility at the O&C Building where pre- and post-flight data collections are conducted on crew members for Shuttle flights.

Also, Bionetics supports through its laboratories the Space Life Sciences Training Program, Summer High School Apprentice Research Program (SHARP), the NURTURE Program and the High School Science Teachers Program. The objective of these programs is to encourage young people to pursue science as a career and raise the level of their comprehension of what it's like to work in the scientific field.

The cost-plus-fixed-fee contract covers the period Oct. 31, 1986 through Oct. 30, 1989, and brings the total value of the award to $17,552,964.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

Release No. 149-86

NOTICE TO EDITORS/NEWS DIRECTORS:

YOUNG COSMONAUTS TO VISIT NASA LAUNCH CENTER

KENNEDY SPACE CENTER, Fla. - Ten Soviet Young Cosmonauts aged 14 to 18 will tour the Kennedy Space Center on Friday, Dec. 12. Their visit here is part of a two-week tour of American space facilities, schools, museums and cultural and historical sites which begins with their arrival at Dulles Internatioal Airport in Washington, D. C. on Dec. 9.

This is the second phase of an historic exchange between American Young Astronauts and Soviet Young Cosmonauts which was agreed upon by President Reagan and General Secretary Gorbachev at the Geneva Summit in November, 1985.

The Young Cosmonauts will be guests of the Young Astronaut Council and will meet with Young Astronauts at each of their stops. During their tour of KSC, they will be accompanied by representatives of the local Young Astronaut affiliate group at Clearlake Junior High School in Cocoa.

Their visit follows an earlier two-week tour of the Soviet Union by 10 American Young Astronauts in October.

Following their arrival at KSC at approximately 9:30 a.m., they will be welcomed by Lt. Gen. Forrest S. McCartney, center director. They will then embark upon a tour of the center which will include a viewing of the Apollo 11 simulation in the Flight Crew Training Building and a visit to the principal structures and facilities of Launch Complex 39.

Later in the day, they will have free time to view the exhibits and other attractions at Spaceport USA - KSC's visitors center. Their visit here will end following their participation in space demonstrations at Exploration Station at Spaceport USA.

- more -

The Young Cosmonauts will be accompanied by an official Soviet delegation which includes Vadimir Shaplyko, secretary of the Komsomol Central Committee and deputy to the Supreme Soviet of the Byelorussian SSR; Vladimir Soloviov, pilot cosmonaut of the USSR, who spent 237 days in space aboard Salyut 7 in 1984; Victor Yevseenkov, chief of section, Committee on Young Organization, and Yelena Kolesnikova, teacher, Moscow Teachers Training College.

News media representatives will have an opportunity to meet with the group during a press session to be held in the News Center's auditorium between 1:05 and 1:30 p.m. There will be an opportunity to photograph their visit to Pad A at Launch Complex 39 at approximately 1:45 p.m.

Media representatives who plan to participate in coverage of the Young Cosmonauts' visit should contact the News Center at Area Code 305/867-2468 for additional information.

Their tour of the United States is centered upon the following ares: Orlando, Fla., Dec. 12-14; Huntsville, Ala., Dec. 15-16; Houston, Texas, Dec. 17-18, and New York City, Dec. 19-21.

# # # # #

Dec. 8, 1986

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Diana Boles
(305) 867-2468

For Release:

December 10, 1986

KSC RELEASE NO. 147-86

APOLLO COMPUTER, INC. AWARDED CONTRACT BY NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $192,633 contract to Apollo Computer, Inc., Orlando, Fla. to provide computer workstations, software, training, and documentation for an Engineering Technical Base project designed to apply knowledge-based expert system techniques to the Pad B environmental control system.

Knowledge-based expert systems draw upon computer programs created around the experience and wisdom of specialists in specific disciplines. These programs can be used by computers to exercise the flexible reasoning processes normally attributed to human beings.

The project will be developed on an environmental control system simulator in the engineering development laboratory and contain knowledge of KSC's environmental control system. Engineers will access the information and compare present system operation with the expected operation.

The equipment will be delivered to KSC's Flight Crew Training Building and installed by the contractor.

The firm-fixed-price contract requires Apollo Computer, Inc. to complete all work within six weeks after notice to proceed.

# # #

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Diana Boles
305-867-2468

For Release:
Immediate

KSC RELEASE NO. 5-87

LAKELAND FIRM SELECTED FOR OPF ANNEX NEGOTIATIONS

KENNEDY SPACE CENTER, Fla. -- Specialty Maintenance and Construction Inc., Lakeland, Fla., has been selected to enter into final negotiations for an Annex Addition to the Orbiter Processing Facility at KSC's Launch Complex 39.

The value of the procurement is approximately $3.1 million.

The facility will provide permanent housing for employees who are now located in trailers and other temporary facilities.

A design of the new three-story, 34,000 square-foot facility that will be occupied by technicians, quality control inspectors and management personnel is scheduled to begin next month. The building is expected to become operational by March 1988. In addition to the offices and conference rooms, a lunch room for the employees will be located in the facility.

The contract also provides for Specialty Maintenance to modify the heating, ventilation, and air-conditioning system on the existing OPF Annex.

# # #

January 14, 1987

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

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Immediate

KSC RELEASE NO. 7-87

NASA EXTENDS PRC SYSTEMS SERVICES CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $1,503,171 contract extension for engineering services to PRC Systems Services of Cocoa Beach, Fla.

The cost-plus-fixed-fee contract was initiated on October 1, 1983. The extended period runs from Jan. 1, 1987 through Jan. 31, 1987, and brings the total value of the contract to $83,179,762.

PRC has served as prime contractor to KSC's Engineering Development Directorate since 1974.

The work is performed in Florida at the Kennedy Space Center and Cape Canaveral Air Force Station, as well as the Vandenberg AFB in California. Included among the company's employees are engineers, draftsmen, technical writers and computer programmers.

# # #

January 16, 1987

NASA News

National Aeronautics and
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For Release:

January 22, 1987

RELEASE: 88-10

CONTRACT AWARDED FOR SPACE SHUTTLE LANDING FACILITY MODIFICATIONS

A $635,529 contract has been awarded by EG&G Florida, Inc., the base operations contractor for Kennedy Space Center (KSC), Fla, to Jensen Construction Co., Des Moines, Iowa, for modifications to the Space Shuttle Landing Facility (SLF).

Work to be performed by the contractor consists of grinding a 3,500-foot section at each end of the runway to smooth the surface texture, removing cross grooves and adding longitudinal "corduroy grooving." Also included in the contract are modifications to existing landing zone light fixtures and repainting of the markings on the entire runway and overruns.

The primary purpose of the modifications is to enhance landing safety by reducing Space Shuttle orbiter tire wear during landing operations. Of the 24 successful Space Shuttle missions, five ended with touchdowns on KSC's Shuttle Landing Facility.

The new configuration has been selected following extensive tire/landing gear/runway surface research conducted over the last 18 months at the Langley Research Center, Hampton, Va., by a team of analysts from Johnson Space Center, Houston; Langley; Kennedy; Rockwell International; and B.F. Goodrich engineers.

Completed in late 1975, the SLF is 15,000 feet long and 300 feet wide with a 1,000-foot paved safety overrun at each end. The SLF is 16 inches thick in the center, with the thickness diminishing to 15 inches on the sides. The runway is not perfectly flat, having a slope of 24 inches from centerline to edge.

- more -

Four self-propelled grinding machines, specifically designed to smooth and texture concrete pavement, will be used in the operation. Each machine is equipped with diamond blades and weighs 40,000 pounds. The modified "corduroy" grooves will be smaller than the grooves to be replaced. The new grooves will run the length of these runway sections rather than across the width. Work will begin Jan. 26, 1988 and will be completed by mid-March 1988.

EG&G Florida is the prime contractor for base operations at Kennedy. EG&G provides institutional and technical support services such as utilities, facilities, administrative services, technical operations and health and protective services.

- end -

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NASA News

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For Release:
IMMEDIATE

Mitch Varnes
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KSC Release No. 16-87

SPACEPORT USA HAS BUSIEST JANUARY IN HISTORY

KENNEDY SPACE CENTER, FLA. -- January attendance at Spaceport USA, the Kennedy Space Center's visitors center, reached an all-time high for the year's first month when an estimated 152,000 people visited America's Spaceport.

The January attendance figure marks the eighth time in the past 12 months that monthly visitor records have been toppled, and is the highest of any January since the space center opened for public tours in 1966. The previous high for January was in 1981 when about 135,000 people visited Spaceport USA. The launch of the first two Space Shuttle missions occurred in 1981.

The heaviest attended year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Seven record breaking months helped boost Spaceport USA attendance to unparalleled records in 1986.

Spaceport USA is Florida's fourth most popular tourist attraction and has in the past drawn an average of 1.8 million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and for the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

Feb. 2, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Immediate

Dick Young
Area Code 305/867-2468

Release No. 9 - 87

NOTICE TO EDITORS/NEWS DIRECTORS

NASA ADMINISTRATOR FLETCHER TO VISIT SPACEPORT FEB. 12

KENNEDY SPACE CENTER, Fla. - NASA Administrator Dr. James C. Fletcher will visit the Kennedy Space Center on Thursday, Feb. 12.

The familiarization tour will be Dr. Fletcher's first visit to KSC since he began his second assignment as administrator of NASA in May, 1986.

During his visit, he will meet with the center's Senior Management Council, tour vehicle and payloads processing facilities and the Logistics Facility, address center employees and meet with the press for a news conference.

Highlights of his visit include:

8:30 a.m. - Meeting with the KSC Senior Management Council in the Headquarters Building 4th Floor Conference Room. Dr. Fletcher will be introduced by Forrest S. McCartney, KSC director.

9:30 a.m. - Dr. Fletcher will address KSC employees in the Training Auditorium. The address will be carried center-wide via television.

10:05 a.m. - Tour of Operations and Checkout Building High Bay and briefings on horizontal and vertical payloads processing.

10:50 a.m. - News conference at auditorium at Launch Complex 39 Press Site.

11:20 a.m. - Tour of Orbiter Processing Facility and briefing on status of processing of the Space Shuttle Orbiters Columbia and Discovery.

11:55 a.m. - Tour of High Bay 1, Vehicle Assembly Building, and briefing on processing status of Orbiter Atlantis and other Space Shuttle elements assembled on Mobile Launcher Platform.

12:30 p.m. - Luncheon meeting with Center Director McCartney.

1:30 p.m. - Tour of Firing Room 1, Launch Control Center.

1:50 p.m. - Tour of Pad B, Complex 39, and viewing of weather protection modifications.

2:45 p.m. - Visit to Logistics Facility for briefing on logistics operations.

3:30 p.m. - Departure from Shuttle Landing Facility aboard NASA aircraft.

It is suggested that the news media representatives who wish to participate in the news conference be at the News Center by approximately 10:30 a.m. in the event Dr. Fletcher's tour runs ahead of schedule.

# # # # #

Feb. 6, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

KSC Release No. 22 - 87

NOTICE TO EDITORS/NEWS DIRECTORS

CENTER DIRECTOR MC CARTNEY TO MEET WITH COMMUNITY LEADERS

KENNEDY SPACE CENTER, Fla. - Center Director Forrest McCartney will meet with community leaders on Tuesday, Feb. 17, to give them a briefing on the state of the center and prospects for the future.

The meeting will begin at 8:30 a.m. with coffee and doughnuts in the Orbit Cafeteria at Spaceport USA - KSC's visitors center.

At 9 a.m., the group will move to the Galaxy Center for McCartney's briefing on center activities. At its conclusion, those attending will be given a showing of "The Dream Is Alive," the dramatic, large-format Imax motion picture on the Space Shuttle.

The morning's events may be covered by news media representatives but the schedule does not include time for a news conference or interviews.

Spaceport USA is outside the security zone and news media personnel may drive there directly via Florida Route 3 on Merritt Island or the NASA Causeway off U. S. Route 1 two miles south of Titusville.

# # # # #

Feb. 12, 1987

NASA News

National Aeronautics and
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Immediate

KSC RELEASE NO. 26-87

RAILROAD TRACK CONSTRUCTION CORPORATION AWARDED NASA CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Railroad Track Construction Corporation, a subsidiary of Florida East Coast Railway, St. Augustine, Fla., a three-year $3,846,398 contract to continue with the maintenance and repair of KSC's 40-mile railroad system.

Work being performed by the contractor includes replacing most of the wooden railroad ties with concrete, straightening and ballasting the track, making adjustments to the track switches, and repairing the railroad bridge that connects Kennedy Space Center with Titusville. Grade crossing repairs will consist of upgrading the present system with a prefabricated concrete system.

The major portion of the track work will be done on the 12-mile section of KSC mainline between the Indian River and the Vehicle Assembly Building.

The cost-plus-fixed-fee contract covers the period from Jan. 1, 1987 through Dec. 31, 1989. The initial contract was awarded to RTCC in October 1983.

# # #

February 19, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
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For Release:

Mitch Varnes
Area Code 305-867-2363

Immediate

CONSTRUCTION BEGINS ON SPACEPORT USA ART GALLERY

KENNEDY SPACE CENTER, Fla. - Construction is underway at Spaceport USA, the Kennedy Space Center's visitors complex, to build a permanent home for NASA's critically acclaimed art collection - "The Artist and the Space Shuttle."

"The Artist and the Space Shuttle" is an exhibit comprised of a variety of art media, including sculptures and other three-dimensional art forms. More than 100 pieces of art, representing the work of over 50 of the nation's leading artists, are included in the collection.

The exhibit is an extension of the NASA art program that began in 1962 and depicts all facets of the Space Shuttle program.

Before being permanently acquired by the Kennedy Space Center, "The Space Shuttle and the Artist" collection was on loan from NASA to the Smithsonian Institution. It has been exhibited at the Air and Space Museum in Washington, D. C. and at many of the world's finer art galleries and museums.

At Spaceport USA, the exhibit will be displayed in a futuristic two-story gallery to be located in the east wing of the Galaxy Center.

The art gallery has been designed by Stottler Stagg & Associates Architects, Engineers, Planners, Inc. of Cape Canaveral, Fla. It will be built by Frank Kennedy Construction, Inc. of Cape Canaveral.

Arnold I. Richman, chief of the KSC's Visitors Services Branch, says he is pleased to have the art gallery and Shuttle art collection at Spaceport USA. "Photography shows launches in a realistic and familiar format," said Richman. "Art instead tends to humanize the program and brings it into a different light that can be interpreted individually by the viewer," he added. "We're very happy to have been chosen as the final home for 'The Space Shuttle and the Artist' collection."

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NASA Art Program Director Robert Shulman sees the erection of an art gallery as being a significant event. "The construction of a gallery at KSC means the Shuttle collection will no longer be on a revolving tour and continuously being shipped from place to place," he said. "It's kind of nostalgic for the collection to end up at KSC," Shulman noted. "That's where the idea for most of the works began. They have traveled around the world and are now returning to KSC. It kind of closes a circle."

Construction of the estimated $250,000 art gallery is expected to be completed by June 1. The gallery should be open to the public by mid-summer.

There will be no entry fee charged to view the collection or to visit the art gallery.

Spaceport USA is Florida's fourth most popular attraction and draws more than two million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and for the IMAX film. "The Dream Is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge.

Spaceport USA is open to the public every day of the year with the exception of Christmas.

# # # # #

Feb. 19, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO.

SPECIALTY MAINTENANCE CONSTRUCTION, INC. WINS NASA CONTRACT

KENNEDY SPACE CENTER, Fla. -- Specialty Maintenance and Construction, Inc., a small business located in Lakeland, Fla., has been awarded a $3,048,035 contract to design and construct an Annex Addition to the Orbiter Processing Facility (OPF) at KSC's Launch Complex 39.

The new facility will provide permanent housing for employees who are now located in trailers and other temporary facilities.

A design of the new three-story, 34,000 square-foot facility that will be occupied by technicians, quality control inspectors and management personnel will begin this month. The building is expected to become operational by March 1988. In addition to the offices and conference rooms, a lunch room for the employees will be located in the facility.

The cost-plus-fixed-fee contract also requires Specialty Maintenance to modify the heating, ventilation, and air-conditioning system on the existing OPF Annex.

# # #

February 24, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

KSC Release No. 31 - 87

NOTICE TO EDITORS/NEWS DIRECTORS;

USSR 1988 OLYMPIC BOXING TEAM TO VISIT SPACE CENTER

KENNEDY SPACE CENTER, Fla. - The Soviet Union's boxing team for the 1988 Olympics will visit the Kennedy Space Center on Monday, March 2.

The Soviet party, consisting of 22 boxers, six trainers and two interpreters, will arrive at Spaceport USA - KSC's visitors center - at 11:15 a.m. and immediately embark upon a tour of the Space Shuttle launch facilities at Complex 39.

Their itinerary will include visits to the Shuttle Landing Facility, the crawler-transporter parking site, Launch Control Center and Complex 39's Pad A. The tour will end at approximately 1:45 p.m. following the viewing of the "The Dream Is Alive," the large-format Imax film on the Space Shuttle, at Spaceport USA.

There will be two photo opportunities for the press, one at the crawler-transporter site and the other at Pad A.

News media representatives who wish to cover the visit should be at the News Center no later than 11 a.m.

# # # # #

Feb. 27, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Mitch Varnes
305-867-2363

For Release:
IMMEDIATE

KSC Release No. 37-87

FEBRUARY ATTENDANCE CONTINUES STRING OF RECORD-BREAKING MONTHS AT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- February attendance at Spaceport USA, the Kennedy Space Center's visitors complex, reached an all-time high for the year's second month when an estimated 218,000 people visited America's spaceport.

The February attendance figure marks the fifth consecutive month that monthly visitor records have been shattered, and is the highest of any February since the space center was opened for public tours in 1966. The previous high for February was in 1986 when more than 192,000 visitors came to Spaceport USA.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Seven record breaking months helped boost Spaceport USA attendance to unprecedented levels in 1986.

Cumulative attendance for the first two months of 1987 is 11 percent higher than that of the same period in 1986.

Arnold Richman, chief of visitors services at KSC, attributes Spaceport USA's recent rise in attendance to a number of factors. "Larger than usual bike and race week crowds at Daytona and other Central Florida attractions have played a big part in our attendance increase," Richman said.

Richman also cited Spaceport USA's close proximity to Daytona and Orlando as being a cause for tourism increase. "Lower airline fares and gasoline prices have brought more people to Florida. Spaceport USA is just an hour from either city, and that's a very short distance if you're on a cross-country vacation," he added.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight

-more-

hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

-March 3, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO. 40-87

UNIVERSITY OF FLORIDA WINS CONTRACT FOR NASA SEMINARS

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $49,995 contract to the University of Florida at Gainesville to organize a series of industrial outreach seminars that will further develop cooperative projects among NASA, the private sector and the academic community.

Concentrating in the areas of high technology businesses, the NASA-Southern Technology Applications Center (STAC), will be responsible for organizing the Florida seminars. Although the STAC is headquartered at the University of Florida, it has branch offices in all state universities.

The effort is aimed toward non-aerospace companies for the purpose of getting them involved in the commercialization of space. It will consist of three elements: commercialization of space, which is concentrated on materials processing; the Small Business Innovation Research program (SBIR), and technology transfer from NASA to private industry.

The series of seminars, which will be conducted by NASA personnel from Kennedy Space Center, are divided into two types. One type will focus on the three elements mentioned, and the second type will involve the NASA Industrial Affairs Office, which will familiarize companies on correct procedures for doing business with NASA and its contractors.

The thrust of the project is to implement the President's policy on commercialization of space and competitiveness of the American economy.

The one-year, fixed-price contract is an ongoing program with STAC.

# # #

March 12, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
IMMEDIATE

Mitch Varnes
305-867-2363

KSC Release No. 47-87

MARCH ATTENDANCE AT SPACEPORT USA SETS RECORD FOR SIXTH CONSECUTIVE MONTH

KENNEDY SPACE CENTER, FLA. -- Attendance at Spaceport USA, the Kennedy Space Center's visitors complex, soared to an all-time high mark in March when an estimated 261,000 people visited America's Spaceport.

The March attendance figure marks the sixth straight month that monthly visitor records have been shattered and the ninth time in the past 12 months that monthly records at Spaceport USA have reached their highest levels since the space center was opened for public tours in 1966. The previous high for March was in 1986 when about 250,000 visitors came to Spaceport USA.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Eight record breaking months helped boost Spaceport USA attendance to unprecedented levels in 1986.

Cumulative attendance of 631,751, for the first three months of 1987, is running 6.5 percent higher than 578,266, during the same period in 1986.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

April 1, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

April 28, 1987

Dick Young
Area Code 305/867-2468

KSC RELEASE NO. 54-87

NOTICE TO EDITORS/NEWS DIRECTORS

KSC'S 25TH ANNIVERSARY OPEN HOUSE MAY BE COVERED BY NEWS MEDIA

KENNEDY SPACE CENTER, Fla. - An "open house" for KSC employees and their families will be held at the Spaceport from 9 a.m. until 3 p.m.on Saturday and Sunday, May 2 - 3, as part of the center's observance of its 25th anniversary.

Thousands of Spaceport employees are expected to take advantage of the opportunity to show their families their working areas, explore Space Shuttle and payloads processing facilities and view the Orbiters Atlantis and Columbia.

Facilities to be open on Cape Canaveral Air Force Station include Delta Launch Complex 17, Atlas Centaur Launch Complex 36, the Air Force Space Museum and the solid rocket booster recovery ships docked at Hangar AF.

The open house may be covered by news media representatives . Coverage will be coordinated from the KSC News Center at Launch Complex 39, which will be open from 9 a.m. until 3 p.m. on both days. Media representatives should report to the News Center for assistance in coordinating open house coverage.

There will be limited staffing and photographers should report to the News Center by 11 a.m. on Saturday and 12:30 p.m. on Sunday to arrange escort assistance for their coverage.

Media representatives without permanent badges should contact the KSC News Center at Area Code 305/867-2468 no later than noon on Friday, May 1, to arrange for credentials.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
IMMEDIATE

Mitch Varnes
305-867-2363

KSC Release No. 55-87

APRIL WAS EIGHTH STRAIGHT RECORD-BREAKING MONTH AT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- Attendance at Spaceport USA, the Kennedy Space Center's visitors complex, rocketed to a record high in April when an estimated 248,000 people visited America's spaceport.

The April attendance figure marks the eighth consecutive month that monthly visitor records have been shattered and the tenth time in the past 12 months that monthly records at Spaceport USA have reached their highest levels since the space center was opened for public tours in 1966. The previous high for April was in 1982 when about 200,000 visitors came to Spaceport USA.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Eight record-breaking months helped boost Spaceport USA attendance to unprecedented levels in 1986.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

-May 1, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Sarah Keegan
Washington, D.C.
(Phone: 202/453-8536)

For Release:
May 15, 1987

3:00 p.m. EDT

RELEASE: 87-76

NASA PLANS USE OF EXPENDABLE LAUNCH VEHICLES

NASA Administrator Dr. James C. Fletcher today announced a plan to acquire expendable launch vehicle (ELV) services for NASA missions. Launch services will be procured competitively from the private sector whenever they are available on a commercial basis except for a transitional first phase covering launches through 1991.

"NASA's purpose in seeking expendable launch services is to lessen dependence on a single launch system, the Space Shuttle. Expendable launch vehicles will help assure access to space, add flexibility to the space program, and free the Shuttle for manned scientific, Shuttle-unique and important national security missions," Dr. Fletcher said.

"A major objective of this plan is to accelerate the deployment of the nation's backlog of space science missions. The reintroduction of expendable launch vehicles will provide NASA with a so-called 'mixed fleet' and help achieve this objective," Dr. Fletcher continued.

In the first phase NASA plans to acquire launch services noncompetitively in order to make the best match between available ELVs and already designed payloads and mission requirements. Launch services for types of ELVs the Department of Defense (DOD) currently has under contract with industry may be acquired through DOD.

NASA missions currently under consideration for the first phase of the plan and the potential dates when they could be launched are: ROSAT (Roentgensatellit) -- FY 1990; CRRES (Combined Release and Radiation Effects Satellite) -- FY 1990; EUVE (Extreme Ultraviolet Experiment) -- FY 1991; a TDRS (Tracking and Data Relay Satellite) -- FY 1991; and a backup vehicle for a planetary mission -- FY 1991.

-more-

Final approval and scheduling of these launches will depend on the availability of funds for acquiring ELVs and preparation of the payloads. Cost estimates for the first phase and funding requirements for FY 1988 are currently under review.

For ELV launch services beyond the first phase, NASA plans to initiate the necessary actions in FY 1988 to contract competitively with industry beginning in FY 1989. For each class of ELV NASA intends to enter into multi-year service contracts under which launch services for specific missions will be ordered on an annual basis to support new programs as they are approved. Launch services for ELVs in classes for which competition is not possible and which are under DOD contract may continue to be acquired from the private sector through DOD.

This approach actively supports the Administration's ELV commercialization policy. It will provide industry with a sufficiently long-term business base to sustain operations and compete effectively in the commercial marketplace for new business. Additional advantages of this method over single-payload procurements are quantity-buy cost savings and the flexibility to substitute missions when payloads fall behind schedule or priorities change.

NASA's requirements for ELV launch services under the multi-year service contracts will depend on future program approvals. At this time NASA foresees possible future requirements for three to five "medium" class ELVs (e.g., Delta) per year and one to two per year in both the "intermediate" class (e.g., Atlas Centaur or Titan III) and the "large" class (e.g., Titan IV) in addition to a number of missions in the small vehicle class yet to be determined.

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This release and other NASA information is available electronically through DIALCOM, INC. For access to NASA NEWS through this system, contact Jim Hawley, DIALCOM, INC. at 202/488-0550.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Sarah Keegan
Washington, D.C.
(Phone: 202/453-8536)

For Release:
May 15, 1987

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-end-

This release and other NASA information is available electronically through DIALCOM, INC. For access to NASA NEWS through this system, contact Jim Hawley, DIALCOM, INC. at 202/488-0550.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
May 20, 1987

Dick Young
Area Code 305/867-2468

KSC RELEASE NO. 57 - 87

KSC DIRECTOR MC CARTNEY WINS AWARD FOR OUTSTANDING LEADERSHIP

KENNEDY SPACE CENTER, Fla. - The American Astronautical Society will present its Military Astronautics Trophy to KSC Director Forrest S. McCartney at an honors and awards banquet to be held at the Park Hyatt Hotel in Washington, D. C. on Wednesday, May 27.

McCartney, a lieutenant general in the U. S. Air Force who assumed the post of KSC director on Oct. 1, 1986, will be presented the high honor "for outstanding leadership in the application of astronautics to the development of space systems for national defense."

The award is based upon McCartney's contributions to the field of military astronautics during his career-long association with Department of Defense projects.

The awards banquet is part of the two-day, AAS-sponsored 6th Annual Classified Military Space Symposium being held at the National Academy of Sciences Auditorium.

# # # # #

Note for the News Media:

Additional information on the award or other aspects of the symposium may be obtained from Paula Korn, Area Code 202/479-0025.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Sarah Keegan
Headquarters, Washington, D.C.
(Phone:202/453-8536)

May 20, 1987
2:30 p.m. EDT

RELEASE:87-80

NASA PLANS NEXT SHUTTLE FLIGHT

NASA Administrator Dr. James C. Fletcher today announced June 1988 as the new target date for the next Space Shuttle launch. The exact date will be selected by the Administrator based upon the results of expanded testing of Shuttle systems, revised launch crew procedures and actual hardware deliveries.

This new target date reflects the decision, announced in April, to perform two major systems tests prior to flight. These tests are a "wet" countdown demonstration test, in which the external tank is filled with fuel for a simulated launch countdown, and a flight readiness firing in which the three main engines will be fired for about 20 seconds.

These two tests, which will be conducted approximately 6 weeks prior to launch, will provide engineering data to evaluate various systems modifications and provide an opportunity to exercise the launch and mission control teams and the revised procedures. The plan also permits acquiring new fabrication tooling to improve the tolerance on the redesigned solid rocket motor insulation J-seal.

Current plans are for two additional flights in 1988 and seven flights in 1989. Admiral Richard H. Truly, NASA associate administrator for space flight, indicated that necessary adjustments to the Shuttle manifest of October 1986, will be worked out over the next few months.

In establishing the target for launch, Dr. Fletcher stated, "Safely returning the Space Shuttle to flight is NASA's highest priority. Our revised plan for Space Shuttle recovery is ambitious and assumes that we will successfully complete our test and processing objectives. I know I can count on the whole NASA team -- and, of course, I include our contractor partners -- to move out enthusiastically toward this new goal."

-end-

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
IMMEDIATE

Mitch Varnes
305-867-2363

KSC Release No. 68-87

JUNE ATTENDANCE CONTINUES STRING OF RECORD-BREAKING MONTHS AT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- June attendance at Spaceport USA, the Kennedy Space Center's visitors complex, reached an all-time high for the year's sixth month when an estimated 249,000 people visited America's spaceport.

The June attendance figure marks the ninth consecutive month that monthly visitor records have been shattered, and is the highest of any June since the space center was opened for public tours in 1966. The previous high for June was in 1972 when more than 220,000 visitors came to Spaceport USA.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Seven record breaking months helped boost Spaceport USA attendance to unprecedented levels in 1986.

Cumulative attendance of 1,305,640 for the first six months of 1987 is 16.2 percent higher than the same period of 1986 when 1,123,248 visited Spaceport USA.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

# # # # #

July 1, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
Immediate

Dick Young
Area Code 305/867-2468

KSC Release No. 94 - 87

FORREST S. MC CARTNEY SELECTED AS KSC DIRECTOR

KENNEDY SPACE CENTER, Fla. - The selection of Forrest S. McCartney (Lt. Gen. USAF, retired) as director of NASA's John F. Kennedy Space Center was announced today by NASA Administrator Dr. James C. Fletcher.

McCartney had served as director of NASA's principal launch base under detail from the Air Force since Oct. 1, 1986. He concluded a distinguished, 35-year military career today with a retirement ceremony at the office of the Secretary of the Air Force in the Pentagon.

He assumes the KSC directorship under senior executive service status effective Sept. 1, 1987.

McCartney, a native of Ft. Payne, Ala., came to the Kennedy Space Center from the position of Commander, Air Force Space Division.

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Aug. 31, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
IMMEDIATE

Mitch Varnes
305-867-2363

KSC Release No. 96-87

A RECORD-BREAKING AUGUST CAPS SPACEPORT USA'S BUSIEST SUMMER

KENNEDY SPACE CENTER, FLA. -- Record-breaking crowds during the months of June, July and August contributed to the busiest summer in the history of Spaceport USA, the Kennedy Space Center's visitors complex.

More than 820,000 people visited Spaceport USA during the 1987 summer season, which was highlighted by the public opening of NASA's first permanent art gallery on August 2.

August was the eleventh straight record-breaking month at Spaceport USA, but the unprecedented summer numbers began in June when an estimated 249,000 people visited America's Spaceport. The previous high for June was set in 1972 when more than 220,000 visitors came to Spaceport USA.

The busiest month in the visitors center's history came this past July when Spaceport USA hosted about 302,000 guests. The July 1987 figure broke the old all-time monthly attendance record of 260,000 visitors, which was set in July 1986.

The string of record-smashing months continued in August when about 270,000 people came to Spaceport USA. Before this time, the busiest August was in 1986 when more than 232,000 space enthusiasts visited the center.

Spaceport USA's previous summertime high was in 1986 when over 725,000 people visited KSC. The 1987 attendance figure of 820,000 represents about a 12 percent increase over the same period of 1986.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million visitors passed through the space center's gates. Seven record months helped boost Spaceport USA attendance to new highs in 1986.

Attendance is increasing at an almost breakneck pace, but Arnold I. Richman, KSC's chief of visitors services, says the large

-more-

crowds are not deterring additional visitors from coming to Spaceport USA or affecting the stay of those who do come. "We're getting more people than we've ever had before," Richman said. "The comments we receive indicate that the great majority of visitors leave with a positive feeling about both Spaceport USA and the nation's space program. If current trends continue, we're in for another record year in 1987," he added.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Recreational Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabila are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

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Sept. 1, 1987

NASA News

National Aeronautics and
Space Administration
John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

September 15, 1987
2:00 P.M. EDT

Sarah Keegan
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Jack Riley
Johnson Space Center, Houston
(Phone: 713/483-5111)

Release: 87-139

SPACE SHUTTLE MISSION STS-27 CREW NAMED

NASA today announced five crew members for STS-27, a Department of Defense Space Shuttle mission targeted for early fall, 1988, aboard the orbiter Atlantis.

Crew members are Robert L. Gibson (Cdr.,USN), commander; Guy S. Gardner (Lt.Col.,USAF), pilot; and mission specialists Richard M. Mullane (Col., USAF), Jerry L. Ross (Lt.Col., USAF) and William M. Shepherd, (Cdr., USN).

Gibson was pilot of STS-41B in February, 1984, and commander of STS-61C in January, 1986. He was born October 30, 1946, in Cooperstown, N.Y., but considers Lakewood, Calif., his hometown.

STS-27 will be Gardner's first space flight. He was born January 6, 1948 in Alta Vista, Va., but considers Alexandria, Va., his hometown.

Mullane flew as a mission specialist on STS-41D in August, 1984. He was born September 10, 1945, in Wichita Falls, Tex., but calls Albuquerque, N.M., his hometown.

Ross was a mission specialist on STS-61B in November,1985. He was born January 20, 1948, in Crown Point, Ind.

Shepherd will be making his first space flight. He was born July 26, 1949 in Oak Ridge, Tenn.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Mark Hess
Headquarters, Washington, D.C.
(Phone: 202/453-1175)

September 24, 1987

Jim Sahli
Marshall Space Flight Center, Huntsville, Ala.
(Phone: 205/544-0034)

Release: 87-141

USERS TO VIEW SPACE STATION MODULES

NASA officials, U.S. astronauts, designers and potential domestic and international users of the permanently manned Space Station will meet at NASA's Marshall Space Flight Center (MSFC), Huntsville, Ala., on Oct. 2 for an early look at Space Station modules.

Although the Space Station will not be operational until the mid 1990's, attendees of the Space Station Laboratory Workshop at MSFC will be able to enter full-scale engineering mock-ups of the U.S. laboratory and habitation modules to see first-hand what living and working will be like in Space Station.

Attendees will receive briefings on the Space Station laboratory module and discuss its potential use. They will tour the Space Station mock-ups and discuss how they may be used during the detailed design and construction of the Space Station. More than 100 attendees are expected.

Once in orbit, the laboratory will be the site of research and development conducted to understand and characterize the effects of weightlessness on people and materials. Earlier experiments conducted on Spacelab have shown that new materials with vastly enhanced properties can be made in the weightless environment of space flight.

Applications research and development in the U.S. laboratory module will build upon this knowledge to produce electronics, pharmaceuticals and alloys not possible to make on Earth. The knowledge gained from life sciences experiments, studying the effects of weightlessness on humans for substantial periods, is essential in planning human missions to the planets.

- more -

MSFC's high fidelity mock-up of the laboratory module is equipped with a centrifuge, glove box, computerized work stations, a shower and more. The habitation module mock-up contains crew quarters, waste management and medical facilities and an eating/meeting area. The mock-ups will serve as training facilities for astronauts, scientists and engineers who will work aboard the Space Station.

For some years to come, the mock-ups will serve primarily as engineering aids for concept and definition planning. As the years progress, the mock-ups will evolve with the actual design of the Space Station, the fidelity of the ground-based elements matching the orbital Station.

The MSFC has responsibility for construction of all U.S. modules, including the crew quarters, U.S. laboratory and logistics modules, interconnecting passageways called nodes and the life support system.

- end -

This release and other NASA information is available electronically through ITT Dialcom. For access to NASA News through this system, contact Jim Hawley, ITT Dialcom, Inc. at 202/488-0550.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dwayne Brown
Washington, D.C.
(Phone: 202/453-8400)

For Release:
September 25, 1987

NOTE TO EDITORS

Scientists from NASA, the National Oceanic and Atmospheric Administration, the National Science Foundation, National Center for Atmospheric Research and other agencies and universities will hold a press conference September 30, 1987, on the preliminary findings from the Antarctic Ozone Expedition.

The press conference will be held at NASA's Goddard Space Flight Center (GSFC), Greenbelt, Md., at 1:00 p.m. EDT in GSFC's Visitor Center Auditorium.

The Antarctic Ozone Expedition's goal is to come up with an understanding of the cause and nature of annually occuring depletion in the ozone layer above the Antarctic region. This preliminary report will focus on what is known at this point from the expedition's research. This information is of world-wide importance because of the ozone's invaluable role for life on Earth.

Media wishing to attend the press conference, requiring transportation to GSFC, can meet at 11:45 a.m. EDT in front of the NASA Headquarters building located at 400 Maryland Ave S.W. A NASA bus will take media representatives to the GSFC Visitor Center. The bus will leave promptly at 12 noon. Media furnishing their own transportation, leaving Washington, should take the Baltimore-Washington Parkway North to route 193 East. Stay on route 193 for approximately two miles. Continue past GSFC's main entrance and turn left onto Soil Conservation Road. The Visitor Center is on the left. From Baltimore take the Baltimore-Washington Parkway south to the Beltsville Agriculture Research Center exit and follow the signs to the Visitor Center.

The press conference will be carried on NASA Select television (RCA Satcom F2R, transponder 13, frequency 3960 MHz, 72 degrees West Longitude). There will be 2-way question and answer capability.

-end-

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Pat Phillips
(305) 867-2468

For Release:
Immediate

KSC Release No. 102-87

NOTICE TO EDITORS/NEWS DIRECTORS

THAI PRIME MINISTER TO VISIT KSC OCT. 2

KENNEDY SPACE CENTER, Fla. -- Prime Minister Prem Tinsulanonda of Thailand will visit the Kennedy Space Center on Friday, Oct. 2.

Prime Minister since 1980, Prem is also the Thai Minister of Defense and the former Commander in Chief of the Royal Thai Army.

Prem has made official visits to several countries in Asia and Europe during his tenure. He met with President Ronald Reagan in Washington in October, 1981.

During his visit to KSC, Prem will meet with Center Director Forrest McCartney. He and his delegation will tour key points on KSC, including Launch Complex 39.

The itinerary also includes viewing of the spectacular, large-format MAX film "The Dream is Alive" at Spaceport USA.

News media wishing to cover Phem's visit should be at the KSC News Center no later than 9 a.m. Oct. 2. Media without permanent credentials should call 305/867-2468 to make access arrangements.

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September 25, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Jim Sahli
Marshall Space Flight Center, Huntsville, Ala.
(Phone: 205-544-0034)

NOTE TO EDITORS: SPACE STATION LABORATORY WORKSHOP

News media representatives are invited to attend a day-long Space Station Laboratory Workshop to be held at Marshall Space Flight Center, Huntsville, Ala., on Friday, Oct. 2, 1987. The workshop will feature briefings on the U.S. laboratory module and its potential use and tours of full-scale engineering mock-ups of the U.S. laboratory module and the habitation module.

More than 100 attendees will participate in the conference, including representatives of space agencies in Europe, Japan and Canada, NASA officials, U.S. astronauts, designers and potential users of the permanently manned Space Station.

This workshop is an excellent opportunity to learn first-hand how Space Station living and working areas may look and how they will be used.

Photography will be permitted during the workshop, and there will be an opportunity at midday for reporters to question representative workshop participants.

Those wishing to attend the workshop should contact Dominic Amatore or Jim Sahli of the Marshall Center Public Affairs Office at 205 544-0034 by September 25. The workshop begins at 8:00 a.m. and concludes at 5:00 p.m. There is no fee, and lunch will be available at a cost of $5.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Mitch Varnes
305-867-2363

IMMEDIATE

KSC Release No. 105-87

SEPTEMBER CAPS A YEAR OF RECORD-BREAKING MONTHS AT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- Monthly attendance at Spaceport USA, the Kennedy Space Center's visitors complex, reached an all-time high for the year's ninth month when more than 124,000 people visited America's Spaceport.

The unprecedented September attendance mark extends the visitors center's string of consecutive record-breaking months to 12. The September 1987 figure represents a 39 percent increase over the same month in 1986 when about 92,000 people visited Spaceport USA.

The previous record high for September occurred in 1981 when over 117,000 people visited the Kennedy Space Center. The launch of the first two Space Shuttle missions occurred in 1981.

Cumulative attendance through September now stands at about 1.9 million, which is 13.5 percent higher than the same period in 1986 when about 1.7 million people visited Spaceport USA.

The busiest year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Seven record-breaking months -- four of which have already been topped this year -- helped boost Spaceport USA attendance to new highs in 1986.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Recreational Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

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Oct. 1, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
305/867-2468

Immediate

KSC RELEASE NO. 107-87

NASA AWARDS $61 MILLION CONTRACT EXTENSION

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a contract extension valued at $61,083,300 to Air Products and Chemicals, Inc., Allentown, Pa., to continue providing liquid hydrogen for the Space Shuttle.

Produced in New Orleans, La., the liquid hydrogen is used in conjunction with liquid oxygen as a propellant for the Space Shuttle orbiter's three main engines. It also is used, again in conjunction with liquid oxygen, to produce electricity in the orbiter's fuel cells.

The fixed-price-requirements-contract covers the period from Dec. 1, 1987 through Nov. 30, 1990. This extension exercises an option contained in an existing contract. The total value of the contract to date since its inception in July 1975 is $212,768,375.

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Oct. 5, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO. 112-87

W&J CONSTRUCTION CORPORATION SELECTED FOR KSC CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has selected W&J Construction Corporation, Cocoa, Fla., for negotiations leading to award of a design-build contract for the Launch Complex 39 Operations Support Building.

The new five-story, 188,000 sq. ft. building will provide permanent housing for approximately 1,500 Shuttle engineering and support personnel currently located in temporary facilities in the LC-39 area.

The cost-plus-fixed-fee contract provides for management, labor, material and equipment to design, construct, activate and turn over a new and fully functional Operations Support Building. The proposed cost for the 17-month performance period is approximately $13.2 million.

Proposals also were submitted by Federal Construction Company, Titusville, Fla.; LPC Constructors, Tampa, Fla.; M.A. Mortenson Co., Tampa, Fla.; McCormick Construction Co., Inc., Hunt Valley, Md.; Morse-Diesel, Inc., Ft. Lauderdale, Fla., and National Projects, Inc., Boise, Idaho.

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Oct. 21, 1987

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
IMMEDIATE

Mitch Varnes
305-867-2363

KSC Release No. 113-87

DAEDALUS AIRCRAFT MODEL AND FLIGHT CREW TO VISIT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- Two members of the Daedalus Project, a Massachusetts Institute of Technology education and research program dedicated to advancing human-powered flight, will be at Spaceport USA, the Kennedy Space Center's visitors complex, on Tuesday, Nov. 3.

Named after the inventor Daedalus, who legend says escaped from the Greek island of Crete by constructing wings and flying away, the Daedalus Project is nearing the climax of its three-year history. The man-driven aircraft will be used in April 1988 to attempt to recreate Daedalus' mythical 70-mile flight from Crete to Greece.

Two Daedalus Project test pilots, Lois McCallin and Glenn Tremml, will be at Spaceport USA to conduct a slide and video presentation and to field questions concerning the program. McCallin and Tremml, who are both holders of individual world records in several categories of human powered flight, will display a 1/10th scale model of their giant featherweight aircraft.

The public is invited to attend the presentation, which will take place inside Spaceport USA's Galaxy Theater at 10 a.m. on Nov. 3.

United Technologies Corporation (UTC), based in Hartford, Conn., is the primary sponsor of the Daedalus Project. UTC's subsidiary, USBI, is a prime contractor in NASA's Space Transportation System.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Recreational Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and to view the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits and otherspace memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

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Oct. 28, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Barbara Selby
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Diana Boles
Kennedy Space Center, Fla.
(Phone: 305/867-2468)

For Release:

November 6, 1987
4:00 P.M.

KSC NO. 114-87

NASA SELECTS BOEING AEROSPACE FOR ENGINEERING SERVICES

NASA's John F. Kennedy Space Center, Fla., has selected Boeing Aerospace Operations, Cocoa Beach, Fla., for negotiations leading to a contract award for engineering services. This new effort consolidates work being performed by Planning Research Corporation and Specialty Maintenance and Construction, Inc.

The contract will provide engineering and management for high technology and research projects, as well as for routine technician and documentation support to the Directorate of Engineering Development.

Services to be provided by Boeing Aerospace Operations include engineering studies and investigations; conceptual, preliminary, detail and development engineering; documentation support and maintenance; laboratory technical services and laboratory operation and maintenance.

With a basic performance period of 2 years beginning Dec. 1, 1987, the cost-plus-award-fee contract also will contain three 1-year priced options. The total estimated cost proposed by Boeing Aerospace Operations for the 5-year period is approximately $26.4 million.

Proposals also were submitted by Bechtel National, Inc., Cocoa Beach, Fla.; Bendix Field Engineering Corporation, Columbia, Md.; EG&G Florida, Inc., Cocoa, Fla.; General Physics Corporation, Columbia, Md.; Grumman Technical Services, Titusville, Fla.; Gulf Engineering & Development Corporation, Tampa, Fla.; PRC Systems Service Company, McLean, Va.; Precision Fabricating & Cleaning, Inc., Cocoa, Fla.; Science Applications International Corporation, San Diego, Calif.; Sverdrup Technology, Inc., Tullahoma, Tenn.; Williams-Russell and Johnson, Inc., Atlanta, Ga.; and Wyle Laboratories, Huntsville, Ala.

- end -

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Barbara Selby
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Barbara Schwartz
Johnson Space Center, Houston
(Phone: 713/483-5111)

November 12, 1987

RELEASE: 87-170

SHUTTLE CREW ESCAPE SYSTEMS TO BE TESTED THIS MONTH

Two concepts to provide crew egress capability during Space Shuttle controlled gliding flight are being tested this month at the Naval Weapons Center, China Lake, Calif.

The two escape methods are tractor rockets that would extract the astronauts through the open hatch and a telescoping pole that would extend through the hatch for the crew members to slide down using a lanyard attached to the rod.

Tractor rocket testing will begin Nov. 19, 1987. A series of 12 tractor rocket tests will be conducted using life-like dummies that will be pulled from a Convair-240 aircraft modified to simulate the hatch opening of an orbiter.

The first six tests will be developmental tests conducted approximately 2 weeks apart, and results of each test will be thoroughly analyzed so modifications can be made prior to the next test if necessary. After the six developmental tests, there will be two design verification tests. The last four tests will use dummies that are fully outfitted with Shuttle flight gear and equipment for the certification tests.

"Objectives of the tests are to establish performance margins and to certify the tractor rocket system for flight," Robert R. Rice, manager of the Tractor Rocket Test Program, said.

Telescoping pole tests are scheduled to begin Nov. 30, 1987. There will be a total of 14 tests. The pole concept will be tested using volunteer Navy parachutists to slide along the rod extending from a Buffalo aircraft and then later from a C-141 aircraft.

- more -

The jumpers will attach a lanyard to the pole, exit the aircraft in a tucked position, release at the end of the pole and parachute to the ground. Objectives of the test are to establish the feasibility of this concept and to determine the margins on orbiter wing clearance.

After completion of the two test programs, data will be evaluated and presentations will be made to NSTS managers who will make a decision early next year on which of the two egress methods may be incorporated into Discovery. The test and evaluation period will allow the addition of either system prior to STS-26.

- end -

NOTE TO EDITORS/NEWS DIRECTORS:

Hurricane Mesa, Utah, tractor rocket test video, #VCL-1208, is available at Johnson Space Center, 713 483-8643.

-end-

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Pat Phillips
(305) 867-2468

For Release:
Immediate

KSC Release No. 120-87

NASA/KSC SPONSORS INDUSTRIAL OUTREACH SEMINAR DEC. 3

KENNEDY SPACE CENTER, Fla. -- How to compete for NASA and KSC prime contractor business will be among the key topics as NASA/KSC sponsors a free Industrial Outreach Seminar Thursday, Dec. 3 at the Holiday Inn, University of Central Florida area, in Orlando, FL.

A special highlight will be a luncheon address by Dr. Ludwig Van Den Berg, who served as a payload specialist aboard the 51-B Space Shuttle mission. Van Den Berg, an EG&G scientific specialist, will discuss his flight experiences and knowledge gained about crystal growth applicable to solid state detector materials.

Dr. Van Den Berg's address will highlight another topic for the day-long seminar: microgravity research and opportunities for commercialization of NASA technologies.

The 8:30 a.m. to 4:30 p.m. seminar is open to the public and is designed to let businesses know how they can cash in on NASA business opportunities and research grants. The seminar will also provide valuable background information for future microgravity innovations.

NASA and the Southern Technology Applications Center (STAC), are co-hosts for the meeting, with support from the College of Engineering, University of Central Florida. Guest speakers will include George Mosakowski, Chief of Advance Projects as KSC; Dr. Charles Lundquist, Director, Consortium for Materials Development in Space at the University of Alabama; and James Ralph, President, International Space Corp.

In addition, Norm Perry, NASA/KSC Industrial Assistance Officer, and other small Business Assistance officers from NASA and several KSC prime contractors will attend. There will be

(more)

opportunities for individual meetings representatives from NASA, EG&G, Lockheed, McDonnell-Douglas/KSC, Rockwell, and USBI/BPC.

The seminar is one of a series of meetings throughout the state, with an emphasis on providing vital information about space-age business opportunities at KSC.

For furthur information, call the STAC office at UCF at 305-275-2706, 305-281-5826, or toll-free in Florida 800-354-4832.

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Nov. 24, 1987

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Dec. 14, 1987

KSC Release No. 128 - 87

NOTICE TO EDITORS/NEWS DIRECTORS:

KSC DIRECTOR MC CARTNEY TO MEET WITH PRESS ON THURSDAY, DEC. 17

KENNEDY SPACE CENTER, Fla. - The activities of the year now drawing to a close and the challenges of the coming year will be discussed by KSC Director Forrest S. McCartney in an informal meeting with the press to be held at the KSC News Center at 10:30 a.m. on Thursday, Dec. 17.

News media representatives without permanent credentials should contact the News Center at Area Code 305/867-2468 to arrange for access.

The briefing will NOT be carried by satellite but media personnel unable to attend in person may monitor it by calling the V-2 Circuit at Area Code 305/867-1220, 1240, or 1260.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Sarah Keegan
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

For Release:

January 27, 1988
1:00 p.m.

RELEASE: 88-11

NASA ANNOUNCES NEW SPACE SHUTTLE LAUNCH DATE

NASA today announced a target of August 1988 for launch of the next Space Shuttle mission, STS-26. This new launch target was selected following a major program assessment, subsequent to the most recent full-scale firing of the redesigned solid rocket motor (SRM) in December 1987.

An internal planning date of Aug. 4 will be used to focus the schedules for individual program elements. This planning date, although for internal purposes only, is consistent with the above August target.

The SRMs flown with orbiter Discovery on STS-26 will use the nozzle outer boot ring configuration tested successfully during the Development Motor-8 firing in August 1987. No modifications to that configuration of this component will be included. The STS-26 aft SRM segments, which contain the outer boot ring, will arrive at Kennedy Space Center (KSC), Fla., in early March.

Three full-scale, full-duration test firings are planned prior to the August launch of STS-26. Qualification Motor (QM) -6 will incorporate "manufacturing-type" flaws into the test hardware and is planned for April 7.

Plans do not include any test flaws in the QM-7, targeted for firing June 9. QM-7 will be fired on the new test stand at Morton Thiokol's Wasatch Facility in Utah and will include dynamic sideloading as part of its test objectives.

Production Verification Motor-1, scheduled for July 6, will be a constraint to the STS-26 launch and will purposely contain necessary test flaws to demonstrate design margins of the redesigned case-to-case and case-to-nozzle joints.

- more -

Test flaws introduced into all full-scale motors will have been tested previously in joint demonstration test articles at the Joint Environment Simulator Facility at Morton Thiokol and/or the Transient Pressure Test Article Facility at Marshall Space Flight Center, Huntsville, Ala.

In support of the new target launch date, it is planned that Discovery will be rolled out to KSC Launch Pad 39B on May 13. A Flight Readiness Firing of Discovery's main engines and liquid propulsion system is targeted for June 13.

Announcement of this launch target was slightly delayed to allow time for an initial assessment of recent ultrasonic weld inspections of solid rocket booster aft skirt hardware at KSC. On Tuesday, prior to establishing this new schedule, a recently instituted weld inspection had detected a small void in a low-stress area of the left-hand STS-26 SRB aft skirt hardware. Structural analysis performed since that time has validated program officials' early optimism about the situation, and both skirts are in the process of being cleared for flight with no additional schedule impact.

In announcing the new target launch date for STS-26, Rear Admiral Richard H. Truly, NASA associate administrator for space flight, indicated that he was very pleased with the progress of the Shuttle program toward resuming flight. "The performance of the entire NASA/contractor team over the past month, during the conduct of this major review of the entire Shuttle recovery program, has been outstanding. It has clearly demonstrated that we have struck the proper balance between our first priority of safety and quality, while still maintaining our commitment to return the Space Shuttle to flight just as quickly as we can reliably do so," he said.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Immediate

Jim Ball
Headquarters, Washington, D.C.
(Phone: 202/453-8604)

Pat Phillips
Kennedy Space Center
(Phone: 305/867-2468)

NOTICE TO EDITORS/NEWS DIRECTORS:

NASA COMMERCIAL PROGRAMS MANAGER TO VISIT KSC FEB. 4

James T. Rose, NASA's new Assistant Administrator for Commercial Programs, will visit KSC this week to brief Center management on NASA commercial activities, receive briefings on KSC commercial programs, and tour government and private processing facilities.

A press opportunity has been reserved for 1 p.m. EST on Thursday, Feb. 4 for local reporters to meet informally with Rose at the KSC Press Site auditorium.

Rose will be able to address questions concerning current and projected NASA activities to encourage commercial space ventures as the Shuttle returns to flight status and design and development work is initiated on the Space Station.

Formerly the director of McDonnell Douglas's space manufacturing programs, including the Electrophoresis Operations in Space (EOS) program, Rose was named to his new post last October.

- end -

Feb. 1, 1988

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
Phone: (305) 867-2468

Immediate

KSC RELEASE NO. 8-88

SUN COAST SERVICES, INC. WINS FOOD SERVICE CONTRACT AT KSC

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a concession agreement with an estimated annual sales value of $2.5 million to Sun Coast Services, Inc., a small business firm in Titusville, Fla.

Under the terms of the agreement, the concessioner will provide food services for Kennedy Space Center employees, which includes the operation of cafeterias and mobile canteens. Not only will the food services be provided to employees during regular workdays, but also during space shuttle prelaunch and launch activities that occur outside of regular working hours.

Kennedy Space Center's three main cafeterias are located in the Headquarters Building and the Operations & Checkout Facility in the Industrial Area, and in the Multi-Function Facility at Launch Complex 39.

With a basic performance period of three years beginning Feb. 16, 1988 and ending Feb. 15, 1991, the concession agreement also contains three 3-year option periods.

# # #

Feb. 16, 1988

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Bruce Buckingham
305|867-2468

Feb. 29, 1988

KSC RELEASE NO. 10-88

BREVARD COMMUNITY COLLEGE ESTABLISHED AS KSC CONTRACTOR PRE-EMPLOYMENT EXAMINATION CENTER

KENNEDY SPACE CENTER, Fla. -- A Memorandum of Agreement was signed today between NASA/Kennedy Space Center and Brevard Community College, Cocoa, which establishes BCC as the examination center for NASA contractors to test entry level employees.

The agreement, effective today and signed by Center Director Forrest McCartney and BCC President Dr. Maxwell C. King, is another positive step toward returning the Space Shuttle to safe flight.

"Minimum qualifications and certifications required for technicians and inspectors to perform electrical and mechanical duties on the orbiter and associated systems is of the utmost importance in areas of safety and quality," said Dr. Marvin Williams, project manager for NASA.

"To assure potential employees meet minimum proficiency requirements," Williams said, "the pre-employment qualification examination program is being implemented. This will assure NASA that entry level contractor technicians and inspectors meet basic requirements in positions in the shuttle program."

The testing program is patterned after the Federal Aviation Administration licensing program for aircraft mechanics. Testing is currently under way. The first year's estimated cost to contractors is $25,000.

--MORE--

BCC's Cocoa campus will be responsible for serving as the testing center, proctoring the exam sessions, grading, and providing test results to the contractors. Contractors will reimburse BCC for their services on a per test basis.

This program is the forerunner to a program for possible adoption by NASA Headquarters for all other NASA centers.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dick Young
Area Code 305/867-2468

For Release:
Immediate

KSC NEWS RELEASE NO. 12-88

NOTICE TO EDITORS/NEWS DIRECTORS:

KSC NEWS CENTER TO ESTABLISH TEMPORARY OFFICE AT SPACEPORT USA

KENNEDY SPACE CENTER, Fla. - The Kennedy Space Center's public information office will move into temporary quarters in Room 2001 at Spaceport USA effective Monday, March 7.

News center personnel will occupy the temporary quarters at KSC's visitors information center complex for approximately two weeks while a new roof is installed on the geodesic dome at the Complex 39 news center south of the Vehicle Assembly Building.

The customary telephone numbers will be in use during the temporary relocation. The main news center number will remain Area Code 305/867-2468 and callers will continue to reach audio-visual personnel at Area Code 305/867-7819. Only a limited number of the trunk lines usually available will be relocated and callers receiving busy signals should persist in their efforts to reach news center personnel.

The automatic recording at Area Code 305/867-2525 which is customarily used to provide information during hours of office closure will not be in operation during the relocation period.

The information office's primary photographic file is located in the Complex 39 news center and there will be no access to this file during the relocation of news operations.

Room 2001 is located immediately to the west of the tour bus boarding area at Spaceport USA. This facility is located outside of KSC security areas and access badges are not required.

Hours of operation will be from 8 a.m. until 4:30 p.m. Monday through Friday.

# # # # #

March 1, 1988

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Bruce Buckingham
305|867-2468

For Release:

March 8, 1988

KSC RELEASE NO. 11-88

NASA PREPARES NEW ABORT LANDING SITES FOR SHUTTLE MISSIONS

KENNEDY SPACE CENTER, Fla. -- Preparations are under way to bring on line two new abort landing sites in northwestern Africa. These sites will be used as contingency landing facilities in the event of a transatlantic abort during the launch of STS-26 and subsequent missions.

The new sites are located near Ben Guerir, Morocco (located 40 miles north of Marrakech) and Banjul, The Gambia. Ben Guerir, a former Strategic Air Command base abandoned in 1963, has a 14,000 foot runway and will be the primary transatlantic abort landing site for low inclination orbits.

Banjul, with an 11,800 foot runway, currently serves The Gambia as its international airport and will provide NASA with an in-plane contingency site. The airport lies almost directly below the normal flight path of a Shuttle launched into a standard 28.5 degree orbit.

At Ben Guerir, construction to rejuvenate the surface of the runway has begun. In addition, foundations for the microwave landing system, Precision Approach Path Indicator (PAPI) lights, "Ball/Bar" lights and strobe lights, are being laid at the new sites. Construction at both new sites will include an operations and storage building.

Work has been completed at Kennedy Space Center to ship support equipment to the new locations. Each location will receive about 10 personnel transportation vehicles, a microwave landing system, four sets of PAPI lights, two sets of Ball/Bar lights, two sets of flashing strobe lights, generators for power, portable satellite communications systems, automated weather stations and other support equipment and tools. Ben Guerir will receive additional fire-fighting equipment.

--more--

Crowley Marine of Jacksonville, Fla., has been contracted to transport the equipment via ocean going barge and tug. The barge left the KSC turn basin for Africa March 4.

The total number of transatlantic abort sites comes to four with the addition of these new sites and the continued use of sites at Zaragoza Air Base, Spain and Moron Air Base, Spain.

Three sites (Ben Guerir, Banjul and Moron) will each be manned with 30 - 40 NASA and contractor personnel during the launch of STS-26.

Bob Fleming, KSC's Contingency Landing Site program manager, said, "These sites must be operational and all requirements met in time for the next mission. We hope we never have to use them. But, if necessary, they will be ready."

Negotiated agreements with each country allows NASA the use of the existing facilities.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

March 15, 1988

George Diller
Kennedy Space Center
Telephone: 305/867-2468

ASTRONAUT 0-G TRAINER SIMULATES ORBITER FOR TRACKING EXERCISE

Ground support assets crucial to the in-orbit operation of the Space Shuttle Discovery were recently tested in a drill which exercised flight controllers and provided a readiness assessment for air-to-ground instrumentation.

The NASA Spaceflight Tracking and Data Network, managed by the Goddard Spaceflight Center in Greenbelt Maryland, tested three of its global tracking stations, including the MILA station located at the Kennedy Space Center.

Part of NASA's aircraft fleet but an infrequent visitor to KSC is the zero-g trainer, a modified Boeing 707 jet, used by the astronauts to simulate weightlessness for brief periods.

Called by many only by its tail number, "NASA 930" staged from KSC's Shuttle Landing Facility to embark upon a unique mission to assist in fulfilling pre-launch confidence. Its flight was intended to establish that critical mission air-to-ground support could be assured for Discovery's August launch.

During the aircraft's brief presence at KSC last month, it was not astronauts which could be seen going aboard, but nondescript metal boxes of electronic equipment. However, this equipment was well short of ordinary, and was in fact an array of sophisticated telemetry simulators intended to mimic the appearance of the Space Shuttle orbiter. Indeed, these devices had recently completed duty imitating the radio signature of the Hubble Space Telescope while installed in the payload changeout room of Pad 39-B.

more

KSC FORM 2-160A (3/80) (O/P 6/87)

With the help of Joe Algranti, chief of aircraft operations at the Johnson Space Center in Houston, the zero-g trainer was made available for a series of tests. Unlike the smaller Shuttle Training Aircraft used last year in previous simulations, the physical size of a 707 could provide additional space and onboard power. This was necessary to accommodate all of the equipment which can generate a replica of Discovery's air to ground radio signals for ground controllers.

After loading aboard the instrumentation at KSC, the aircraft departed for Bermuda. There, piloted by Algranti, the plane flew a series of patterns around the island which allowed the Bermuda station to perform tracking, data, and telemetry testing. This also provided a training exercise for teams at Goddard, and for the flight controllers at the Johnson Space Center in Houston who were also able to particpate remotely in the simulations.

To take full advantage of the availability of the aircraft, it next was flown to Dakar for exercises, before returning to the Kennedy Space Center.

The MILA tracking station at KSC, and MILA's remote Ponce DeLeon Inlet station located on the coast 30 miles north of Cape Canaveral, then participated in practices.

During all simulations, the telemetry signals acquired from the aircraft are relayed by satellite to Goddard for distribution. For this exercise the signals are again forwarded by satellite to the Johnson Space Center. There, Houston flight controllers are able to read information, send commands back to the aircraft, and recognize the associated telemetry responses from the orbiter simulation equipment onboard the 707.

"This provided us with an ideal opportunity to checkout our new equipment which we've recently installed here at MILA and also at Ponce DeLeon Inlet," said NASA station director George Jenkins.

Since the tests have proven exceedingly beneficial, it is likely that these tracking simulations will be repeated for MILA as well as for other stations associated with the NASA Spaceflight Tracking and Data Network.

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NASA News

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For Release:
May 10, 1988

George H. Diller
KSC News Center
Telephone: 407/867-2468

Release No. 24-88

NOTE TO EDITORS: TDRS-C TO ARRIVE AT KENNEDY SPACE CENTER MAY 16

KENNEDY SPACE CENTER, Fla.-- TDRS-C, the Tracking and Data Relay Satellite which will be the primary payload to be launched aboard the Space Shuttle Discovery on STS-26 in August, will soon begin final pre-launch processing at KSC.

Transportation from the TRW plant in California will be provided by military aircraft. Arrival on Cape Canaveral Air Force Station is anticipated at approximately 7:30 a.m., Monday, May 16.

A photo opportunity will be available for press members wishing to cover the arrival of the aircraft and the subsequent offloading of the TDRS-C shipping container.

For those wishing to be present, a bus will leave the KSC News Center for the Skid Strip on Cape Canaveral Air Force Station at 7 a.m. Media representatives needing accreditation should contact the KSC News Center no later than Friday, May 13 at 407/867-2468.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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For Release:

Mitch Varnes
Area Code 407/867-2363

Immediate

KSC Release No. 23-88

ANDY WARHOL WORKS TO GO ON PERMANENT DISPLAY AT SPACEPORT USA

KENNEDY SPACE CENTER, Fla. - "Moonwalk," a two-picture set of silkscreen art work created by reknowned pop artist Andy Warhol, will go on permanent display at Spaceport USA, the Kennedy Space Center's visitor complex, beginning May 16.

The two prints - both of which depict Apollo 11 astronaut Edwin "Buzz" Aldrin standing on the surface of the moon - are the first of a series of works in which Warhol was involved at the time of his death in February 1987.

The distinctive prints - from a limited edition of 160 copies - are identical in subject yet distinctive in color. One is painted a canary yellow while the other is a bold fuschia.

"NASA is very pleased to gain the Warhol works," said Arnold I. Richman, KSC's chief of visitors services. "These fine pieces of art add even more prestige to NASA's acclaimed art collection."

The Warhol works will be displayed in the center core of Spaceport USA's Galaxy Center, adjacent to more than 250 other pieces of art - the world's largest collection of space art - which are located inside Spaceport USA's art gallery.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. It is operated by TW Recreational Services Inc. under a concession agreement with NASA.

A nominal fee is charged for bus tours and for the IMAX film, "The Dream Is Alive," but actual spaceflight hardware, audio-visual programs, NASA and contractor-sponsored exhibits, and other space memorabilia are on display at no charge. Spaceport USA is open to the public every day of the year with the exception of Christmas.

# # # # #

May 11, 1988

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Sarah Keegan
Headquarters, Washington, D.C.
(Phone: 202/453-2352)

June 9, 1988

Ed Medal
Marshall Space Flight Center, Huntsville, Ala.
(Phone: 205/544-0034)

NOTE TO EDITORS: SPACE SHUTTLE MOTOR TO BE TEST FIRED

The fourth full-duration test firing of NASA's redesigned Space Shuttle solid rocket motor is scheduled for Tuesday, June 14, at Morton Thiokol's Space Operations facility in Utah.

In addition to a news release and fact sheets on this test, designated QM-7, other services will be available to assist the news media including a pre-test briefing (11 a.m. to noon MDT), an opportunity to view the motor test firing (1 p.m. MDT) and a post-test briefing (2 to 3 p.m. MDT).

Live video coverage of the test firing, provided by Morton Thiokol, will be carried on NASA Select television (RCA Satcom F2R, transponder 13, located at 72 degrees west longitude), beginning about 30 minutes prior to the test firing. Media may receive television coverage directly from the satellite or view it in NASA newsrooms at NASA Headquarters in Washington, Marshall Space Flight Center, Kennedy Space Center or Johnson Space Center.

There will be no television coverage of the briefings. However, an audio feed of the briefings -- along with two-way question and answer capability -- will be available in the NASA newsrooms mentioned above. A direct telephone audio feed of the briefings and the test firing will be available by calling Marshall Center Communications at 205/544-5300.

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A joint NASA/Morton Thiokol newscenter will be in operation from 8 a.m. to 4:30 p.m. (MDT) on the day prior to the test, June 13, and again on test day. The pre- and post-test briefings will originate from this newscenter. The newscenter is located at the Morton Thiokol test observation area, about 22 miles west of Brigham City, along Utah Highway 83. The telephone number for the news desk is 801/863-6880.

For those media representatives planning to attend the test-day activities at Morton Thiokol, no advance accreditation is required. However, a courtesy call to the Morton Thiokol Public Relations Office, 801/863-3955 or 3956, is requested to confirm the number of reporters and crew members attending. Current media credentials will be required to gain access to the newscenter and test observation site.

Due to restricted viewing angles of the new test stand from the newscenter area, a special viewing site will be in operation for the QM-7 test. Media will be bused to the viewing site about 45 minutes prior to the test.

For additional information concerning QM-7 media activities, contact Rocky Raab at Morton Thiokol, 801/863-2747, or Ed Medal at the NASA Marshall Space Flight Center in Huntsville, Ala., 205/544-0034.

- end -

T-97 LARGE MOTOR STATIC TEST FACILITY FACT SHEET

The T-97 Large Motor Static Test Facility was constructed to support the Shuttle solid rocket motor redesign program.

Construction of the facility was authorized by NASA in October 1986, with site preparation and groundbreaking on November 5. The facility was completed in October 1987.

NASA provided Space Shuttle special tooling and related items, a total of approximately $15 million. Morton Thiokol provided all structural portions of the facility at a cost of about $7 million.

The facility contains a total of 7,000 cubic yards of concrete, with 308 tons of reinforcing steel and an additional 230 tons of such things as steel plates and rails. Site construction required movement of 166,000 cubic yards of earth, and the finished pad site is covered with approximately 3,300 tons of asphalt. Overall, the site measures about 550 by 350 feet.

A 155 x 30 x 30-foot, self-propelled, moveable conditioning building has the capacity of heating an entire test motor to as much as 110 degrees or cooling it to as low as 20 degrees, independent of outside air temperature.

The test stand itself can withstand a thrust load of 4 million pounds, and can impart side reaction loads of 400,000 pounds during test firing to simulate aspects of flight dynamics.

To measure motor performance, a total of 1,216 channels of instrumentation is included in the site. Two instrumentation buildings contain computer-controlled instruments and recording equipment which monitor test motors during firing. In addition, motor functions are recorded with a complete system of remotely operated television, still, and both normal- and high-speed motion picture cameras.

An overhead crane of 200 tons capacity and an auxiliary hoist of 15 tons capacity, plus adjustable positioning trucks, allow accurate placement and mating of rocket motor segments during motor assembly and disassembly.

- end -

QUALIFICATION MOTOR-7 FACT SHEET

QM-7 is a full-size Space Shuttle solid rocket motor approximately 126 feet in length and 12 feet in diameter. The motor weighs 1.2 million pounds, including 1.1 million pounds of propellant. The QM-7 motor will be conditioned to a mean bulk propellant temperature of 90 degrees F.

The three field joints, which connect the four motor segments, are of the flight configuration, capture feature tang and clevis design with three Viton o-rings. The mating insulation surfaces at each joint are bonded with an adhesive and include a J-shaped deflection relief slot which reduces stresses and increases sealing action of the bonded surfaces under motor pressure. Joint heaters, mounted around the motor case at each field joint, are thermostatically controlled to maintain joint temperature at a minimum of 75 degrees F.

The motor case-to-nozzle joint on QM-7 is the flight configuration which incorporates 100 radial bolts, adhesively bonded insulation surfaces, a shaped relief slot and an added Viton "wiper" o-ring designed to keep the adhesive away from the primary o-ring and on the insulation surfaces during assembly. None of the joints in the QM-7 motor contain intentional manufacturing or assembly defects.

The QM-7 motor is equipped with a flight design external tank attach ring. Three hydraulically actuated struts are attached to the ring which simulate the motor's connection to an external tank. During the motor firing, a programmed series of dynamic loads will be applied through the struts to simulate ignition, liftoff and flight loads. Response of the QM-7 motor to these loads will be monitored by instrumentation.

The QM-7 motor nozzle contains the flight configuration outer boot ring successfully tested on the DM-8 motor firing in August and on QM-6 in April. Additionally, the QM-7 motor nozzle is fitted with an explosive exit cone severance system, which will be activated at about T+15 minutes to simulate severance of the nozzle aft exit cone as it occurs during a mission.

About 600 instruments are fitted to the QM-7 motor to measure acceleration, pressure, deflection, thrust, strain, temperature, electrical properties and other conditions.

- end -

NASA News

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Jim Cast
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Jean Drummond Clough
Langley Research Center, Hampton, Va.
(Phone: 804/865-3006)

RELEASE: 88-75

NASA SCOUT LAUNCH SET FOR JUNE 15

The 111th flight of a Scout rocket, smallest of NASA's expendable launch vehicles, is to boost an advanced Navy navigation satellite, NOVA-II, into polar orbit on June 15. The 16-minute launch window opens at 11:51 p.m., PDT, at the Western Space and Missile Center (WSMC), Calif.

A total of four Scouts have been manifested for flight in 1988. The first two were successfully launched on March 25 and April 25 from the San Marco Range in the Indian Ocean and from the WSMC, respectively. The fourth launch, again for the Navy, is presently targeted for a California lift-off in August.

Scout rockets -- 73-feet long, four-stage solid propellant space workhorses -- are built by the Missiles Division of LTV Missiles and Electronics Group, Dallas, Texas.

The Scout program is managed by NASA's Langley Research Center, Hampton, Va.

- end -

NASA News

National Aeronautics and
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Kennedy Space Center, Florida 32899
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For Release:

James Ball
Headquarters, Washington, D.C.
(Phone: 202/453-8604)

June 9, 1988

Pat Phillips
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

RELEASE: 88-76

NASA AND AMERICAN CANCER SOCIETY ANNOUNCE JOINT RESEARCH PROJECT

NASA and the American Cancer Society announced today a joint research project which they hope will boost survival odds for victims of the disease.

Officials at NASA's Kennedy Space Center in Florida and of the Florida Division of the American Cancer Society said the project involves a search for ways to improve laboratory identification and monitoring of cancer cells. The project name is "Evolution in Flow Cytometry: Application, Design and Testing of a New Advanced System."

In the cytometry process, specimen cells are marked with a fluorescent dye, suspended in a liquid solution, and identified or measured with the use of sophisticated lasers and multiple photometers. Researchers involved in the NASA/ACS research hope to develop an advanced flow cytometry instrument that could support biomedical experiments aboard the Space Station while advancing medical knowledge in cancer detection and treatment.

Among the projected cancer-fighting benefits are:

* improved monitoring of the effectiveness of a cancer patient's treatment by evaluating the specific change in cancer cells resulting from chemotherapy or bone marrow transplants, and

* selection of the most effective therapy for each patient by laboratory testing of diseased cells against various modes of treatment.

- more -

NASA will provide technical leadership for the ACS research in conjunction with a "Space Station In-Flight Cytometry Project" at Johnson Space Center, Houston. Dr. Gerald Taylor, JSC Science Manager for the Space Station Biology Project, developed the NASA cytometry project and is a co-investigator for the joint project. Both the NASA life sciences and technology utilization programs have planned a combined budget of $230,000 for the JSC cytometry project in FY 1989.

Overall management of the NASA/KSC collaboration process will be provided by the KSC Technology Utilization Office. Robert L. Butterfield, manager, technology integration, will serve as project liaison with the ACS.

Project co-investigators Dr. David S. Robinson and Dr. Awtar S. Krishan will lead research efforts at the University of Miami in Florida. Other researchers include Dr. Scott Cram and Dr. Tudor Buican at the Los Alamos Flow Cytometry National Laboratory in Los Alamos, N.M., and Dr. Mack Fulwyler at the University of California, San Francisco.

The ACS, Florida Division, is expected to provide approximately $88,000 in support funding for Phase I and Phase II of the project through 1989. Project review will be coordinated through a scientific committee headed by Dr. Woody York of Tampa, Fla. The committee selected this project from 19 others submitted for NASA/ACS collaboration.

The joint project is one of many NASA-private sector efforts supported by NASA's technology utilization program. Such collaborations are intended to transfer knowledge acquired through the space program into diverse fields and thereby, stimulate "spinoff" applications leading to a wide range of benefits for everyday life.

Previous spinoffs from NASA research and technology have led to health care applications such as:

* a programmable insulin pump for diabetics,

* a vision screening program for children,

* new ways to help the hearing-impaired learn to speak,

* progress in the fight against heart disease through use of an image processing system used to diagnose coronary artery problems, and

* a device that helps prevent hair loss in cancer patients undergoing chemotherapy.

- end -

This release and other NASA information is available electronically through DIALCOM, INC. For access to NASA NEWS through this system, contact the NASA NEWS representative, DIALCOM, INC. at 202/488-0550.

NOTE TO EDITORS: For more information about the American Cancer Society scientific committee, involvement in cytometry studies, and ACS efforts in research and education, contact Jane Birkhold, Public Information Director, American Cancer Society, 1001 S. MacDill Avenue, Tampa, Fla., 33629, phone (813) 253-0541.

B/W or color photographs are available from the NASA KSC Newsroom.

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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Pat Phillips
(407) 867-2468

For Release:

June 27, 1988

KSC Release No. 40-88

AUL INSTRUMENTS, INC. WINS KSC COMMUNICATIONS CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA'S John F. Kennedy Space Center has selected Aul Instruments, Inc., of Garden City, N.Y. for negotiations leading to the award of a contract for a digital operational intercom system (OIS-D).

The proposed cost for the fixed-price contract is approximately $10.1 million, with work to be performed over a period of three years. The OIS-D is a digital voice communications system used in Space Shuttle and payload processing as well as launch activities at KSC.

Aul Instruments, Inc., will produce, test, deliver, and provide support services for approximately 5,000 pieces of OIS-D hardware. This system will replace older hardware, thereby upgrading internal communication capabilities at several KSC sites, including the Launch Control Center (LCC).

Proposals also were submitted by Electrospace Systems, Inc., Richardson, Tex.; Fairchild Weston Systems, Sarasota, Fla.; Ford Aerospace Corp., Houston, Tex.; Martin Marietta Information and Communications Systems, Littleton, Colo.; Metric Systems, Ft. Walton Beach, Fla.; Menemonics Manufacturing, Inc., Melbourne, Fla.; DBA Systems, Inc., Melbourne, Fla.; Datacom, Inc., Ft. Walton Beach, Fla.; Symetrics Industries, Inc. Melbourne, Fla.; Grim Corporation, Medford, N.J.; Mil-Com Electronics, San Antonio, Texas; and Sprengnether Instruments, Inc., St. Louis, Mo.

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NASA News

National Aeronautics and
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For Release:

Jim Ball
Headquarters, Washington, D.C.
(Phone: 202/453-8604)

July 19, 1988

NOTE TO EDITORS:

COMMERCIAL PROGRAMS ADVISORY COMMITTEE COMMENCES ACTIVITIES

Earlier this year, NASA announced the establishment of a high-level advisory committee to advise the agency on its program to encourage the commercial development of space.

The Commercial Programs Advisory Committee held its initial meeting last week in Washington D.C. and is expected to convene quarterly.

"Coming from the private sector, I have long felt that industry should have a greater voice in influencing the establishment of commercial policies," said Jim Rose, NASA assistant administrator for commercial programs, in addressing the group. "I feel confident that with your help and guidance, we can assure that NASA is proceeding in the most appropriate direction in this area."

Rose initiated the establishment of the committee shortly after his appointment to the Office of Commercial Programs last year.

The enclosed Fact Sheet describes the function of the advisory group and a current list of its membership, comprised of senior corporate and university executives representing a diverse cross section of U.S. industry and business.

-end-

NASA Facts

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

Jim Ball
Headquarters, Washington, D.C.
(Phone: 202/453-8604)

July 19, 1988

COMMERCIAL PROGRAMS ADVISORY COMMITTEE

To ensure diverse, high-level input from U.S. industry and business, NASA has established a committee of senior corporate and university executives to advise the agency in its activities to encourage the commercial development of space.

Responsible for implementing national space policy objectives to stimulate a strong U.S. commercial presence in space, NASA began forming the advisory panel in late 1987 as a new initiative.

Formed as a subcommittee of the NASA Advisory Council, the new group will assist NASA by reviewing policies and programs, and recommending strategies to implement the national space policy goals to promote greater investment and participation by the U.S. private sector in America's civil space program.

Specifically, the advisory panel will be concerned with the overall NASA program supporting the commercial development of space. The committee will address policies and issues related to space industrial research and technology development; use of the microgravity environment for manufacturing; government and private infrastructure supporting commercial space activity; business financing and insurance requirements; and the respective roles and responsibilities of government and the private sector.

The group also will review current and proposed programs, offering advice on how to optimize industry participation and effectively stimulate and support commercial space endeavors. This will include recommendations on research priorities, NASA-industry relationships and cooperative agreements and industry access to research facilities and space transportation.

The Commercial Programs Advisory Committee, which held its first meeting in July and will convene quarterly, is chaired by Edward Donley, chairman, executive committee, Air Products and Chemicals, Inc. Other members are:

Mr. Robert Anderson
Chairman, Executive Committee
Rockwell International Corp.

Mr. Rand V. Araskog
Chairman and Chief Executive Officer
ITT Corp.

Mr. James K. Baker
Chairman and Chief Executive Officer
Arvin Industries, Inc.

Mr. Paul Bancroft, III
Retired President and CEO
Bessemer Securities Corp.

Dr. Thomas A. Bartlett
Chancellor
The University of Alabama System

Mr. Robert K. Campbell
Chairman, President and CEO
Pennsylvania Power & Light Co.

Mr. John L. Clendenin
Chairman and Chief Executive Officer
BellSouth Corp.

Mr. Peter M. Flanigan
Managing Director
Dillon, Read and Company, Inc.

Mr. Larry D. Horner
Chairman and CEO
Peat Marwick Main & Co.

Mr. Charles E. Hugel
President and CEO
Combustion Engineering, Inc.

Dr. H. Bryce Jordon
President
Pennsylvania State University

Mr. Lewis W. Lehr
Retired Chairman and CEO, 3M

Mr. John C. Rennie
President
Pacer Systems, Inc.

Dr. Roland Schmitt
President
Rensselaer Polytechnic Institute

Mr. David W. Thompson
President and CEO
Orbital Sciences Corp.

Dr. Joe B. Wyatt
Chancellor
Vanderbilt University

Mr. Fred L. Hartley
Chairman and Chief Executive Officer
Unocal Corp.

-end-

NASA News

National Aeronautics and
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For Release:

Charles Redmond
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(Phone: 202/453-1549)

August 18, 1988

Jack Renierie
National Science Foundation, Washington, D.C.
(Phone: 202/357-9498)

RELEASE: 88-115

NASA AND NSF ESTABLISH NEW ASTRONOMY NETWORK

NASA and the National Science Foundation (NSF) have teamed together to make it easier and cheaper for U.S. astronomers to access and use a French astronomical database called the Set of Identifications, Measurements and Bibliography for Astronomical Data (SIMBAD).

This database, maintained in Strasbourg, France, makes it possible for an astronomer to look up an astronomical object, such as a star or the recent supernova, by its astronomical designation. The astronomer can get nearly all known information and a listing of papers about the object since 1950.

This astronomical database hookup is an example of interagency cooperation in U.S. research computer networking and is part of the ongoing program of activities fostered by the Federal Research Internet Coordinating Committee. This committee is comprised of federal agencies that engage in research activities and includes NASA, NSF, the Defense Advanced Research Projects Agency, the Department of Energy and the Department of Health and Human Services.

U.S. astronomers have been hampered in their access to this database because of two separate but related circumstances. Since the database is run on a French computer system, the standards of interconnection are different from that of American computer systems and not all university or institution astronomers were able to connect successfully.

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The second aspect was the cost of a computer call to the Centre de Donnees de Strasbourg (CDS), France, which was costing nearly $100 per connect. The cost alone was beyond the reach of all but a few astronomers.

Under the cooperative effort, NSF has paid for about three-fourths of the costs of a permanent network hookup, and NASA is underwriting the charges for the use of the database itself as well as picking up the remainder of the circuit costs. The Smithsonian Astrophysical Observatory (SAO), Cambridge, Mass., will act as NASA's agent with CDS.

SAO will register U.S. astronomers, provide them with user manuals and passwords and will reimburse CDS in consolidated payments for the U.S. astronomer sessions on SIMBAD.

The new link to SIMBAD was demonstrated for the first time at the Library and Information Systems Association's meeting in Washington on July 28th and subsequently, at the International Astronomical Union General Assembly in Baltimore, Md., Aug. 2.

NASA and NSF acquired a satellite link between Princeton University and the Institut National de Recherche en Informatique et en Automatique (INRIA) at its Nice campus. INRIA has developed a device that translates between the computer communications code used by U.S. research computers and the code used widely in Europe. INRIA also serves to connect the satellite circuit to the Paris computer which runs the astronomical database.

The American telecommunications company MCI and the French national Public Telephone and Telecommunications company are now working to install permanently-configured circuits between SAO and the CDS. Also, INRIA will streamline the computer instructions between the American and French computer systems to remove several difficulties which arose in the demonstration test. NASA and NSF expect to be back on line in September with the circuit to SIMBAD.

NSF's interest in the circuit and gateway rests largely in a project with the University of Wisconsin for the purpose of developing protocols to translate between U.S. and European versions of the forthcoming International Standards Organization "Open Systems Interconnect" computer communications protocols. NASA's interest is in providing computer communications services, including databases, to assist its research community in their science activities.

-end-

NASA News

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For Release:

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Headquarters, Washington, D.C.
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Diane Stanley
Ames Research Center, Mountain View, Calif.
(Phone: 415/694-5091)

NOTE TO EDITORS:
SYMPOSIUM TO DETAIL SEARCH FOR EVOLUTION OF LIFE IN SOLAR SYSTEM

A symposium sponsored by NASA's Ames Research Center, (ARC) Mountain View, Calif., on Exobiology in Solar System Exploration will be held Aug. 24-26, 1988, at the Sunnyvale Hilton Inn, Sunnyvale, Calif.

The symposium will cover all significant research related to the emergence of life in the solar system. Exobiology's role in current and near term NASA missions will be reviewed, featuring leading world authorities on solar system studies, addressing the most fundamental question - how did life begin and evolve in the solar system?

NASA plans to investigate this question with missions such as the Project Galileo to Jupiter, the Mars Observer Mission, a Mars Rover/Sample Return Mission, the proposed Comet Rendezvous Asteroid Flyby Mission and Titan-Cassini Mission, a NASA/ESA cooperative venture to Saturn's satellite. Experiments for these missions will be considered and directions for future exobiological research will be suggested.

The planets, Jupiter and Saturn, their satellites, Europa and Titan, Mars and comets are of particular interest to exobiologists. Comprehensive reviews of these solar system bodies will be presented.

Media are invited to attend all symposium sessions.

A press briefing will be held at Ames at 11:00 a.m. (PDT) Friday, Aug. 26. Various technical papers, still photos and videotape will be available at the Ames location only.

The press briefing will be carried on NASA Select television, (Satcom F2R, transponder 13, 72 degress west longitude.)

-end-

NASA News

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For Release:

James Cast
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

August 19, 1988

Jean Drummond Clough
Langley Research Center, Hampton, Va.
(Phone: 804/865-3006)

RELEASE: 88-116

112TH SCOUT ROCKET LAUNCH SET

NASA will launch two U.S. Navy navigational satellites aboard a Scout rocket August 24 from Vandenberg Air Force Base, Calif. The 24-minute launch window for the SOOS-4 (Stacked Oscars On Scout) mission opens at 11:59 p.m. PDT. The two Oscar satellites, each weighing 141 pounds, will be placed into a 600-nautical-mile circular polar orbit. The Oscars are part of the Navy's all-weather, global navigation system.

The Navy Navigation Satellite System has served the military and more than 60,000 civilian users for more than 2 decades by providing position information within one-tenth of a nautical mile anywhere in the world. Over the years, the spacecraft have been adapted for diverse uses such as commercial shipping, charting of offshore oil and mineral deposits and land survey programs.

The SOOS-4 mission will mark the fourth and final Scout launch for 1988. Successful missions this year were: Scout San Marco D/L, launched from the San Marco range platform in the Indian Ocean on March 25; SOOS-3, launched April 25 from Vandenberg; and the Navy NOVA-II, launched from Vandenberg on June 15.

The Scout program is managed by NASA's Langley Research Center, Hampton, Va. The four-stage, solid-propellant rockets are built by the Missiles Division of LTV Missiles and Electronics Group, Dallas, Texas.

- end -

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:
Oct. 8, 1988

George H. Diller
Tel. 407/867-2468

KSC Release No. 82-88

NOTICE TO EDITORS/NEWS DIRECTORS:

MAGELLAN BRIEFING AND PHOTO OPPORTUNITY AVAILABLE ON OCT. 12

KENNEDY SPACE CENTER, Fla.-- Magellan, the planetary spacecraft to be deployed by the Orbiter Atlantis toward the planet Venus next April, arrived at KSC last weekend. Since that time the various spacecraft elements have been unpacked to prepare them for their integraton and checkout.

There will be a presentation on Magellan on Wednesday, Oct. 12, which will include a briefing for the press on plans for the spacecraft's final assembly, testing, and launch preparation at KSC. A brief overview of Magellan's planetary objective will also be presented. Participating will be Jo Ann Morgan, director of Payloads Projects Management for NASA-KSC, and Charles Brown, Magellan program manager for Martin Marietta, the manufacturer of the spacebrobe.

The press briefing will begin at 10:30 a.m. in the KSC News Center Auditorium. At its conclusion, media representatives will be transported to the spacecraft checkout facility to view the various spacecraft elements being prepared for integration.

Because of Magellan's susceptibility to certain contaminants, those attending the showing are asked to refrain from using hairspray or makeup on the day of the event. Also, long pants and low-heeled, closed-toed shoes will be required to gain access to the clean room area. White room attire will be provided.

No flame producing devices can be allowed in any part of the spacecraft checkout facility. Photographers please note that available light only may be used and all equipment must be self-contained using internal power.

# # # # #

KSC FORM 2-160A (3/80) (O/P 6/87)

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

November 30, 1988

Jerry Berg
Marshall Space Flight Center
Huntsville, Ala.
(Phone: 205/544-0034)

RELEASE NO: 88-166

REVERSE FLOW IN SHUTTLE PLUME IS OLD HAT TO GROUP AT MARSHALL CENTER

As tracking cameras followed the Space Shuttle Discovery downrange during its Sept. 29 ascent into orbit, many spectators experienced a wave of apprehension. Beginning approximately a minute and a half into the flight, they noticed that the plume of flames and exhaust behind the Shuttle seemed to have spawned an additional flame slightly above the base of one solid rocket booster.

Lee Foster, an aerospace engineer in one of the Marshall Space Flight Center's specialized laboratories in Huntsville, Ala., was also watching Discovery's flight on a TV monitor in the Huntsville Operations Support Center. He noticed the small outgrowth from the main plume, too. Instead of being alarmed, though, Foster watched with high interest. He had expected to see the flames. Now, based on previous experience, he expected their appearance would bring a flood of questions.

To Foster and his coworkers in the Aerophysics Division of the Structures and Dynamics Laboratory, the effect captured by tracking cameras is a familiar one. In fact, their studies of it long ago resulted in giving the phenomenon a name ("plume recirculation") and establishing it as the subject of a unique engineering discipline.

"The effect is visible -- if weather conditions and camera angles permit -- from around 92 seconds into flight until just before jettison of the boosters," Foster said. "Even if it's not visible, we've used instrumentation to determine that the effect does indeed occur on every flight."

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Plume recirculation, Foster explained, is due to the relative location of the booster and main engine nozzles, the expansion of the rocket jets at high altitudes, and the airflow around the Shuttle vehicle and its plumes.

"As the Shuttle ascends, atmospheric pressure becomes lower," Foster said. "As a result, the exhaust plumes grow wider as the Shuttle gains altitude. Then, as they get wider, they begin to intersect with each other and this intersection region gets closer and closer to the base region of the vehicle.

"Usually around 92 seconds," Foster said, "the pressure in this intersection becomes higher than the pressure in the base region and some of the exhaust plume gases from this intersection are reversed, or recirculated, into the base region. The high-temperature gases heat the aft dome of the external tank and the aft sections of the boosters."

By itself, that effect wouldn't result in anything visible. However, another ingredient--oxygen--is added to the picture at this point.

"Around the outer boundary of the recirculation region, oxygen from the airflow around the Shuttle mixes with some of the recirculated exhaust gases, allowing residual fuel in the plume to burn. That's what results in the flames seen in the flight videotapes," said Foster.

But, is it a safety issue?

No, Foster declared, because the heating effect from plume recirculation was calculated even before the first Shuttle flight and appropriate thermal protection has always been used to protect the flight hardware.

"We've been building our data base on this subject ever since the mid-1950s. In fact, plume recirculation occurred from the very beginning, even with the German V-2 rockets.

"During the first six flights of the Shuttle, we put a variety of gauges on the external tank and boosters to measure the heating from plume recirculation," said Foster. "These measurements showed that the heating was basically the same on each flight and that the vehicle is well protected from the heating."

So, when Atlantis streaks through the upper reaches of the atmosphere in the next Shuttle launch, high-powered tracking cameras will again follow it into the distance. And, at least one viewer will be keeping an eye out for a familiar phenomenon, which may well present yet another opportunity to expand his unique collection of data.

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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

George H. Diller
407/867-2468

Jan. 6, 1989

KSC Release No. 3-89

TDRS-D PROGRAM BRIEFING AND SPACECRAFT SHOWING SCHEDULED AT KSC

KENNEDY SPACE CENTER, Fla. -- The primary satellite payload to be launched on the STS-29 mission in February will be the topic of an upcoming press briefing and spacecraft showing to be held at KSC in association with mission briefings in Houston beginning Jan. 11.

TDRS-D, the Tracking and Data Relay Satellite to be deployed from Discovery, is to relay data from low earth-orbiting spacecraft and air-to-ground voice communications and television from Space Shuttle orbiters when it becomes operational.

The briefing will begin at 10:00 a.m. EST on Wednesday, Jan. 11 at the KSC News Center auditorium and will be carried on NASA Select on Satcom F2R, Transponder 13. Audio will also be available on the V-2 circuit which may be dialed direct at 407/867-1220....1240....1260.

Participating in the briefing will be John T. Conway, director of Payload Management and Operations, Kennedy Space Center; Charles M. (Chuck) Hunter, TDRS deputy project manager, Goddard Space Flight Center; and Gary Morse, network director, Goddard Space Flight Center.

On Friday, Jan. 13, news media representives will have an opportunity to view and photograph IUS/TDRS immediately after its installation into the payload canister for the move to the launch pad. Transportation and escort from the KSC News Center to the Vertical Processing Facility will be provided, departing at 7:30 p.m.

more

KSC FORM 2-160A (REV. 6/88)

Because of the spacecraft's susceptibility to certain contaminants, those attending the showing are asked to refrain from using hairspray or makeup on the day of the event. Also, long pants and close-toed shoes will be required to gain access to the clean room area. White room attire will be provided.

Available light only may be used in the spacecraft clean room. All camera equipment must be self contained and have internal power. No external power is available. No flame-producing devices are allowed in any part of the VPF.

Media representatives without permanent badging who wish to attend either of these events should contact the KSC News Center at 407/867-2468 to make arrangements for accreditation.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
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AC 407 867-2468

Dick Young
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For Release:
Jan. 23, 1989

KSC Release No. 7-89

PLAYALINDA BEACH TO BE CLOSED BEGINNING THURSDAY, JAN. 26

KENNEDY SPACE CENTER, Fla -- Playalinda Beach and other portions of the northern part of the Kennedy Space Center will be closed to visitors effective Thursday, Jan. 26.

Beach closure would normally have been effective Monday, Jan. 30, when Discovery and the other elements of the STS-29 space vehicles are scheduled for rollout to Complex 39's Pad B in preparation for launch in late February.

The early closure may be attributed to threats of penetration onto NASA property connected with a demonstration to be held at KSC by the Florida Coalition for Peace and Justice on Jan. 28.

Gates at the Florida 406 Causeway near Titusville and on Florida Route 3 south of the Haulover Canal will prevent public access to the Merritt Island National Wildlife Refuge from Thursday, Jan. 26 until sunrise on Jan. 29. The Playalinda Beach closure will remain in effect until after launch.

The beach closing is required to protect security areas around the pad, and to provide protection for pad operations involving the orbiter Discovery and its primary payload -- the Tracking and Data Relay Satellite. The beach will reopen at normal hours the day after launch, currently targeted for Feb. 23.

Other Canaveral National Seashore beaches such as Apollo Beach will remain open. They may be reached through the north beach entrance south of New Smyrna Beach.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Feb. 27, 1989

George H. Diller
Kennedy Space Center
Tel. 407/867-2468

Release No. 17-89

NOTE TO EDITORS/NEWS DIRECTORS:

OPEN HOUSE TO BE HELD AT PONCE DE LEON INLET TRACKING STATION

News media representatives are invited to attend an open house at the NASA Ponce De Leon Inlet tracking station (PDL) on Monday, March 6, from 11 a.m. to 2 p.m.

This tracking station is the primary source of air-to-ground voice, data and telemetry for the Space Shuttle during the second minute of launch, and provides additional support for the first 8 1/2 minutes of the flight.

The open house is being sponsored by NASA's Goddard Space Flight Center and the Bendix Field Engineering Corporation which operates the tracking station. Tours of the facility will be provided, and facility personnel will be on hand for interviews and to answer questions.

A presentation will be made on the operation of NASA's Space Flight Tracking and Data Network of which the Ponce De Leon Inlet Station is a part. A brief overview on the Deep Space Network and the Tracking and Data Relay Satellite System will be included.

A light lunch will be served.

Media representatives wishing to attend should be at the Ponce De Leon Inlet tracking station by 11 a.m. The facility is located in New Smyrna Beach adjacent to the U.S. Coast Guard Station and Smyrna Dunes Park. No transportation from KSC will be provided.

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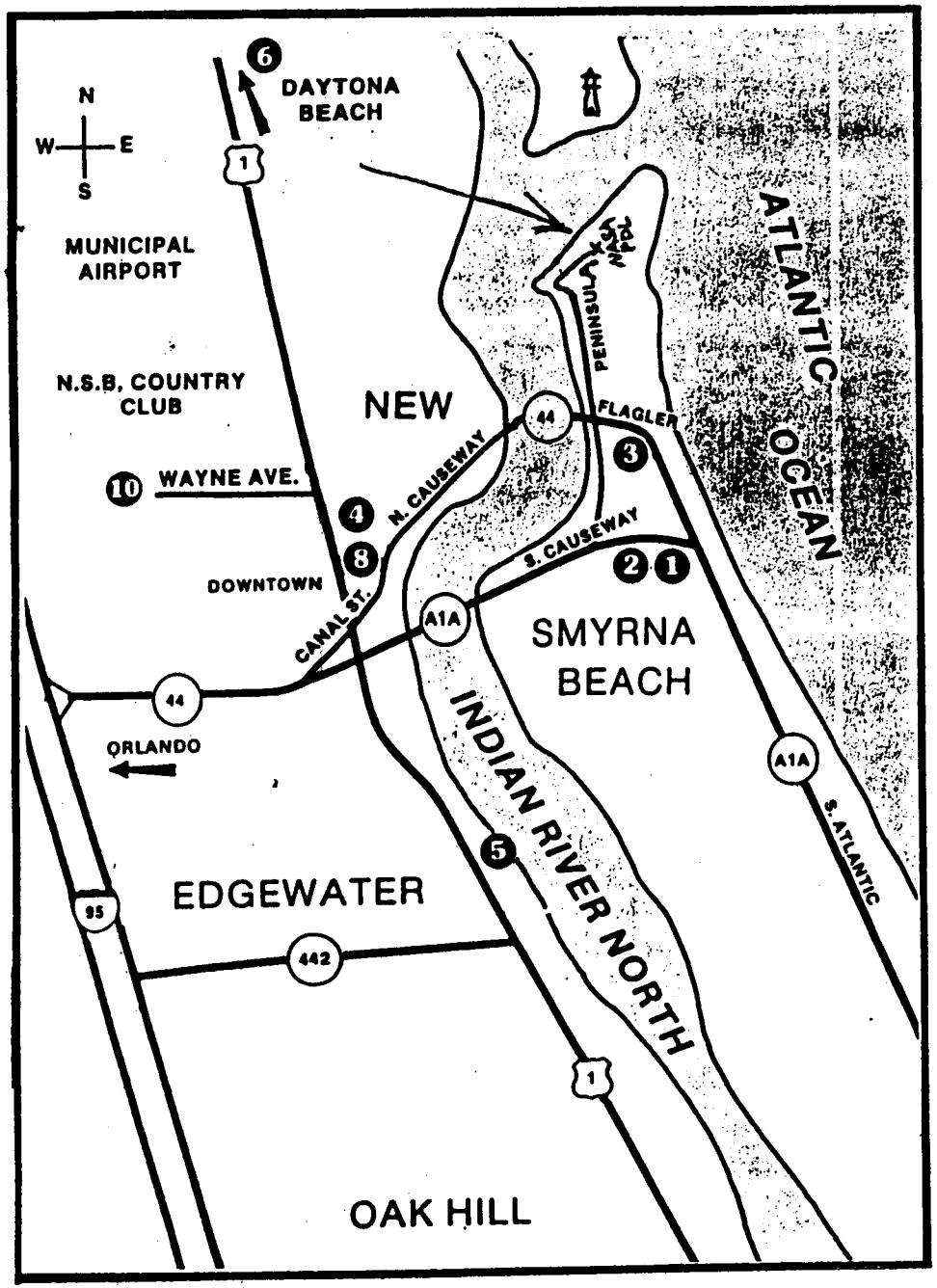
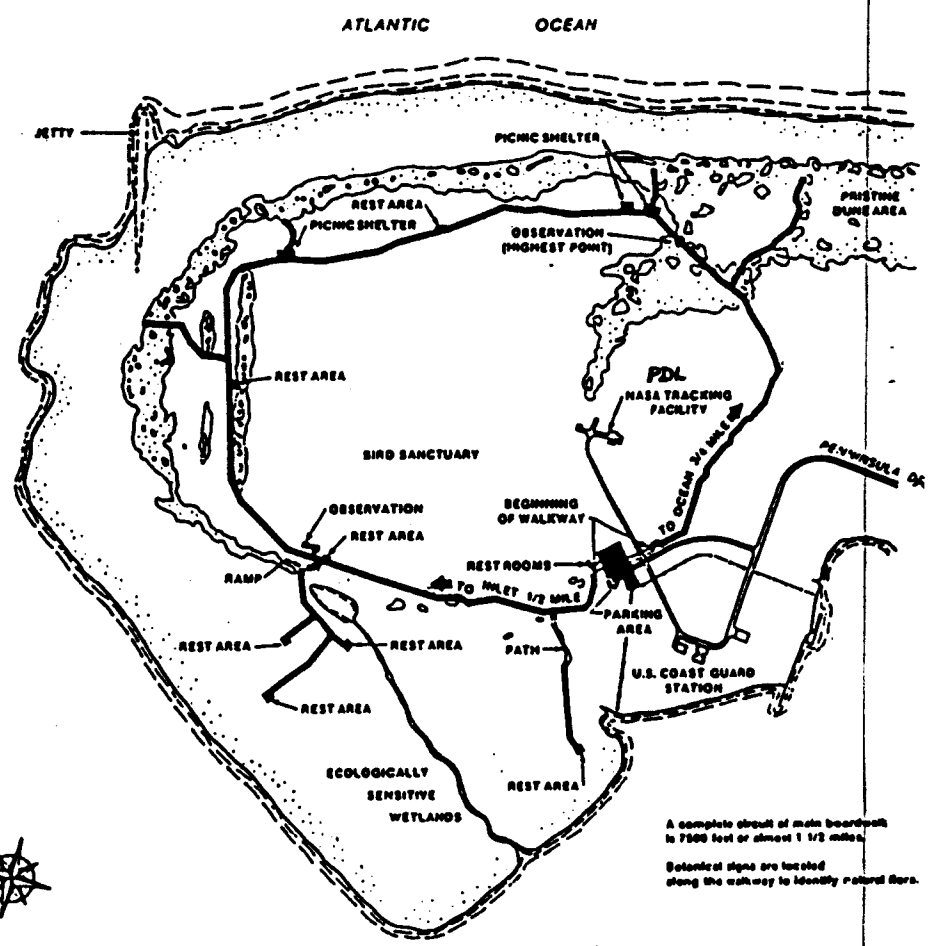


PONCE DE LEON INLET



A complete circuit of main boardwalk is 7500 feet or almost 1 1/2 miles.

Botanical signs are located along the walkway to identify natural flora.

INFORMATION MAP
SMYRNA DUNES PARK
Ponce De Leon Port Authority

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

Pat Phillips
(407) 867-2468

For Release:
May 23, 1989

KSC Release No. 47-89

NOTE TO EDITORS

NASA TO PARTICIPATE IN ASTRONAUT MEMORIAL FOUNDATION ANNOUNCEMENT

NASA managers from Kennedy Space Center will participate in a news conference at 6 p.m. Thursday, May 25, in the Terrace Room at La Cita Country Club, Titusville.

At the conference, Astronaut Memorial Foundation officials will announce the formation of a major research effort involving the use of space-age technology developed by NASA. George Mosakovski, Chief, Projects Management Office, and Bob Butterfield, Technical Integration Manager, both of the Advanced Projects, Technology and Commercialization Office, will present a statement on behalf of NASA.

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NASA News

National Aeronautics and
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Steve Dutczak
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For Release:
IMMEDIATE
June 30,1989

KSC Release No. 62-89

NASA PROGRAM FOR TEACHERS COMPLETES SIXTH YEAR

KENNEDY SPACE CENTER, Fla. -- Twenty-five master teachers who specialize in science and technical education programs recently completed a two-week NASA Educational Workshop for Mathematics and Science Teachers (NEWMAST) held June 18-30 at John F. Kennedy Space Center.

The teachers were selected by a committee made up from members of the co-sponsoring organizations. The program's sponsors are NASA, the National Science Teachers Association and the National Council of Teachers of Mathematics. The NEWMAST program has now competed its sixth year at KSC.

According to Dr. Bill Wargo, NEWMAST workshop coordinator, the program's mission is to generate student interest in careers in the aerospace, science and technology areas through classroom activities conducted by teachers participating in the workshop. Wargo is the director of the Florida Department of Education's Technology Education program.

"We hope that when teachers leave the workshop, they will implement what they learned about the nation's space program and its related technologies into classroom activities," Wargo said."The whole purpose of the program is to create an awareness about the cutting edge of technology."

Representatives from the Florida Department of Education work together with NASA education specialists to develop the curriculum for the NEWMAST and other programs for teachers. Wargo and other state workers set requirements for the program participants and then work to see that the educators integrate what they learn into their lesson plans.

The joint NEWMAST program provides an in-depth opportunity for science and math instructors who teach grades 7-12 to learn more about space science and technology. While at KSC, they work directly with agency engineers and scientists. NEWMAST is also designed to inform teachers about NASA's educational programs and materials.

During the workshop, the NEWMAST group met with KSC Center Director Forrest S. McCartney and NASA educational personnel. They also attended briefings by NASA engineers and scientists on the Space Shuttle and its facilities at KSC. Additionally, they learned about KSC's space-related biomedical and biological programs, future space missions, and how satellites aid in weather reporting, geological research and navigation on Earth.

-more-

Accompanied by NASA research personnel, the NEWMAST participants got a close look at the specialized laboratories and operational areas where space technology is developed. Some of these areas included the materials testing, chemistry and biomedical research labs. Some other applications of space program research were pointed out when the educators visited the nearby Florida Solar Energy Center.

To learn how wildlife coexists with the space program, the teachers studied the ecology of Canaveral National Seashore on the spaceport's northeast coast, and the Merritt Island National Wildlife Refuge occupying much of the Center's 140,000 acres. A special session on one ecosystem in the local environment was provided during this part of the workshop.

There was also time for a bit of fun while learning the chemistry and physics of a rocket launch. The group members first built their own model solid motor rockets and then launched them in a nearby field.

The rocket launch was the finale to the two-week "crash course" on the country's space program. Armed to the teeth with lesson plans, publications and other space-related materials for use in the classroom, the NEWMAST teachers left KSC ready to begin inspiring the next generation of space scientists and astronauts.

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NASA News

National Aeronautics and
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Washington, D.C. 20546
AC 202-453-8400

Lisa Malone
Kennedy Space Center
(407) 867-2468

For Release:
August 7, 1989

KSC Release No. 80-89

COLUMBIA MODIFICATIONS AND IMPROVEMENTS

About 258 modifications have been performed on Columbia since it last flew in Jan. 1986 on mission 61-C, including the list of critical return-to-flight vehicle improvements and about 16 that are unique to Columbia.

The return-to-flight modifications made to Columbia now bring the vehicle up to par with the other two orbiters, Discovery and Atlantis. These extensive improvements include the crew escape system, a latch to hold the 17-inch disconnect valve between the orbiter and external tank open during powered flight, wiring improvements and new thrusters in the forward reaction control system and orbital maneuvering system pods to prevent a burn through of the thrusters.

To decrease brake wear, the axles were stiffened on the landing gear. Instrumentation has been added to monitor the tire pressure once the landing gear doors are closed. About a dozen extra clamps were added to Columbia's hydraulic braking lines which demonstrated a higher vibration than that of the other ships.

Larger protective tiles have been installed in the elevon leading edge and wing trailing edges to improve flight durability and decrease turnaround maintenance. Columbia's payload bay doors and fuselage were originally covered with small white diced tiles. Since it last flew, technicians have replaced over 2,300 of these diced tiles with thermal protective blankets like those on the other two ships. In addition, Columbia features the reinforced carbon-carbon "chin panel." This panel replaces about 40 tiles between the nose cap and nose landing gear doors and is designed to better withstand heat loads during reentry. A significant amount of the worn interior thermal control blankets was replaced.

- more -

Columbia, which flew the first five flights of the Shuttle program, features more instrumentation than the other two ships for research and development. Much of the instrumentation will be hooked up during its eighth flight, including about 400 strain gauges on the wings, payload bay doors and vertical stabilizer to monitor loads, pressures and temperatures during flight. For aerothermal analysis, about 140 sensors have been installed on the wing area.

After STS-9 in Nov. 1983, Columbia was sent to Palmdale, Calif. for about 18 months to reconfigure the ship from a research and development mode to an operational orbiter. Five major modifications were made during this timeframe: (1) structural beefup of the wings and mid-fuselage; (2) addition of a heads-up-display; (3) the replacement of the commander and pilot's ejection seats with standard seats; (4) modification of the orbital maneuvering system pods to make them compatible with the other orbiters, including replacement of the pod's thermal tiles with the advanced reusable surface insulation blankets; and (5) addition of supplemental instrumentation to gather developmental engineering data.

An infrared imaging device on Columbia's vertical stabilizer, called the Shuttle Infrared Leeside Temperature Sensing (SILTS) experiment, will be active on this flight. This cylindrical housing atop the vertical tail was added in Palmdale after STS-9, and is about 20-inches in diameter. It is designed to obtain high-resolution infrared images of the upper (leeside) surfaces of Columbia's port wing and fuselage as the orbiter reenters Earth's atmosphere. These images will provide detailed temperature maps of those surfaces to indicate the amount of aerodynamic heating in flight.

Another experiment, called Shuttle Entry Air Data System (SEADS), housed in the nosecap will also be active this flight. The nose cap has 14 penetration assemblies distributed about its surface, each containing a small hole through which local surface air pressure will be measured during reentry. This experiment is expected to provide aerodynamic flight characteristics.

Other improvements include upgrades to the electrical system, upgraded cockpit computer keyboards, new fuel cells and new auxiliary power unit controllers. A newly modified liquid hydrogen recirculation pump package has been installed to prevent electrical shorting.

The new modifications have added approximately 2,500 pounds of extra weight since Columbia last flew. Columbia's dry inert weight with three main engines (but no payload, experiments or propellants) is approximately 179,833 pounds.

- end -

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Patricia Phillips
(407) 867-2468

August 28, 1989

KSC Release No. 91-89

PLAYALINDA BEACH TO BE CLOSED FOR STS-34 LAUNCH

KENNEDY SPACE CENTER, Fla. -- Playalinda Beach will be closed to visitors as early as sundown, August 28, in preparation for the launch of the STS-34 Shuttle mission.

The beach closing is required because of the rollout of the orbiter Atlantis to Launch Pad 39B. That rollout currently is scheduled for no earlier than 12:01 a.m. Tuesday, August 29. Launch is targeted for no earlier than October 12.

Based on an August 29 rollout, Playalinda Beach would be closed as of sundown Monday, August 28. The beach, part of the Canaveral National Seashore, will remain closed until the morning after launch. The beach will reopen at normal hours at launch plus one (1) day.

Beach goers who had planned to visit Playalinda Beach around this time should call the Canaveral National Seashore office at (407) 267-1110 for information on any changes in the beach closing time.

Other Canaveral National Seashore beaches such as Apollo Beach will remain open after rollout. They may be reached through the north beach entrance south of New Smyrna Beach.

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NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202-453-8400

Ed Campion
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Karl Kristofferson
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release:
November 13, 1989

RELEASE: 89-173

FINDINGS RELEASED ON ORBITER PROCESSING FACILITY WATER MISHAP

An investigation board at NASA's John F. Kennedy Space Center (KSC), Fla., has determined that human error caused the release of water from a Firex deluge system in Orbiter Processing Facility (OPF) bay 2 on Sept. 24 while workers were preparing the orbiter Columbia for its next mission.

Water damage to the exposed flight hardware and associated ground support equipment is still being assessed, but appears to be minimal. The mishap is not expected to impact Columbia's readiness for the STS-32 mission in December.

The board found that the primary cause of the mishap was the failure of water technicians to follow procedural instructions during the repair of a water valve in the deluge system. The board also cited as a contributing cause the lack of training by OPF "contingency team" members in the operation of the OPF water deluge system.

The incident was initiated by a sequence of events that occurred following the repair of a defective valve in Zone 3 of the seven-zone OPF water deluge system. Water technicians added a non-procedural flow test on the Zone 3 system by cycling flow valves. This allowed water to flow at a reduced rate (20-30 percent of normal flow) into Zone 3 of the deluge system, resulting in the release of water in the work area of the OPF.

Meanwhile, OPF technicians, who were members of the facility's "contingency team", had proceeded to the manual activation station behind OPF bay 2 in an attempt to shut off the flow, unaware that the Zone 3 water flow had already been isolated and deactivated.

- more -

Believing that the arming and firing valves for the water zones were in the "on" position rather than the "off" position, they mistakenly activated Zones 1 through 5 to the "full on" position, initiating a second and heavier flow of water from Zones 1, 2, 4 and 5 into the OPF work area. The water flow subsequently was shut down by water technicians.

The investigation board has recommended that KSC take the following corrective actions: (1) ensure that personnel with access to the OPF water deluge system are fully trained and certified in the operation of the system; (2) develop and rigorously implement a policy outlining which operations and activities involving the water deluge system require thorough pre-task briefings; (3) orient the system's control panels to the industry norm and label them with specific open and closed markings; and (4) provide positive control to limit access to the system's control panels.

The investigation board was chaired by Thomas Utsman, KSC deputy director. Other board members were Charles Henschel, Shuttle Operations; Linda Hannett, Safety, Reliability and Quality Assurance; and Norm Starkey, NASA Headquarters. Affiliated members were Ronald Gillett, Safety Advisor and Recorder; Douglas Hendriksen, Legal Advisor; and Dick Young, Public Affairs Advisor.

- end -

Editors Note: A copy of the board's report is available for review in the newsrooms at NASA Headquarters and the Kennedy Space Center.

Posted: Wed, Dec 20, 1989 10:25 AM EST Msg: DJIJ-2854-5284
From: PAO.KSC
To: L, LF, PAO.LOOP,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:JRUFF)
Subj: HST WIDE FIELD CAMERA

1. ~~Sylvia~~ SMP
2. Bill B
3. Sarah S
4. Lee

George H. Diller
407/867-2468

KSC Release No. 135-89 Dec. 20, 1989

WIDE-FIELD PLANETARY CAMERA TO BE INSTALLED ON SPACE TELESCOPE

A significant event in the preparation of the Hubble Space Telescope for launch next spring occurs today, Wednesday, Dec. 20 in the Vertical Processing Facility at KSC. The Wide-Field Planetary Camera (WFPC) is under installation and is being readied for upcoming checkout activity.

This is one of two cameras aboard HST. Unlike the Faint Object Camera, the Wide Field Planetary Camera will photograph brighter objects of larger area. It can be used to photograph the face of a planet in our solar system or hundreds of galaxies at once.

The installation is being performed by the HST payload test team from NASA and the Jet Propulsion Laboratory, Lockheed, Perkin Elmer, and McDonnell Douglas.

The WFPC arrived at KSC on Dec. 6 from JPL. It was delivered to NASA's Hangar S on Cape Canaveral Air Force Station for receiving inspection and its initial checks. The camera weighs 600 pounds, and its dimensions are 7 1/2 feet long, 6 feet wide, and 2 1/2 feet high. After the installation on the telescope in the Vertical Processing Facility, a series of functional tests are required.

Meanwhile, the latest in a series of prelaunch functional tests on the Hubble Space Telescope was completed on Dec. 8. Since testing began on Oct. 27, there have been no significant problems with the telescope itself, and only minor problems with

associated test equipment. Testing is performed via satellite from the Lockheed Sunnyvale facility, and from the HST Payload Operations Control Center located at NASA's Goddard Space Flight Center in Greenbelt, Md.

During the tests, the telescope and the onboard science instruments are operated as they are on-orbit. Test controllers gain actual operating experience on HST before launch, and also have an opportunity to de-bug or refine their software programs. In addition, controllers learn to recognize certain unique operating characteristics or "signatures" of the telescope and its science instruments.

The latest test series demonstrated, among other things, the effectiveness of the fault protection system. The telescope has the ability to recognize a significant problem, safe itself by going on stand-by, then signaling controllers and awaiting help from the ground.

The Hubble Space Telescope has been powered down for the holidays and functional testing will be resumed in January.

Also scheduled to occur after the first of the year is the verification testing for electrical compatability with the Space Shuttle and associated deployment hardware. Called "CITE Testing," which stands for Cargo Integrated Test Equipment, these are routine tests for payloads flown on the Space Shuttle and take about four days.

Based on the current manifest, the Hubble Space Telescope is scheduled to be transported to Pad B on Launch Complex 39 on March 9, 1990, placed in the payload bay of Discovery on March 12, and launched no earlier than March 26.

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NASA News

National Aeronautics and
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(Phone: 202/453-4164)

Dick Young
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release:
January 5, 1990
3 P.M. EST

RELEASE: 90-3

TRULY MAKES KEY APPOINTMENTS

NASA Administrator Richard H. Truly today named Thomas E. Utsman as the Deputy Associate Administrator for Space Flight (Management) and James A. "Gene" Thomas as the Deputy Director of the John F. Kennedy Space Center, Fla.

In his new capacity, Utsman will have overall responsibility for assisting William B. Lenoir, Associate Administrator for Space Flight, in the day-to-day oversight management of the Space Flight programs. Specific responsibilities will include overseeing procurement activities, assessing program management performance and conducting long-range operational planning. George Abbey continues in his capacity as Deputy Associate Administrator.

Utsman was both Deputy Director of Kennedy Space Center, a post he held since August 1985, and Director of Space Transportation System Mangement and Operations, with responsibility for the engineering management and technical direction of return-to-flight activities in the post-Challenger era, which he performed from December 1986 until March 1989.

Utsman began his NASA career in 1963 as a facilities design engineer in the Apollo program. In 1971 he was named to head the Design Engineering Directorate's Project Engineering Office, which was assigned the task of converting old facilities and building new facilities for launching the Space Shuttle. He subsequently served as Deputy Director of Project Management; Associate Director of Design Engineering; Director, Operations Management; Deputy Director and Director of Technical Support; Director of Shuttle Operations; and Director of Shuttle Management and Operations.

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Born in Detroit, Michigan, Utsman was graduated from Fordson High School, Dearborn, in 1954. He received a Bachelor of Science degree in Mechanical Engineering from the University of Michigan in 1958 and a Master's Degree in Management from Florida State University in 1968.

Utsman has been the recipient of numerous honors and awards, including the NASA Distinguished Service Medal and, most recently, the Presidential Rank of Meritorious Executive for his outstanding contributions to the Space Shuttle return-to-flight effort.

Thomas, who will serve as Deputy Director under Forrest S. McCartney, has been the KSC Director of Safety, Reliability and Quality Assurance since January 1987. In that post he has been responsible for developing and implementing overall safety policy and procedures at KSC and activities relating to KSC progams at Cape Canaveral Air Force Station, Fla., and Vandenberg Air Force Base, Calif.

He joined NASA in 1962 and served as lead engineer for prelaunch testing and checkout of communications systems on the Apollo spacecraft.

Thomas became active in Space Shuttle activities early in the progam, serving as the lead flight project engineer on the KSC engineering team which participated in Orbiter Vehicle 101 (Enterprise) Approach and Landing Tests conducted at Edwards AFB, Calif., in 1976 and 1977.

From November 1977 until June 1983, Thomas was lead orbiter flight project engineer for the Space Shuttle orbiter Columbia, first vehicle in the fleet to begin space flight. He later became chief shuttle flight project engineer, Shuttle Engineering Directorate, with overall responsibility for integration of all testing and checkout of Shuttle orbiters, external tanks and solid rocket booster flight hardware.

From September 1985 until December 1986, Thomas served as Acting Director and subsequently Director, of Shuttle Launch and Landing Operations.

A native of Meridian, Miss., Thomas received his Bachelor of Science degree in electrical engineering from Mississippi State University in 1962. He was graduated from Florida State University with a master's degree in technical management in 1973.

His awards include the NASA Exceptional Service Medal in 1981 and the Outstanding Leadership Medal in 1989.

- end-

addition to the spacecraft. NASA also will provide science instruments and tracking via the Deep Space Network. The science data from GEOTAIL will be shared among all the participants in the GGS program.

GEOTAIL is the largest NASA/Japan international cooperative space science mission to date.

- end -

Posted: Mon, Jan 8, 1990 11:20 AM EST Msg: QJJA-2856-7899
From: PAO.KSC
To: L, LF, PAO.LOOP
Subj: RELEASE/KSC HOST PROCURMENT BRIEFING

Bruce Buckingham
Kennedy Space Center, Florida
407/867-2468

Jan. 8, 1990

KSC RELEASE NO. 9 - 90

KSC TO HOST ANNUAL PROCUREMENT BRIEFING TO INDUSTRY

Representatives of NASA/Kennedy Space Center, the Eastern Space and Missile Command/Patrick Air Force Base, and local prime aerospace contractors will host an industry-wide briefing on anticipated FY90 procurement projects.

The briefing will be held at Spaceport USA's Galaxy Theatre beginning at 8 a.m., Jan. 19, 1990.

During this briefing, the business community will be advised of future procurements in the areas of Construction; ground support equipment requirements, both mechanical and electrical; studies; future projects; space station projects; and commercialization of space.

KSC contractors currently planning participation in the briefing include: EG&G Florida, Inc., Lockheed Space Operations, McDonnell Douglas Space Systems Co., Rockwell International, Inc., USBI, and Boeing Aerospace Operations.

A $5.00 registration fee will be charged, payable on the day of the briefing. Seating is limited (maximum 500 persons) and reservations are recommended.

For reservations call (407) 867-7353, or write NASA/KSC, Mail Code: SI-PRO-1A (fax no. 407-867-3661) by 12:00 noon, Jan. 18, 1990.

# # # #

Posted: Mon, Jan 8, 1990 11:42 AM EST Msg: VJJA-2856-7992
From: JKUKOWSKI
To: INT.LOOP, JSBOYD, STEVEBRODY
CC: (C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF)
Subj: HEADLINE NEWS/TV SKED 1/8/90

MONDAY, JANUARY 8, 1990 AUDIO: 202/755-1788

THIS IS NASA HEADLINE NEWS FOR MONDAY, JANUARY 8....

POOR WEATHER SCRUBBED THE LAUNCH OF THE STS-32 MISSION TODAY. LAUNCH DIRECTOR BOB SEICK MADE THE DECISION AT 8:56 A.M., EASTERN TIME, HAVING WAITED THROUGH NEARLY THE ENTIRE LAUNCH WINDOW FOR THE WEATHER TO CLEAR.

IMMEDIATELY FOLLOWING THE SCRUB ORDER THE STS-32 CREW BEGAN SHUTTING DOWN ORBITER SYTEMS. PAD CREWS THEN BEGAN PROCEDURES TO DRAIN THE PROPELLANTS FROM THE EXTERNAL TANK AND READY THE COLUMBIA FOR LAUNCH TOMORROW.

THE TUESDAY LAUNCH WINDOW OPENS AT 7:35 A.M., EASTERN TIME, AND REMAINS OPEN UNTIL 8:33 A.M. A MINOR CHANGE MAY BE MADE AFTER ASSESSMENT OF THE LDEF ORBITAL ELEMENTS THIS EVENING.

WEATHER FOR TUESDAY IS MUCH MORE FAVORABLE.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Patricia Phillips
407-867-2468

Jan. 9, 1990

KSC Release No. 1-90

JOHN R. LYON SELECTED TO HEAD KSC SPACE STATION PROJECTS OFFICE

Kennedy Space Center Director Forrest S. McCartney has announced the selection of John R. "Dick" Lyon as Manager, Space Station Projects Office. He replaces C.M. Giesler, who recently retired.

Lyon's most recent position at KSC was Deputy Director, Payload Management and Operations. He has an extensive background in both payload operations and design engineering.

Named Chief, Project Engineering Office in the Engineering Development Directorate in 1977, Lyon moved up to progressively more responsible positions in that directorate, including an appointment as Deputy Director in 1984. Two years later, he was selected for the position of Deputy Director of Payload Management and Operations.

In addition to those management responsibilities, Lyon also served on a Source Evaluation Board at Marshall Space Flight Center that resulted in the selection of Boeing Aerospace Co. to provide design and delivery of Work Package 1 Space Station Freedom elements. His space station experience also includes service as vice-chairman of a Procurement Development Team for the planned KSC Space Station Processing Facility.

Lyon's experience spans numerous NASA accomplishments from the Apollo program onward. He joined NASA at KSC in June, 1964. He was responsible for developing the KSC ground systems design criteria and activation planning for the Apollo Spacecraft and Lunar Module at Launch Complexes 34, 37, and 39, among other activities.

A 1958 graduate of the University of Kentucky, Lyon is responsible for project management of facilities, hardware, and equipment to test and prepare Space Station Freedom elements for launch. He and his wife Katherine live in Cocoa, Fla.

####

Bruce Buckingham
407/867-2468

Feb. 14, 1990

KSC RELEASE NO. 26 - 90

KSC GROVES SUSTAIN HEAVY LOSS DURING DECEMBER 1989 FREEZE

The citrus fruit harvests at KSC sustained a major loss because of the extremely low temperatures experienced in December 1989. Recent projections show the losses could be greater than 60 percent for the current season.

Early and mid-season varieties of oranges experienced as much as a 40 percent loss. Late-season varieties, such as valencias, may suffer a 50 to 60 percent loss since the fruit has not met maturity standards and couldn't be harvested immediately following the freeze.

Grapefruits and tangerines could see losses as high as 90 percent. This is due to the fact that the majority of processing plants were attempting to salvage as much of the orange crop as possible, and they were not processing grapefruits or tangerines.

Minor damage was reported to the citrus trees themselves and the recent new growth of foliage is being taken as a good sign the trees will have an excellent chance for full recovery without much dieback. Early projections call for a following season crop to be fairly good.

In 1989, 1530 acres on KSC produced approximately 500,000 boxes of citrus yielding gross sales of about $2.2 million.

Groves on KSC are operated under lease to local growers. Profits from the sales of citrus grown on KSC property is returned to the U.S. Treasury.

# # # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

George H. Diller
407-867-2468

Feb. 15, 1990

Release No: 27-90

GAMMA RAY OBSERVATORY PHOTO OPPORTUNITY SCHEDULED FEB. 21 AT KSC

A post-arrival photo opportunity with the Gamma Ray Observatory (GRO) will be held at Kennedy Space Center on Wed., Feb. 21, at 11 a.m.

GRO, the second in NASA's series of four "Great Observatories," is targeted for launch in November aboard the Space Shuttle Atlantis. The spacecraft's four scientific instruments are designed to study celestial gamma ray emitters. The 35,000-pound GRO will be the heaviest spacecraft without an upper stage ever deployed from the Space Shuttle.

The photo opportunity provides an informal, early look at the GRO spacecraft, which arrived at KSC on Feb. 6 and is not yet flight ready. No briefing will be held in association with the photo opportunity, but project spokesmen from NASA and TRW, the spacecraft's builder, will be available to answer questions.

Media representatives planning to attend the photo opportunity should be at the KSC News Center by 10:30 a.m. on Feb. 21. Transportation will be provided to the Payload Hazardous Servicing Facility (PHSF) where GRO is located.

Appropriate clean room attire will be furnished. No matches, lighters, tobacco products, leather or vinyl cases may be taken into the facility. Plastic bags will be furnished to carry camera accessories. Flat, closed-toe shoes are required -- no sandals or high heels.

Electronic flash is permitted; however, all lighting equipment must be self-contained and battery powered. Photographers should plan for the sodium vapor lighting used in the PHSF high bay.

STS-36 mission badges will serve as accreditation for the photo opportunity.

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Patricia E. Phillips
Kennedy Space Center, FL.
(407-867-2468)

Feb. 23, 1990

Jean Drummond Clough
Langley Research Center, Hampton, Va.
(804-864-6122)

KSC Release No. 30-90

NASA TECHNICIANS BEGIN REMOVING LDEF EXPERIMENTS

NASA technicians from Langley Research Center began removing experiments today from the Long Duration Exposure Facility (LDEF), the satellite retrieved from space by the STS-32 crew in January.

The first experiment, the Space Exposed Experiment Developed for Students (SEEDS), was removed from the spacecraft at 12:22 p.m. EST. SEEDS, sponsored by the George W. Park Seed Company in Greenwood, S.C., will eventually go to classroom students around the country for use in school science projects.

Processing plans call for the removal of three other trays today. Illustrating the international flavor of the experiments, two of these trays contain cosmic ray experiments from the Dublin Institute for Advanced Studies in Dublin, Ireland. The other tray scheduled for removal today is a Langley Research Center space debris experiment.

The protocol for tray removal is painstaking in its protection of scientific data. As each tray is removed from LDEF, it will be placed on a workbench where the principal investigator will perform closer inspections and take basic measurements. These measurements will include detailing the sizes of micrometeoroid and orbital debris impacts.

The combined data from individual trays and the LDEF frame will provide valuable information in planning future space structures, including Space Station Freedom. Removal of the 57 experiments, contained in 86 trays mounted on the LDEF framework, is expected to continue through March.

--more--

After the measurements and first analyses are completed, the experiment hardware will be appropriately configured for transport, then packaged and shipped to the investigator's laboratory. There, additional investigation and analysis will be performed. More than 200 investigators have participated in the experiments flown on LDEF, which spent almost six years in space.

Preliminary results of these individual investigations will be announced late this summer during an Investigator Working Group meeting to be held at the Langley Research Center, Hampton, Va. Langley developed and managed the LDEF project, which is unique in its opportunities for analysis of the effects of space on various materials.

The date of the conference will be announced later.

--30--

Command?

Bruce Buckingham
407/867-2468

March 20, 1990

KSC RELEASE NO. 42 - 90

KSC AREA BOATING RESTRICTED FOR STS-31 LAUNCH

Waterways and boating near the Kennedy Space Center will be strictly controlled prior to and during the launch of the Space Shuttle Discovery on the STS-31 mission, now targeted for April 12, 1990.

Safety and security requirements, including U.S. Air Force Range Safety impact limit lines, will go into effect as early as three days before launch. Other requirements will be phased into effect through sundown the night before launch. A general description of the restricted areas follows.

Banana River: Security limits begin at the Banana River Barge Canal south of KSC at the State Road 528 crossing and extend north. This restriction goes into effect at sundown the night before launch.

Atlantic Ocean: Beginning at sundown the night before launch, a general exclusion zone will be in effect three miles offshore from the Haulover Canal, north of KSC, to the entrance of Port Canaveral on the south end of KSC. Four hours prior to launch, all ocean-going traffic will be restricted from entering an area measured from five miles north and south of the pad, and extending 30 miles east into the ocean. Pad B is located at latitude 28 degrees, 37 minutes, 37.26 seconds north; longitude 80 degrees, 37 minutes, 15.09 seconds west. An additional three mile wide exclusion zone will be extended eastward through the projected flight path of the shuttle.

Mosquito Lagoon: This area south of the Haulover Canal is off limits to all boats beginning at dusk the night before launch.

Indian River: Restrictions apply from the NASA Causeway north to the Haulover Canal and east of the Indian River's main channel. Restrictions begin at sundown the night before launch.

All boating restrictions will be lifted approximately one hour after launch.

The U.S. Coast Guard, the U.S. Fish and Wildlife Service, and KSC security forces share responsibility for enforcing the boating guidelines.

# # # #

Bruce Buckingham
407/867-2468

March 20, 1990

KSC RELEASE NO. 43 - 90

KSC AREA BRIDGE OPENINGS TO BE CONTROLLED FOR STS-31 LAUNCH

The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch of the Space Shuttle Discovery on mission STS-31, now targeted for 9:21 a.m. EDT, April 12, 1990.

Bridges affected by the launch requirements include:

-- Canaveral Harbor Barge Canal (State Road 401, south of Cape Canaveral Air Force Station Gate 1);

-- Indian River Causeway west, a.k.a. NASA Causeway (Intracoastal Waterway at Addison Point);

-- Merritt Island Barge Canal (Merritt Island State Road 3);

-- Haulover Canal Bridge (State Road 3, north of KSC).

Restraints on bridge openings for boat traffic will begin three hours before launch. The bridges may be opened for 5 minutes at the following points in the launch countdown: T-180 minutes, T-150 minutes, T-120 minutes, T-90 minutes, and T-65 minutes.

Bridges will remain closed to boat traffic from T-60 minutes to 90 minutes after liftoff (T+90). They may then open for 5 minutes at T+90 minutes, T+120 minutes, and T+150 minutes. Bridge operations will return to normal at three hours (T+180 minutes) after launch.

Should the Shuttle orbiter be required to perform a Return to Launch Site (RTLS) landing at KSC, all bridges would remain closed to boat traffic from 45 minutes before landing to one hour after landing.

# # # #

Bruce Buckingham
407/867-2468

March 20, 1990

KSC RELEASE NO. 44 - 90

GENERAL AVIATORS RESTRICTED FROM KSC AIRSPACE DURING STS-31 LAUNCH

The airspace immediately surrounding Kennedy Space Center will be limited to official aircraft only and will be off-limits to general aviation pilots prior to and during the launch of the Space Shuttle Discovery on mission STS-31, now targeted for April 12, 1990.

NOTAMS must be checked by pilots prior to flights near the KSC area. Pilots are warned that violations of the restricted airspaces may result in serious penalties, including suspension or revocation of pilot privileges.

Official aircraft supporting the launch will be in the air. Pilots must be aware that wandering into a restricted area is not only forbidden, but will also create a safety hazard to support aircraft and the errant pilot.

Anyone wishing to view the launch from the air should stay well west of the Indian River. Pilots should be advised that the airspace in that area is expected to be extremely congested with both controlled and uncontrolled aircraft.

Pilots should also be aware of the solid rocket booster (SRB) exhaust cloud that occurs after launch. They should stay at least five miles away from that cloud, even if it drifts out of the restricted area. Research aircraft will be flying into and out of the cloud, and visibility will be limited.

In general, the airspace restrictions cover a variety of air ranges from now through launch. In addition to the normal restrictions over KSC and Cape Canaveral Air Force Station, the launch will require that all private aircraft stay out of an area roughly bounded by the west side of the Indian River on the west, the Trident Basin (State Road 528 area) on the south, slightly north of Haulover Canal, and three miles out into the Atlantic on the east. The restrictions are "surface to unlimited." These launch-specific restrictions begin three hours before launch.

- more -

Pilots should consult the most recent edition of the Jacksonville Sectional Aeronautical Chart. In addition, they should contact the St. Petersburg Flight Service Station at 1-800-99-27433 (1-800-WX-BRIEF). Advisories will be available from the Patrick Approach Control (VHF 119.25 megahertz), Space Center Executive Airport Tower (TIX) (VHF 118.9 megahertz), or the NASA Tower (126.3 megahertz).

Pilots should also refer to the current Patrick Air Force Base release on restricted airspace.

# # # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202-453-8400

Patricia Phillips
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release:
April 19, 1990

~~KSC Re~~lease No. 48-90

KSC PROVIDES SAFE HARBOR FOR MANATEES

They're friendly, playful, and peaceful-- but the Florida manatee is dying in record numbers as man encroaches on their natural habitats.

There is an exception to these gloomy statistics: Kennedy Space Center. A recent NASA study shows that only two manatees have died in KSC waters since 1984. In comparison, 616 manatee deaths were reported elsewhere in Florida during the same time period. The two deaths at KSC were attributed to natural causes, while the fatalities statewide were primarily caused by boating accidents.

The low death rate at KSC occurred despite the large numbers of manatees using Center waterways. As a wildlife sanctuary, KSC has provided a safe environment for hundreds of species, including several designated as "threatened" or "endangered". From the American bald eagle taking wing in the sky to nesting turtles burrowing into the warm seashore sands, KSC has a solid history of providing sanctuary to both native and migratory wildlife.

"We're proud of our record of wildlife protection. We intend to take every precaution to ensure that KSC remains a working symbol of how technology and wildlife can safely co-exist," said KSC Director Forrest S. McCartney.

As part of that protection, aerial surveys of manatee herds have been conducted since 1977. Data collected in the mid 1980's indicated that the numbers of manatees using the northern Banana River had increased dramatically from earlier years, and that the animals appeared to have changed their distribution patterns as well.

George English, Director of NASA's Executive Management staff at KSC, participates in the manatee surveys at least once a year. "It's thrilling to watch the herds - especially the mothers with calves - and realize that KSC is giving them a safe place,"English declared.

- more -

In addition to the KSC surveys, the U.S. Fish and Wildlife Service (USFWS) and the Florida Department of Natural Resources (FLDNR) conducted bimonthly aerial surveys in 1986 for the entire Florida east coast. Those studies showed that the Banana River has the highest concentration of manatees during the non-winter months, compared to other East Coast areas.

Additionally, in the spring about 71 per cent of the manatees in Brevard County congregate in the Banana River. Of that group, about 85 per cent go north of the NASA Causeway, in the KSC security zone.

The large numbers of manatees heading for safe waters graphically demonstrate the importance of the protected KSC areas, said Dr. Paul Buchanan, Director of NASA's Biomedical Operations and Research Office. His office oversees the work of the Bionetics Corporation, which prepared the study.

"Data such as that contained in this new report clearly reflects the crucial role that KSC plays in providing a supportive environment," Buchanan said. "It proves, scientifically, that our efforts do, indeed, make a difference."

In the first 2 months of this year, 85 manatees died in Florida waterways. That fact reflects the upward trend of deaths, with 133 reported in 1988, and 166 in 1989. Experts attribute many of those casualties to accidents with boats, or the cumulative effect of injuries from accidents.

"About 32 per cent of the 1988 deaths were due to boat or barge activities," explained Dorn Whitmore, a ranger with the Merritt Island Wildlife Refuge. To further protect these unique mammals, Whitmore said, an expanded manatee sanctuary was created March 1 in the upper Banana River, north of State Road 528.

"The Banana River has the highest number of manatee deaths of any body of water in the United States," Whitmore said.

"Manatees are under continual pressure from boat activities," he continued. "However, they can live a natural life in KSC waterways."

Apparently, the manatees themselves recognize a safe place to live and raise their young. The NASA report calls the dramatic increase in the numbers of animals in the KSC area after 1984 "quite remarkable." Preliminary data from 1990 studies again show an increase in manatee population.

To the delight of KSC's Launch Complex 39 employees, one of the manatees' favorite KSC areas is in the turning basin near the Vehicle Assembly Building. There, hoses emit freshwater, attracting the curious, frolicsome beasts.

The bubbling freshwater flow is part of a project, sponsored in part by the USFWS, to attract manatees to an area for tagging with monitoring devices. In 1988, the prime Space Shuttle processing contractor, Lockheed Space Operations Co., committed to support of USFWS manatee research efforts through 1992. Recently, McCartney and Whitmore accepted another $5,000 donation of the total $20,000 pledge.

Donations are used for a "space-age" manatee monitoring program, which uses a sophisticated tracking system that relays data by satellite. So far, 20 manatees at KSC have been fitted with transmitters since the tracking program began in 1986. They're part of almost 40 "tagged" along the East Coast in Brevard. Wildlife officials report that the entire group uses KSC waters.

The purpose of the tracking devices is to help wildlife managers identify manatee sanctuaries, as well as migration patterns. The tracking devices resulted from space-related technology, and rely on satellite communications that allow rangers to check on manatee location from a touch-tone phone.

In comparison, the older, radio-signal transmitters require a human with a receiving device to be within 5 miles, thus requiring constant travel to follow manatee migration. Eventually, wildlife officials would like to phase out the older types and use those with "instant location" capabilities.

But the devices aren't the only way KSC protects the gentle creatures. The two solid rocket booster retrieval ships, the Liberty Star and the Freedom Star, were both constructed with water-jet propulsion in addition to propellers.

"We use the water-jet thrusters in lieu of the propellers in manatee waters. In 10 years of operations, we've had no manatee incidents," said Anker Rasmussen, Morton Thiokol Operations Manager.

The KSC concern is shown in training as well as in hardware. All Center personnel working with boats are required to attend a manatee habitat familiarization course, Whitmore said. That course resulted from KSC's only 2 manatee accidents. The accidents occurred in 1978-79 when the Saturn barge canal was being dredged.

"After those fatalities, which we believe were linked to a pilot boat, we began the specialized safety ourse," Whitmore said. "Boat operators and others are taught how to spot and avoid manatees. So far, it's been working."

So far, the statistics show that KSC's role as a sanctuary is making a dramatic difference in the continued existence of the Florida manatee. The safe harbor is "vitally important," according to study authors Jane and Mark Provencha of Bionetics Corp.

For researchers, and wildlife enthusiasts, watching the peaceful manatees glide smoothly through the cool, protected waterways of KSC is a sign of hope.

"The Space Center's safe harbor shows that mankind can make a constructive -- not just a destructive -- difference in the continued existence of our wildlife," McCartney added.

- end -

NOTE TO EDITORS/NEWS DIRECTORS: Still photography and video are available to accompany this release, and may be obtained by calling the News Center Audo-Video office at 407/867-7819.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Hugh W. Harris
Area Code 407/867-2622

April 10, 1990

KSC RELEASE NO. 65-90

ABBEY CONVENES BOARD INVESTIGATING ATLANTIS FUEL CELL MISHAP

KENNEDY SPACE CENTER, FL -- George W.S. Abbey, Deputy Associate Administrator, Office of Space Flight, NASA Headquarters, convened the first meeting of a mishap investigation board at the Kennedy Space Center Friday April 6, charged with looking into the cause of accidental damage to a fuel cell being removed from the Space Shuttle Atlantis April 4. The Board was appointed by Dr. William B. Lenoir, Associate Administrator of Space Flight, NASA Headquarters.

Fuel cell No. 3 was being prepared for removal from Atlantis for shipment back to the factory because of a problem which was found during post-flight testing. As it was being prepared for the removal process the fuel cell was further damaged when one side was overpressurized.

Dr. Lenoir charged the Board with determining the facts and probable cause of the mishap; assessing the possibility of the mishap recurring; and recommending corrective or remedial measures.

The Board began its work by visiting the Orbiter Processing Facility for a look at the fuel cell and a briefing on the incident. After determining that proper documentation had been secured, Abbey said the Board cleared the removal of the fuel cell to the factory for a complete assessment of its condition.

The Board's final report is expected by April 30th.

Members of the Board include:

Chairman : George W.S. Abbey

Members: Harvey E. Crawford, Vehicle Engineering Division, Kennedy Space Center
Jackie Smith, Director, Safety, Reliability and Quality Assurance, Kennedy Space Center
John Starnes, Aviation Safety Division, Johnson Space Center
James A. Thomas, Deputy Director, Kennedy Space Center
Chester Vaughan, Propulsion & Power Division, Johnson Space Center

Ex-Officio Members:
Bill J. Comer, Safety Reliability and Quality Assurance Division, NASA Headquarters

Recorder: Christina M. Piesowicz, Safety, Reliability & Quality Assurance, Kennedy Space Center

Advisors: James Adamson, Director of Processing Analysis, Kennedy Space Center
Hugh W. Harris, Public Affairs, Kennedy Space Center
Douglas Hendriksen, Deputy Chief Counsel, Kennedy Space Center

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

Lisa Malone
407/867-2468

For Release:
April 19, 1990

KSC Release No. 73-90

BASCOM MURRAH, III, NAMED FLOW DIRECTOR FOR SHUTTLE COLUMBIA

Bascom Murrah, III, was recently selected as the new flow director for NASA's first Space Shuttle, Columbia.

As Columbia's flow director, Murrah is responsible for managing all areas of flight hardware processing to assure timely achievement of scheduling milestones for all of Columbia's space flights. These responsibilities were previously managed by Larry Ellis, deputy director of Shuttle Operations, for Columbia's STS-32 mission. Ann Montgomery, now deputy director of Shuttle Logistics, was the flow director for Columbia's first "return-to-flight" launch, the STS-28 mission.

Since his selection in March 1990, Murrah has been overseeing the day-to-day operations to prepare Columbia for its tenth mission, STS-35, scheduled for launch next month. STS-35 will be a nine-day mission to gather astronomical data with the Astro-1 observatory carried in Columbia's payload bay.

"I'm enjoying the challenges of a shuttle flow director and having the opportunity to represent Kennedy Space Center in this capacity," said Murrah.

Born in Brunswick, Ga., he received an aeronautical engineering degree from Georgia Institute of Technology, Atlanta, Ga. He came to KSC in 1968 as an aeronautical engineer and worked on the lunar module for the Apollo 11 mission to the moon.

He was assigned to the Viking spacecraft program in Denver, Colo., for seven months in 1973, and then returned to KSC as a lead mechanical engineer in the Skylab program. He later served as lead mechanical engineer for the Space Shuttle Approach and Landing Test Program at the Dryden Flight Research Facility, Edwards, Calif., in 1976-77.

KSC FORM 2-160A (REV. 6/88) KSC/OP (4/89)

After serving as chief of the Structures, Handling and Access Systems Section of KSC's Vehicle Engineering Directorate, Murrah spent two years with Rockwell International Corp. as a mechanical engineer in the shuttle program. He returned to NASA as a Shuttle project engineer on STS-2, working on the solid rocket boosters.

He was chief of the Auxiliary Power Unit and Hydraulic Systems Section in the Vehicle Engineering Directorate before being appointed to this current position.

Murrah and his wife, the former Barbara Hasell, live in Titusville, Fla. They have four children.

# # # #

Dick YoungImmediate
Area Code 407/867-2468

KSC Release No. 90 - 90

KSC NEWS CENTER MAKES SIGNIFICANT CHANGES IN OPERATING HOURS

The hours of operation for the Kennedy Space Center's News Center have been adjusted for STS-35 and subsequent Space Shuttle missions.

The new schedule is based upon News Center usage by the press during recent missions and is designed to meet valid news media needs while conserving expensive manpower resources.

If a countdown begins outside of normal 8 a.m. to 4:30 p.m. duty hours, a public information officer will confirm the start of the count and update the automatic answerphone which is accessible by calling Area Code 407/867-2525.

These are the operating hours for STS-35. While designed specifically for STS-35, they are typical of the operating hours for downstream missions.

L-3 and 2 Days: 8 a.m. - 6 p.m.
L-1 Day: Open at 8 a.m. on L-1 and remain open until 6 p.m. on launch day

L+1 Day through end of Mission: 8 a.m. - 4:30 p.m. Monday through Fridays. Closed on weekends.

Landings: If the mission landing falls on a weekend or outside of normal duty hours, the KSC News Center will be opened on a minimal basis from Landing minus 2 hours until departure of the crew for the Johnson Space Center.

KSC News Center hours will be reexamined when shuttle landings are resumed at KSC.

- more -

PASS AND IDENTIFICATION BUILDING SCHEDULE FOR STS-35

News media may pick up their credentials at the Pass and Identification Building at Gate 2 on Florida Route 3 on Merritt Island on the following schedule:

L-3 Days 8 a.m. - 4:30 p.m.
L-2 Days 8 a.m. - 6 p.m.
L-1 Day 8 a.m. - 11:45 p.m.
Launch Day Will reopen one hour after launch or scrub notification.

Mission credentials issued by the Kennedy Space Center and the Johnson Space Center will be honored at the Marshall Space Flight Center in Huntsville, Ala., for media representatives who wish to cover STS-35 payload operations at the location.

- end -

May 22, 1990

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Lisa Malone
(407) 867-2468

June 6, 1990

KSC Release No. 99-90

BOARD APPOINTED TO INVESTIGATE IMPROPER RAISING OF DISCOVERY'S PAYLOAD BAY DOOR

An investigation board has been named by Center Director Forrest McCartney to examine the circumstances surrounding the June 4, 1990 mishap which involved improper raising of the orbiter Discovery's right hand payload bay door. Discovery is located in Orbiter Processing Facility high bay 1 undergoing processing for the STS-41 Ulysses mission, scheduled for launch in October 1990.

Chairman of the board is Paul Myers, Technical Assistant to KSC's Director of Engineering Development. Hector Delgado, of the Systems Assurance Office, Reliability and Quality Assurance Directorate is the deputy chairman. Other members of the board are: Charles Stevenson, chief, External Tank Section, Vehicle Engineering; and Tim Yang, facilities systems engineer, Mechanical and Electrical Systems Branch, Facilities and Systems Operations Division, Center Support Operation Directorate. Two additional board advisors are: Laurie Walls, engineer, Structures, Handling and Access Systems Section, Vehicle Engineering, and Larry Irminger, Lockheed Space Operations Company.

Ex-officio board members are Elizabeth Gruhler, safety advisor, Douglas Hendricksen, legal advisor and Lisa Malone, public affairs advisor. Elliot Kicklighter, primary assistant to the Deputy Director, National Space Shuttle Operations, has been appointed as a level II observer.

- more -

On June 4, at about 8:30 a.m., Discovery's right hand payload bay door was configured for closure. Special fixtures used to handle orbiter doors in the earth's gravity were in place for the operation. The fixtures are attached to and controlled by the overhead bridge. An accidental movement of the overhead bridge caused the payload bay door to flex for a short period of time.

Board functions include investigating the facts surrounding the mishap, determination of its probable cause, assessments of the possibility of a recurrence, and recommendations on corrective actions. A final report is due by mid-July.

# # # #

Posted: Mon, Jun 25, 1990 10:41 AM EDT Msg: JJJA-2891-7304
From: PAO.KSC
To: P, PAO.LOOP,
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF)
Subj: HEAT PIPE TECHNOLOGY RE-SEND

1. ~~Sylvia~~ SDP
2. Bill
3. ~~Sarah~~ SJ
4. Lee

Bruce Buckingham
407/867-2468

June 22, 1990

KSC RELEASE NO. 116 - 90

KSC MAKES USE OF SPIN-OFF HEAT PIPE TECHNOLOGY

Later this summer, Kennedy Space Center will get a taste of its own progress when spin-off technology is used to upgrade the Space Station Logistics and Resupply section of the Payload Support Building.

Under a contract awarded to Precision Mechanical, Inc., a Cocoa, Florida small business firm, heat pipe technology will be used in the addition of a new air conditioning system which will control the temperature and humidity in the Payload Support Building. KSC is the first NASA center to make use of this energy saving technology.

Heat pipes were initially used as an efficient cooling method for satellites in space. Later, through the efforts of the NASA Technology Utilization office, heat pipes were adapted to assist in the air conditioning and dehumidification of buildings on Earth.

Heat pipes eliminate the "re-heat" cycle used in conventional air conditioners for humidity control and adds a pre-cooling cycle to the main cooling pool.

Substantial amounts of energy are required to run inefficient conventional air conditioners which must "over-cool" the air in order to bring humidity down to acceptable levels. Heat pipes, however, cool the air before it enters the air conditioner and then decrease the relative humidity of the cooled air prior to it entering the room.

Heat pipes have coolants inside sealed tubes. These tubes

are placed on either side of the air conditioner -- in front of the warm air intake and after the cooled air out-flow. The liquid inside the heat pipe evaporators absorb heat from the in coming warmer air and passes the vapor into the condenser section of the pipes. The vapor then re-condenses inside the heat pipe and transfers the heat to the cold air supply coming out of the air conditioner, thereby lowering the relative humidity of the air out-flow.

-- more --

Because the relative humidity of the passing air is lower, rooms feel cooler even at the higher air temperatures. Thermostats can be adjusted and the air conditioners aren't required to operate as often.

Outside applications for heat pipe dehumidification began with the work of Khanh Dinh of Alachua, Fla. The Dinh Company was founded in 1983 to capitalize on heat pipe transfer technology. Dinh's proposal led to a working relationship with NASA to develop and refine the space technology.

Working under a contract with NASA, Dinh Company developed a line of heat pipe dehumidification systems that significantly increased the moisture removal capacity of conventional air conditioning systems. Such a system will be used in the Payload Support Building. Dinh has also introduced a line of stand alone heat pipe dehumidifiers for libraries and offices which offer double the efficiency of conventional dehumidification. This resulted in energy savings to users of 15 to 20 percent.

Technology for the use of heat pipes was recently inducted into the U.S Space Foundation's Space Technology Hall of Fame at Colorado Springs, Co., during the Sixth National Space Symposium.

Current applications of heat pipe technology include uses at Bob's Candies, Albany, Ga., and on the Alaskan pipeline.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

Karl Kristofferson
407/867-2468

For Release:
July 23, 1990

Release No: 134-90

Notice to Editors/News Directors

NEWS MEDIA COVERAGE FOR REUNION VISIT OF U.S.-SOVIET ASTP CREWS

News media coverage for the arrival and reunion visit of the American and Soviet Apollo-Soyuz Test Project (ASTP) crews will be as follows.

Crews Arrival

The ASTP crews are scheduled to arrive at Patrick Air Force Base at approximately 8 p.m., Wednesday, July 25, aboard the NASA 3 aircraft. Media representatives covering the arrival have two options.

(1) Media may go directly to the North Gate at Patrick AFB on State Road A1A, across from the Officers Club, where they will be met at 7:15 p.m. by a member of the Eastern Space and Missile Center Public Affairs Office. Departure from the North Gate in convoy to the NASA Hangar at Patrick is scheduled for no later than 7:30 p.m.

(2) The KSC News Center will provide media transportation by bus from the Complex 39 press site at 6 p.m., directly to the NASA Hangar at Patrick. Media should be at the press site no later than 5:30 p.m.

KSC Coverage

Media representatives covering the visit of the ASTP crews to the Kennedy Space Center on July 26 should be at the Complex 39 press site no later than 8:45 a.m. Bus transportation will be provided for three photo opportunities that morning: Firing Room 1 of the Launch Control Center, Pad B, and the ASTP Crews Press Conference in the press site auditorium at 11 a.m. Bus departure is scheduled for no later than 9:30 a.m.

-more-

The news media bus will leave ten minutes in advance of the scheduled departure of the ASTP crews from each location to allow time for camera setup at the next activity.

Press Conference

The ASTP Crews Press Conference at 11 a.m., July 26, will be carried live on NASA Select, with two-way question and answer capability from NASA Headquarters and other NASA centers. Audio only also will be provided on KSC's V-2 circuits, which may be dialed direct at 407/867-1220, -1240 and -1260.

Spaceport USA

The ASTP crews will narrate a mission film of their flight at the Spaceport USA Galaxy Center, beginning about 5 p.m. This event is open to the public. Media representatives wishing to cover this activity can drive directly to Spaceport USA or travel by van from the Complex 39 press site. The van will leave the press site at 4 p.m., arriving at Spaceport USA at approximately 4:20 p.m.

News Center Hours of Operation

The Complex 39 press site will be open from 8 a.m. to 6 p.m. on July 25, and from 7 a.m. to 6:30 p.m. on July 26.

Badging

Media accreditation will be required for coverage of the ASTP crews visit to KSC on July 26, and for transportation from the KSC press site to Patrick AFB on the evening of July 25 to cover the ASTP crews arrival. Media with permanent badges may drive directly to the KSC press site via Gate 2 (SR-3) or Gate 3 (U.S. Highway 1). Those without permanent badges should call the KSC News Center at (407) 867-2468 for accreditation.

Entry requirements for media driving directly to the Patrick AFB North Gate to cover the arrival of the ASTP crews on the evening of July 25 will be handled by Eastern Space and Missile Center Public Affairs representatives on hand at that location.

Mission Background

The ASTP mission, history's first international joint manned space flight, was conducted July 15-24, 1975, with link-up of the Apollo and Soyuz spacecraft occurring on July 17-19. American crew members were Tom Stafford, Deke Slayton and Vance Brand. Soviet crew members were Aleksey Leonov and Valery Kubasov.

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Lisa Malone
Kennedy Space Center, Fla.
(407) 867-2468

July 24, 1990

KSC Release No. 135-90

BOARD APPOINTED TO INVESTIGATE DAMAGED SHUTTLE THRUSTER

Center Director Forrest McCartney has appointed an investigation board to examine the circumstances surrounding damage to an orbital maneuvering system (OMS) pod thruster at the Hypergolic Maintenance Facility's (HMF) east test cell located in KSC's Industrial Area.

On July 18, 1990, one of the 14 primary thrusters on the shuttle Discovery's right OMS pod was being secured in a test stand in the HMF checkout cell for inspections of a leaking dynatube. The thruster, mounted in a piece of ground support equipment, fell from a work platform onto a lower platform, creating an impression on the shroud between the power head and nozzle approximately 4 1/2 inches long by 1/4 inch deep by 1/2 inch wide. The weight of the thruster and nozzle is about 30 pounds. The right pod is being prepared for shipment to the Orbiter Processing Facility for installation on Discovery for the STS-41/Ulysses launch scheduled for October.

The damaged thruster is being prepared for shipment to the vendor, Marquardt Co., Van Nuys, Calif. for repairs. In the meantime, a spare thruster is being prepared for installation on the pod.

Thomas Cain, III, Chief, Operations Support Branch, Center Support Operations, has been named to chair the board. The two other members of the board are Craig Baker, mechanical and fluids system engineer, Mechanical and Structures Section, STS Payload Operations Directorate; and Mickey Riddle, NASA Site Manager at Launch Pad 39-B. Ex-officio board members are Patricia Lynn, safety advisor; Douglas Hendriksen, legal advisor; and Lisa Malone, public affairs advisor.

- more -

Board functions include investigating the facts surrounding the mishap, determination of its cause, assessments of the possibility of a recurrence, and recommendations for corrective action. A final report is due by the end of August.

- end -

Lisa Malone
(407) 867-2468

July 31, 1990

KSC Release No. 133-90

MISHAP INVESTIGATION BOARD COMPLETES REPORT ON IMPROPER RAISING OF DISCOVERY'S PAYLOAD BAY DOOR

Movement of an overhead access bridge while connected to a payload bay door was the primary cause cited by an investigation board for the improper raising of a payload bay door on the Space Shuttle Orbiter Discovery on June 4, 1990. Contributing causes to the improper raising included failure to follow the approved procedure, deficient work control systems to preclude bridge movement while connected to a payload bay door, and deficient work scheduling.

Discovery was located in Orbiter Processing Facility bay 1 undergoing pre-launch preparations for its next mission, STS-41/Ulysses, when the incident occurred. The aft portion of Discovery's right hand payload bay door was raised improperly approximately 31 to 33 inches. The right hand payload bay door Zero-G system, which is attached to overhead access bridges, was configured to support a scheduled door closing operation when an overhead access bridge was moved for another use, causing damage to support equipment and improper raising of the payload bay door.

A pulley and wire cable used in the Zero-G system were damaged in the process. The cost of the mishap, including inspection of the payload bay door and repair of the support equipment, was estimated at $120,000.

The board, which was chaired by Paul Myers, technical assistant to KSC's director of Engineering Development, was not charged with determining any damage to flight hardware. However, thorough inspections have been performed and it has been determined that there was no damage to Discovery's payload bay door from this mishap.

- more -

Board members included Hector Delgado, Systems Assurance Office, Reliability and Quality Assurance Directorate, who served as deputy chairman; Charles Stevenson, chief, Orbiter Mechanical Systems Branch, Vehicle Engineering; Tim Yang, facilities systems engineer, Mechanical and Electrical Systems Branch, Center Support Operations Directorate; and Laurie Walls, orbiter ground support equipment and facilities engineer, Structures, Handling and Access Systems Section, Vehicle Engineering. Elliot Kicklighter of the National Space Transportation System Operations office was the appointed Level II observer. Ex-officio Board members included Elizabeth Gruhler, safety advisor; Douglas G. Hendriksen, legal advisor and Lisa Malone, public affairs advisor.

- end -

Editor's Note: A copy of the board's report is available for review in the newsroom at the Kennedy Space Center.

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Mark Hess
Headquarters, Washington, D.C.
(Phone: 202/453-4164)

Aug. 1, 1990

Patricia Phillips
Kennedy Space Center, FL.
(Phone: 407/867-2468)

KSC RELEASE 137-90

KSC OFFICIALS RELEASE BID PACKAGE FOR CONSTRUCTION OF NEW SPACE STATION PROCESSING FACILITY

Kennedy Space Center officials have reached a major milestone in preparations for Space Station Freedom work at KSC with the release of a bid package for construction of the new Space Station Processing Facility (SSPF).

The solicitation package details the requirements a bidder must meet in the construction of the new facility. The SSPF will be built in a "phased construction" plan extending over three years.

As part of its annual Construction of Facilities request, NASA will ask for a total of $88 million for the facility. The SSPF, which will be be located in KSC's Industrial Area, has been designed especially for the processing of Space Station Freedom manned base hardware components.

To accommodate items from unpressurized hardware to pressurized modules, the SSPF will include both a high and "intermediate" bay, and various laboratories. In addition to Space Station Freedom manned base hardware components, the facility will also process scientific payloads from around the world.

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"The completion of design and the issuance of the invitation for bid marks a big step forward in KSC Space Station work," said Dick Lyon, Manager, KSC Space Station Projects Office. "A lot of hard work has gone into moving toward this step, and we are looking forward to seeing the actual construction get underway."

Prospective bidders have until Oct. 15 to respond. Procurement officials anticipate an award by Jan. 2, 1991, with construction to begin soon thereafter.

A pre-bid conference for prospective bidders is scheduled for 10 a.m. Sept. 6 in the KSC Training Auditorium. A tour of the SSPF location will be included. Companies interested in obtaining the bid package or attending the conference should write to NASA, SI-PRO-31, Kennedy Space Center, Fl, 32899.

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

Lisa Malone
407/867-2468

For Release:
Sept. 7, 1990

KSC Release No. 154-90

Notes to Editors/News Directors:

STS-41 COUNTDOWN DEMONSTRATION TEST SCHEDULED FOR SEPT. 11

One of the most significant prelaunch tests, a full dress rehearsal for the STS-41 launch countdown, is planned next week at Kennedy Space Center. The Terminal Countdown Demonstration Test (TCDT), involving the STS-41 astronaut crew, will culminate with a simulated main engine ignition and cutoff at 11 a.m. EDT, Tuesday, Sept. 11.

The five-member flight crew is scheduled to arrive at KSC's Shuttle Landing Facility Sunday at 12:30 p.m. to participate in the practice countdown. The STS-41 crew is comprised of Commander Richard Richards, Pilot Robert Cabana, Mission Specialists William Shepherd, Bruce Melnick and Thomas Akers.

While here, the crew will be trained in emergency egress procedures at Launch Pad 39-B including a practice drive in the M113 tracked vehicle. They will become familiar with the location of breathing apparatus at the pad, other emergency equipment and the slidewire basket system.

One of the routine activities for the crew while here for the TCDT is a status briefing by shuttle and payload engineers. The briefings, scheduled the day before the test, are designed to bring the flight crew up to speed on the status of the vehicle, payload, processing operations and any unresolved issues.

Objectives of the test include establishing timelines and validating sequences involved in the flight crew suit up and entry into the orbiter's cockpit. The test also offers an occasion for the flight crew and the KSC launch team to work together in a launch day configuration. Inter-agency interfaces required to support the terminal countdown will be evaluated.

- more -

KSC FORM 2-160A (REV. 6/88)

The simulated countdown is set to begin at the T-24 hour mark on Monday at 8 a.m. Discovery will be powered up for the test and its onboard systems will be activated. Events in the countdown will be condensed or simulated to represent activities that occur during the actual launch countdown and/or to configure the orbiter for the test. Propellants will not be loaded into the external tank, the main engines will not be started and the boosters will not be ignited during this mock countdown.

The countdown will proceed to the T-3 hour mark and hold for two hours and 40 minutes. During the hold, the flight crew will be awakened and have breakfast. Also, the orbiter closeout crew will begin preparing Discovery's cabin for the flight crew's entry.

After a weather briefing, the flight crew will get into their flight suits and depart for the launch pad. The closeout crew will assist the astronauts in getting into the cockpit. Each crew member will establish communications with the orbiter test conductor in Firing Room 3.

Two 10-minute built-in holds are planned: at the T-20 minute will be halted at about the T-5 second mark at 11 a.m.

After a short debriefing, the flight crew will exit the cockpit quickly to practice an emergency escape while wearing the space suits. This training will take place on the 195-foot level of the Fixed Service Structure where the orbiter crew access hatch and the slidewire baskets are located.

Later that day, the flight crew will return to Houston for final mission preparations. They will return to KSC a few days prior to launch.

Discovery is targeted to be launched on its 11th flight in early October. The primary objective of the four-day mission is to deploy the Ulysses payload into orbit. Ulysses, a joint project between NASA/Jet Propulsion Laboratory and the European Space Agency, is designed to study the polar regions of the Sun.

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* Notes to editors outlining news media opportunities follows this news release.

Notes to Editors:

The News Center will open at 10:30 a.m. Sunday for the flight crew arrival. There will be a photo opportunity of their arrival at the Shuttle Landing Facility at 12:30 p.m. Sunday. Media representatives should be at the News Center by 11:30 a.m. for escort to the SLF.

A media opportunity on Monday is a brief question and answer session at the pad with the flight crew at 3:30 p.m. Media representatives should be at the News Center by 2:30 p.m. for escort to the pad.

The day of the test, photographers will be taken to the Operations and Checkout Building at 6:45 a.m. to photograph the crew walking to the astronaut van.

NASA Select programming of the test will begin at 6 a.m. EDT Tuesday. NASA Select can be accessed on the Satcom F-2R satellite, transponder 13, C-band.

Video tapes and still photos of flight crew activities will be available at the press site.

# # # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Lisa Malone
(407) 867-2468

Oct. 29, 1990

KSC News Release No. 176-90

HIGHLY INSTRUMENTED TANKING TEST SET FOR COLUMBIA ON OCTOBER 30

One of the most elaborate tanking tests ever conducted at KSC will be conducted on the Space Shuttle Columbia on Tuesday, Oct. 30 in an effort to find any leaks and ultimately clear the vehicle for launch later this year. Columbia's launch has been postponed several times this summer because of liquid hydrogen leaks.

Kennedy Space Center launch team members began final preparations for the test with a call-to-stations at 7 a.m. today. Team members are scheduled to begin the automatic loading sequence at about 11 a.m. Tuesday. The test is estimated to take several hours.

The Rotating Service Structure will be pulled away from the vehicle at about midnight tonight before tank loading operations. The launch danger area around the pad will be cleared of all personnel about 4 hours prior to loading the tank.

Only liquid hydrogen will be loaded into the orbiter's main propulsion system. Resources and personnel will be dedicated to finding any hydrogen leaks during this test and liquid oxygen will not be loaded into the tank or the orbiter's propulsion system.

This will be a thorough tanking test where engineers isolate various sections of the main propulsion system and three main engines while liquid hydrogen is flowing through the system at slow-fill and fast-fill rates. This type of diagnostic tanking will likely reveal any leakage.

Ten cameras have been positioned in Columbia's aft compartment to give managers a bird's eye view of the main propulsion system. This marks the first use of cameras in the shuttle's aft during tanking operations. The aft compartment has been heavily instrumented in an effort to pinpoint leaks should they occur. The aft will be purged with gaseous nitrogen as usual during tanking operations and any leaks would be seen in the form of liquid drops. In addition, managers will have the capability to inject carbon dioxide into the aft, changing the environment so that a leak would manifest itself as a vapor.

Special doors, made of a plexiglass type material called Lexan, were made to take the place of flight doors on the aft compartment during the test. Special data collection tubes are routed through the doors and into the aft. The tubes sample the environment during the test and send that information to test conductors in the firing rooms.

Several areas in the liquid hydrogen system will be bagged in an effort to pinpoint the exact location of any leak: the three main engine prevalves, the inboard fill and drain valve and the 17-inch disconnect.

About 17 hydrogen leak detectors and several flowmeters will be placed in various areas. Thermocouples will be used to detect leakage downstream of the valves. This information will be fed back in real time to engineers and test conductors involved in the test in firing rooms 1 and 2.

This will be the second tanking test for Columbia since the first launch attempt on May 29 when high concentrations of hydrogen were detected near the 17-inch disconnect and in the aft compartment.

After the first tanking test in June, officials decided to replace the 17-inch disconnect assemblies on both the orbiter Columbia and its external tank. Columbia was rolled back to the Vehicle Assembly Building June 11, demated from the external tank and transferred to the Orbiter Processing Facility. A new disconnect from the shuttle Endeavour was installed on Columbia and the orbiter and tank were remated.

Columbia was rolled out to Pad 39-A on Aug. 9 for launch. Launch was scrubbed on Aug. 30 to allow the replacement of an electronic box for the Broad Band X-Ray Telescope. Launch was scrubbed again Sept. 5 because of higher than allowable concentrations of hydrogen in the aft compartment. Another attempted launch occurred on Sept. 17, but again hydrogen was detected in the aft compartment.

A board was appointed to find the cause of the leak. At the board's direction, several main propulsion system seals were replaced, many leak tests have been performed and various joints have been retorqued. In addition, the team has made a thorough analysis of data collected from the tanking tests and reviewed all work performed on the orbiter since the last flight earlier

The STS-35 vehicle was moved from Pad 39-A to 39-B on Oct. 8, following the successful launch of Discovery on Mission STS-41. The next day, Columbia was transferred back to the Vehicle Assembly Building because of adverse weather which prevented productive work in the aft compartment. On Oct. 14, the vehicle was rolled out to Pad 39-B where extensive work to find the source of the leak has been ongoing leading up to today's test.

Officials believe most, if not all, of the leakage has been corrected. However, this test, using super cold hydrogen will indicate any other areas of concern.

Procedures for the test will follow those developed for previous tanking tests.

After the test, liquid hydrogen will be drained from the tank, residual liquid hydrogen will be boiled off and the tank will be inerted. Access to the vehicle will be established during the last hours of tank inerting. Engineers will evaluate data collected during the test.

Columbia and the Astro-1 payload are scheduled to be launched on Mission STS-35 in December, pending the outcome of the tanking test. A 10-day astrophysics mission is planned to round out the year with a total of 6 Space Shuttle launches.

# # # #

Lisa Malone
(407) 867-2468

Oct. 30, 1990

KSC Release No. 177-90

ENDEAVOUR SPACE SHUTTLE MAIN ENGINE ARRIVES AT KSC

One of the three main engines for NASA's newest shuttle orbiter, Endeavour, is scheduled to arrive at Kennedy Space Center today. This engine, like Endeavour, features many upgrades, and is the first piece of flight hardware to arrive at KSC for the fifth orbiter.

Engine number 2032 has passed all acceptance testing at Stennis Space Center, near Bay St. Louis, Miss., and is being shipped by truck to KSC. Upon arrival, the engine will be uncrated and inspected in the space shuttle main engine shop located in the Vehicle Assembly Building. The engine will be stored in the engine shop until Endeavour arrives in May of next year.

Some of the improved features on this engine are a new controller with a larger memory capacity and improved wire harnesses.

Press representatives need to be at the KSC Press Site by 1:30 p.m. tomorrow for a viewing of the engine. John Plowden, Rocketdyne Launch Site Director, will be available to answer questions.

# # # #

KSC Release No 181-90

Nov. 14, 1990

WORK ON HYDROGEN DISPERSION SYSTEM COMPLETED ON MOBILE LAUNCHER PLATFORM

Following a series of liquid hydrogen leaks on the orbiters Columbia and Atlantis this past summer, an external tank/orbiter umbilical hydrogen dispersion system was recently designed and installed on one of three mobile launcher platforms at Kennedy Space Center.

The system, now installed on mobile launcher platform number two in the Vehicle Assembly Building, will also be installed on the remaining two MLPs following their current assignments to support Space Shuttle missions this year.

The dispersion system is designed to provide a nitrogen rich air flow around the hydrogen 17-inch disconnect line which is located between the orbiter and external tank. The system consists of a supersonic gaseous nitrogen nozzle, a nozzle support pipe, a blast cover, and a 2-inch gaseous nitrogen supply line.

The dispersion system was designed to reduce oxygen present and disperse hydrogen concentrations from a potential leak of up to 17,000 scim (standard cubic inches per minute) or 10 scfm (standard cubic feet per minute). The system will provide sufficient air flow around the 17-inch disconnect to prevent hydrogen concentrations from exceeding four percent. Hydrogen concentrations greater than four percent in an oxygen-rich environment present a potential hazardous situation.

The nozzle on the dispersion system is made of stainless steel and was designed to provide for a supersonic volumetric flowrate of 750 scfm at 125 psi.

Firing room personnel will be able to control the dispersion system from the Launch Control Center. From the LCC, varying flow rates of the dispersion system and nozzle adjustments can be operated remotely. The system is scheduled to be available for use during the launch of Discovery on Shuttle mission STS-39.

NASA and Boeing Aerospace Operations were responsible for the design and construction of the system's nozzle components. Engineers for NASA and the architect and engineering firm of Reynolds, Smith and Hills were responsible for the design of the structural supports for the nozzle and supply line.

# # # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

For Release

Karl Kristofferson
Kennedy Space Center, Fla.

(Phone: 407/867-2468)

November 28, 1990

KSC RELEASE: 189-90

SPACE SHUTTLE "AMBASSADOR" TO BE DISPLAYED AT SPACEPORT USA

Holiday visitors to NASA Kennedy Space Center's Spaceport USA in Florida have a special treat in store -- an opportunity to explore the inside of a Space Shuttle orbiter. The "Ambassador", a full-scale replica of NASA's manned spaceplane, will be on display for 4 months, beginning in mid-December, with an option to extend through mid-September of 1991.

Guests entering Ambassador will have an astronaut's view of the cargo bay, the crew quarters and the flight deck. A video display of Space Shuttle operations also will be available.

Originally constructed for showing at the Expo '92 World's Fair in Seville, Spain, the owners first wanted to premiere Ambassador to the public at Spaceport USA. Ambassador's name is derived from the fact that the replica is destined for extensive international showing.

The replica will be open to visitors during normal Spaceport USA operating hours, usually 9 a.m. to dark, and will be fully lighted for viewing after dark for extended evening operations.

Would-be space travelers would be wise to make plans to visit Spaceport USA by early April of next year to be assured of this rare opportunity for an inside look at the world's only full-scale replica of a Space Shuttle.

Built by an Apopka, Fla. firm for Irvin & Kenneth Feld Productions, Inc. of Vienna, Va., the Shuttle replica will be displayed at Spaceport USA under a mutual agreement between the latter and TW Recreational Services Inc., which manages and operates Spaceport USA for NASA under a concessionaire contract.

- end -

Lisa Malone
(407) 867-2468

January 8, 1991

KSC Release No. 5-91

KSC NAMES TWO SPACE SHUTTLE FLOW DIRECTORS

Kennedy Space Center recently named flow directors for the Space Shuttle Orbiters Discovery and Endeavour. John J. "Tip" Talone has been named as the flow director for NASA's newest orbiter, Endeavour, which is undergoing construction in Palmdale, Calif. John C. "Chris" Fairey has been chosen as flow director for Discovery.

As flow directors, Talone and Fairey are responsible for the management of all activities, government and contractor, associated with processing the orbiters for each assigned mission. Responsibilities extend to all areas of flight hardware processing to assure timely Space Shuttle vehicle processing and achievement of schedule milestones.

Directing the operations of a Shuttle isn't new for Talone, who previously served as flow director for Discovery. Talone is now responsible for overseeing operations on Endeavour during the final months of construction, including its delivery to KSC this year. "We're looking forward to the arrival of Endeavour in early May and to begin processing it for its first mission," said Talone who recently visited the manufacturing plant in Palmdale, Calif. "Even though the first flight of Endeavour won't be until next year, we will have our work cut out for us here at KSC with the 'first-flow' systems checkout operations required for a new Shuttle," he said.

- more -

Other positions Talone has held at KSC include support requirement engineer, Saturn 1 and Saturn 1B; and launch vehicle test conductor for Saturn 1B and Saturn V on the Apollo, Skylab, and ASTP programs. He also served as Launch Pad 39-A site manager for Shuttle Activation and as integrated operations manager for

Shuttle Ground Operations.

Fairey's previous positions and duties at KSC include branch chief, Flight Element Project Office; Shuttle Project Engineer for 15 Shuttle missions; project manager for the Kennedy Avionics Test Set (KATS) development; technical assistant to the Guidance and Digital Systems Division of Shuttle Engineering; operations section chief for the Shuttle Launch Processing System Checkout, Control and Monitor Systems (CCMS); and lead station engineer and test conductor for the Facilities and Environmental Measurement Station in support of Apollo, Skylab, and ASTP programs.

"My past experience provides a good background for being a Shuttle flow director. I'm looking forward to the new challenges of this job and to the first launch of the year with Discovery," said Fairey.

Discovery's next flight is scheduled for March 1991 and Endeavour's first flight is planned for May 1992.

# # # #

Posted: Mon, Mar 4, 1991 11:31 AM EST Msg: FJJB-2935-1316
From: PAO.KSC
To: P, PAO.LOOP,
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
JTCONWAY, JHMORGAN, PTBREAKFIELD, JHAWLEY,
RSCHUILING
Subj: CELSS SOYBEAN HARVEST

Mitch Varnes
407/867-2468

March 4, 1991

KSC Release No. 24-91

Note to Editors/News Directors

CELSS SOYBEAN HARVEST SLATED FOR MARCH 5 AT KENNEDY SPACE CENTER

Another milestone in NASA's Controlled Ecological Life Support System will be reached on Tuesday, March 5 when biologists take shears and measuring sticks to soybean crops grown without soil inside a computer-controlled biomass chamber.

The harvest will be the third crop of soybeans grown in the bubble-shaped biosphere, which was constructed from test hardware used in the Mercury and Gemini programs. Using a specially developed environment controlled by computers, NASA scientists are learning how to deliver nutrients, monitor growth and gaseous

outputs and produce healthy plants with a minimum amount of human intervention.

CELSS is a futuristic program being developed for a time when astronauts will need to grow much of their own foods. The program will prove imperative and invaluable for future long-duration space missions and ventures into planetary habitats. The goals of CELSS researchers are to learn how to use a controlled environment to grow food, generate oxygen and recycle waste products to fertilize the plants.

News media wishing to cover the soybean harvest should be at the KSC Press Site no later than 9:30 a.m. for transportation to the CELSS area.

KSC Release No. 32-91 March 14, 1991

NOTICE TO EDITORS/NEWS DIRECTORS

GROUNDBREAKING FOR KSC [redacted] SLATED FOR MARCH 26

KENNEDY SPACE CENTER, FLA. -- A groundbreaking ceremony for NASA's Space Station Processing Facility (SSPF) will be held at 10 a.m., Tuesday, March 26.

Featured speakers for the ceremony include NASA's Associate Administrator for Space Flight Dr. William B. Lenoir, KSC Director Forrest S. McCartney, Space Station Freedom Director Richard Kohrs, KSC Space Station Project Office Manager Dick Lyon and KSC Director of Engineering Development Walt Murphy. The ceremony will take place at the construction site in the KSC Industrial Area, just east of the Operations & Checkout Building.

The SSPF will be a KSC-operated facility occupied by about 1,000 NASA and contractor employees. The three-story SSPF will include communications and electrical control areas, laboratories, logistics staging areas, operational control rooms, office areas and a cafeteria. The SSPF will have over 63,000 square feet of dedicated payload processing space, which includes a high bay and intermediate bay. A 5,000-square-foot airlock will be adjacent to the primary processing area. Both the airlock and processing area will be 100,000 parts-per-million-rated clean rooms.

The SSPF is the biggest new construction facility undertaken at KSC since the Apollo era.

The building was designed by Jacobs Engineering Group, Inc. of Lakeland, Fla. and will be constructed by Metric Constructors, Inc. of Tampa, Fla. The building's cost is $56,215,000.

-more-

News media wishing to cover the ceremony should be at the KSC News Center by 9:15 a.m. Tuesday, March 26, for transportation to the ceremony site. Media representatives with permanent credentials may drive directly to the News Center. Those who require access badges should contact the News Center at 407/867-2468 to arrange access.

# # # # #

NOTICE TO THE PRESS

KSC Public Information Office - 1 p.m. March 21, 1991

Note to the News Media:

While being processed in the Operations and Checkout Building High Bay, the Spacelab Life Sciences (SLS-1) module rests in a stationary test stand on three trunnions, not in a center-of-gravity balanced state.

During a normal lifting operation, a strong-back structure and lifting links are secured to the three trunnions. The load is put under tension before hold down caps on the three trunnions are released.

At about 10:15 a.m. this morning, during the preparations for lifting to place the module in the canister for transfer to the Orbiter Processing Facility on Saturday, a technician prematurely removed the hold down cap on one trunnion, causing the module to tilt slightly (about 18 inches) by rotating on two trunnions. This was prior to attaching the strong back for lifting.

Technicians in the area immediately pulled the module down by hand and relocked it in place. The only damage assessed at this point is scuffing of one corner of a thermal blanket, believed to have been caused by contact with a cable tray on the test stand.

A detailed assessment is underway to determine if any other damage resulted.

Information Contact: Mitch Varnes, KSC PIO, 407/867-2468

Bruce Buckingham
407/867-2468

June 13, 1991

KSC RELEASE NO. 73 - 91

MODIFICATIONS SCHEDULED TO BEGIN ON LAUNCH PAD 39-B

Launch pad 39-B will be taken off-line for the remainder of the year as workers perform modifications to the structure and associated payload handling facilities.

Pad 39-B, one of two KSC shuttle launch facilities is in need of repairs and refurbishment. Work crews are scheduled to spend the better part of the next six months seeing that the work is performed in time to support the first launch of the space agency's newest orbiter, Endeavour, early next year.

The work on pad 39-B was designed to coincide with the decision to send the orbiter Columbia to the Rockwell facility in Palmdale, Calif., for modifications.

"Columbia's move to California provided the time to work on the pad," said Mickey Riddle, NASA's pad leader for 39-B. "We are making modifications to the facility during the time we have a window to do so," he said.

Once Columbia is delivered to Palmdale in August of this year, there will only be two orbiters, Atlantis and Discovery, in the active launch processing flow. Working with one less pad is expected to have minimal impact on the agency's launch schedule for the remainder of the year.

Launch pad 39-A will remain fully operational and support the next five scheduled Space Shuttle missions.

Pad 39-B is expected to be back on line in time for Endeavour's first launch. Endeavour is currently scheduled to rollout to the pad in February 1992.

-- more --

Several changes are in store for pad 39-B as it is brought up to generally the same standards at pad 39-A. Lockheed Space Operations Company will implement the modifications and award 15 different sub-contracts to about eight to 10 companies.

Contracts will be awarded to perform about 50 modifications to the structures and processing equipment, improvements to the environmental control system and work on the hypergolic servicing system. Work will also be performed in the payload changeout room involving the CAPS, or the Clean Access Platform System, and contamination control improvements to the payload handling areas.

Other modifications include work on the rotating service structure, hardware and electrical systems improvements, and structural corrosion control. This period will also provide an opportunity to make improvements to the safety and overall efficiency of the facility.

Estimated cost of the modifications is about $3.3 million.

Not launching from pad 39-B this year will also offer a by-product to the local residents -- Playalinda Beach will be open for most of the summer. The beach, located on the northern boundary of KSC, normally closes when a vehicle is on pad B due to security reasons.

With shuttles being launched for the rest of this year only from pad 39-A, located further to the south, the beach will not close until three days before launch. The next launch scheduled is that of Atlantis on mission STS-43, from pad 39-A, in late July.

# # # #

Bruce Buckingham
407/867-2468

June 21, 1991

KSC RELEASE NO. 76 - 91

ATLANTIS BREAKS RECORD FOR OPF PROCESSING FLOW

When the orbiter Atlantis rolled over to the Vehicle Assembly Building from the Orbiter Processing Facility (OPF) earlier this week, it bested the post-Challenger record for shortest time spent in the OPF by 10 days.

Atlantis first entered OPF bay 2 on April 19, 1991, following completion of the STS-37 mission. It spent only 59 days there being processed for its next Shuttle mission, STS-43, targeted for launch in late July of this year.

The previous OPF record also was held by Atlantis during processing for mission STS-36.

"We have had an extremely good OPF flow," said Conrad Nagel, NASA's vehicle flow director for Atlantis. "The hardware was very good to us and we had very few problems during processing."

Originally, managers had hoped for a 65 day flow at best, but the relatively small number of problems encountered allowed workers to get a jump on the major tasks at hand and shorten the schedule.

The Task Team Leader concept also was a contributing factor. Under this program, specific individuals are responsible for coordinating activities, getting the necessary paper work ready prior to the scheduled job, and tracking the work until the job is complete.

"The program was a real asset. It made a definite impact to our processing flow," Nagel said. "Every day when we came out of the scheduling meeting we all knew what had to be done during the next 24 hours. We could go plan our work and be sure it was going to be accomplished."

-- more --

The level of excitement grew over the past two or three weeks as workers and managers both realized the significance of what was about to happen. "It jelled our team a little bit more," Nagel said. "Success always does."

In reality, Nagel admitted, there is always the need to anticipate a certain number of problems in processing the orbiter for launch. But with this flow, everything was well under control. With the few problems that did occur, workers were able to focus on them and not hold up the rest of the scheduled work.

"We proved 59 days is very achievable. Once you have done it, it's not as difficult the next time around. We gained a lot of confidence here and we demonstrated to ourselves that we can do this job efficiently and do it consistently."

Nagel said there are still improvements to be made.

"I feel we can clean up the flow even more. We can roll out with not only the shortest turn around possible, but also with all the work completed, all the paper closed, and with all the requirements met. I don't want to come out of the OPF on a wing and a prayer," Nagel said. "I want the spaceship to come out of the OPF as it is suppose to come out -- ready to fly."

# # # #

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:
July 11, 1991 5:30 p.m.

STATEMENT FROM SHUTTLE DIRECTOR ROBERT CRIPPEN REGARDING KSC LANDING

Shuttle Director Robert Crippen announced today that KSC will be the primary landing site for STS-43. "This decision has been briefed to, and concurred with, by management officials at all levels within NASA. The KSC landing is going to be approached in a conservative manner using very restrictive flight rules to ensure the safety of the vehicle and crew. Consequently, there is a high probability that the landing could be at Edwards Air Force Base and the program is prepared to handle a landing at either site."

####

Bruce Buckingham
407/867-2468

July 15, 1991

KSC RELEASE NO. 84 -91

AIRSPACE, BRIDGES AND WATERWAYS RESTRICTIONS WILL BE IN EFFECT FOR LAUNCH OF ATLANTIS ON SPACE SHUTTLE MISSION STS-43

During preparations prior to Shuttle launches and immediately following liftoff, a number of restrictions are in effect around Kennedy Space Center. The launch of Atlantis on mission STS-43 is targeted to occur at 10:54 a.m. EDT, July 23, 1991.

Listed and described below are restrictions that apply to pilots, boaters and motor traffic crossing bridges leading to KSC.

KSC AREA AVIATION RESTRICTIONS

The airspace immediately surrounding Kennedy Space Center will be limited to official aircraft only and will be off-limits to general aviation pilots prior to and during the launch of the Space Shuttle Atlantis on mission STS-43.

NOTAMS must be checked by pilots prior to flights near the KSC area. Pilots are warned that violations of restricted airspace may result in serious penalties, including suspension or revocation of pilot privileges.

Official aircraft supporting the launch will be in the air. Pilots must be aware that wandering into a restricted area is not only forbidden, but will also create a safety hazard to support aircraft and the errant pilot.

Anyone wishing to view the launch from the air should stay well west of the Indian River. Pilots should be advised that the airspace in that area is expected to be extremely congested with both controlled and uncontrolled aircraft.

Pilots should also be aware of the solid rocket booster (SRB) exhaust cloud that occurs after launch. They should stay at least five miles away from that cloud, even if it drifts out of the restricted area. Research aircraft will be flying into and out of the cloud, and visibility will be limited.

-- more --

In general, the airspace restrictions cover a variety of air ranges from now through launch. In addition to the normal restrictions over KSC and Cape Canaveral Air Force Station, the launch will require that all private aircraft stay out of an area roughly bounded by the west side of the Indian River on the west, the Trident Basin (State Road 528 area) on the south, slightly north of Haulover Canal, and three miles out into the Atlantic on the east. The restrictions are "surface-to-unlimited." These launch-specific restrictions begin three hours before launch.

Pilots should consult the most recent edition of the Jacksonville Sectional Aeronautical Chart. In addition, they should contact the St. Petersburg Flight Service Station at 1-800-99-27433 (1-800-WX-BRIEF). Advisories will be available from the Patrick Approach Control (VHF 134.95 megahertz), Space Center Executive Airport Tower (TIX) (VHF 118.9 megahertz), or the NASA Tower (128.55 megahertz).

Pilots should also refer to the current Patrick Air Force Base release on restricted airspace.

BRIDGES CONTROLLED FOR LAUNCH

The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch period of the Space Shuttle Atlantis on mission STS-43.

Bridges affected by the launch requirements include:

-- Canaveral Harbor Barge Canal (State Road 401, south of Cape Canaveral Air Force Station Gate 1);

-- Indian River Causeway west, a.k.a. NASA Causeway (Intracoastal Waterway at Addison Point);

-- Merritt Island Barge Canal (Merritt Island State Road 3);

-- Haulover Canal Bridge (State Road 3, north of KSC).

Restraints on bridge openings for boat traffic begin three hours before launch. The bridges may be opened for 5 minutes at the following points in the launch countdown: T-180 minutes, T-150 minutes, T-120 minutes, T-90 minutes, and T-65 minutes.

Bridges will remain closed to boat traffic until 90 minutes after liftoff (T+90). They may then open for 5 minutes at T+90 minutes, T+120 minutes, and T+150 minutes. Bridge operations will return to normal at three hours (T+180 minutes) after launch.

Should the Shuttle orbiter be required to perform a Return to Launch Site (RTLS) landing at KSC, all bridges would remain closed to boat traffic from 45 minutes before landing to one hour after landing.

-- more --

KSC AREA BOATING RESTRICTIONS

Waterways and boating near the Kennedy Space Center will be strictly controlled prior to and during the launch of the Space Shuttle Atlantis on the STS-43 mission.

Safety and security requirements, including U.S. Air Force Range Safety impact limit lines, will go into effect as early as three days before launch. Other requirements will be phased into effect through sundown the night before launch. A general description of the restricted areas follows.

Banana River: Security limits begin at the Banana River Barge Canal south of KSC at the State Road 528 crossing and extend north. This restriction goes into effect at sundown the night before launch.

Atlantic Ocean: Beginning at sundown the night before launch, a general exclusion zone will be in effect three miles offshore from the Haulover Canal, near the north end of KSC, to the entrance of Port Canaveral on the south end of KSC. Four hours prior to launch, all ocean-going traffic will be restricted from entering an area measured from five miles north and south of the pad, and extending 30 miles east into the ocean. Pad 39-A is located at latitude 28 degrees, 36 minutes, 33 seconds north; longitude 80 degrees, 36 minutes, 15 seconds west. An additional three mile wide exclusion zone will be extended eastward through the projected flight path of the shuttle.

Mosquito Lagoon: This area south of the Haulover Canal is off limits to all boats beginning at dusk the night before launch.

Indian River: Restrictions apply from the NASA Causeway north to the Haulover Canal and east of the Indian River's main channel. Restrictions begin at sundown the night before launch.

All boating restrictions will be lifted approximately one hour after launch.

The U.S. Coast Guard, the U.S. Fish and Wildlife Service, and KSC security forces share responsibility for enforcing the boating guidelines.

# # # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

For Release

July 17, 1991

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NOTE TO EDITORS: N91-51

MILA TRACKING STATION TO HOST OPEN HOUSE FOR TDRS-E LAUNCH

In association with the launch of Atlantis and the TDRS-E satellite, a working lunch and open house for news media representatives will be held at the Merritt Island Launch Area (MILA) Tracking Station at the Kennedy Space Center, Fla., on Monday, July 22 at 11:00 a.m. (EDT).

During the working lunch, a presentation on the operation of the station will be given by the MILA station director. A tour through the operational areas will follow.

News media representatives wishing to attend the tour will depart the press site by special bus immediately following the STS-43 commercial payloads briefing, and will return to the press site at 12:50 p.m.

MILA, part of the Goddard Space Flight Center's Tracking and Data Network, is responsible for astronaut voice, telemetry, commands, ranging and television support for the Space Shuttle. The station also is used for prelaunch communications testing of Shuttle payloads and communication systems and as a communication link with the Tracking and Data Relay Satellite System.

- more -

The Jet Propulsion Laboratory's (JPL) MIL-71 ground station is co-located at the facility. The station allows JPL communications interface during prelaunch testing and countdown for spacecraft requiring support from the Deep Space Network. Both facilities are operated by Bendix Field Engineering Corp., a subsidiary of Allied-Signal Aerospace, Co., Columbia, Md.

Should launch be rescheduled later than July 23, this event will occur at the same time on launch minus one day (L-1).

-end-

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Lisa Malone
407/867-2468

August 7, 1991

KSC News Release No. 94-91

ENDEAVOUR READY FOR FIRST POWER UP TESTS

Electrical power will flow through the systems of the orbiter Endeavour this week for the first time since the vehicle arrived at KSC. This significant event kicks off major testing required of each new orbiter prior to launch.

"We're happy to get started on processing Endeavour for its first flight. We've worked hard to schedule all the required tests and the team is ready," said Tip Talone, Endeavour's flow director.

NASA's newest orbiter arrived at Kennedy Space Center's Shuttle Landing Facility atop the new 747 Shuttle Carrier Aircraft on May 7. Endeavour was temporarily located in high bay 2 of the Vehicle Assembly Building (VAB) until July 25 when it was transferred to Orbiter Processing Facility bay 1.

While in the VAB, several major components were installed, including the liquid hydrogen 17-inch disconnect, the ammonia boiler, the flash evaporator and the external tank door drive mechanisms. Work in the VAB focused on preparing the vehicle for power up testing in the OPF. The forward reaction control simulator was removed in the VAB.

Last week, the mock left and right orbital maneuvering system pods were removed from Endeavour and installed on Columbia for its ferry flight to Palmdale, Calif.

"First flow" tests of a vehicle, to be performed during Endeavour's planned seven-month stay in the OPF, are the most rigorous an orbiter will ever be put through. Extensive integrated tests and checks of each system will validate the operation of the vehicle.

- more -

KSC FORM 2-160A (REV. 5/88)

Also in the OPF, several major vehicle components will be installed: the three new main engines featuring upgrades that include new controllers, the forward reaction control system, and two orbital maneuvering system (OMS) pods. For the first time, KSC's processing team will install the new drag-chute on an orbiter. Endeavour is the first orbiter outfitted with the drag chute pod.

Stacking of the solid rocket boosters for Endeavour's flight is tentatively scheduled for the November/December time frame. Current plans show mating the external tank to the boosters early next year.

Once the orbiter is completely outfitted and its systems fully tested, it will be towed to the VAB for mate with its external tank and solid rocket boosters. This milestone to launch is currently scheduled for mid-February. Rollout to the launch pad is planned about a week later.

A Flight Readiness Firing, required of all new vehicles, is tentatively scheduled for early March. While bolted to the launch pad, the orbiter's three main engines are fired for approximately 20-seconds. Endeavour will be unmanned for this static test. Test objectives include validating the integrity of the new orbiter's systems and evaluation of the main propulsion system performance and propellant delivery systems.

Other routine tests and operations also will be performed while Endeavour is at the launch pad including a Terminal Countdown Demonstration Test planned in March.

Endeavour's maiden voyage, STS-49, is planned in April 1992 with a flight crew of seven. The spectacular seven day mission will be highlighted by a space walk to attach an upper stage to reboost an Intelsat satellite. This satellite was stranded in an inoperable orbit following launch aboard a commercial Titan 3 rocket last March.

# # # #

** TOTAL PAGE.02 **

Bruce Buckingham
407/867-2468

Sept. 16, 1991

KSC RELEASE NO. 113 - 91

DISCOVERY SCHEDULED TO LAND AT KSC

Landed at EAFB, CA

The orbiter Discovery is scheduled to make the first planned nighttime landing at Kennedy Space Center at the conclusion of its current STS-48 mission, which began Sept. 12.

Landing of Discovery at KSC's Shuttle Landing Facility (SLF) is slated for 2:06 a.m. Eastern Time, Wednesday, Sept. 18, on orbit 80.

During descent, Discovery will enter Florida airspace north of Jacksonville, Fla. over the Florida/Georgia border town of Folkston, Ga. Discovery will then follow Florida's east coast to land at KSC.

The orbiter will pass near Jacksonville about 8 minutes, 42 seconds before touchdown, at an altitude of about 119,000 feet at KSC.

If there is a landing delay during the first opportunity on Wednesday, a second KSC landing opportunity occurs at 3:38 a.m. Wednesday. Additional landing opportunities at KSC are also available on Thursday and Friday, at 2:06 a.m. and 2:01 a.m. respectively.

This mission marks only the second time since January 1986 that NASA managers determined normal end-of-mission (EOM) Shuttle landings could be scheduled for KSC. It marks the first nighttime EOM landing at KSC's Shuttle Landing Facility.

The SLF was built in 1975. It is 300 feet wide and 15,000 feet long with 1,000 foot overruns at each end. The strip runs northwest to southeast. It is located about 3 miles northwest of the Vehicle Assembly Building.

-- more --

Prior to last month's landing of the Space Shuttle Atlantis at KSC, Edwards Air Force Base, Ca. had been listed as the prime landing site for Shuttle orbiters since the Challenger accident.

The up-coming landing of Discovery, if weather permits, will be the ninth landing at KSC in the 10 year history of Space Shuttle flight. Three landings have occurred at KSC since return-to-flight in Sept. 1988. The first two were originally scheduled for Edwards Air Force Base, but were diverted to KSC due to poor weather conditions at Edwards. The third landing, which occurred last month, was the first planned end-of-mission landing since Discovery touched down here on April 19, 1985.

Previous landings at KSC were:

41-B - Challenger, Feb. 11, 1984

41-G - Challenger, Oct. 13, 1984

51-A - Discovery, Nov. 16, 1984

51-C - Discovery, Jan. 27, 1985

51-D - Discovery, April 19, 1985

STS-38 - Atlantis, Nov. 20, 1990

STS-43 - Atlantis, Aug. 11, 1991

General weather restrictions for a KSC landing are specified in part as:

* Surface winds must be less than 20 knots in any direction, and less than 12 knots for crosswinds;

* The ceiling must be greater than 10,000 feet. For scattered clouds below 10,000 feet, cloud cover must be observed to be less than 20 percent at the deorbit burn go/no go decision time;

* Visibility must be seven miles or greater;

* There can be no precipitation at the surface or aloft in the proximity of the orbiter;

* Thunderstorms, rain or the potential for lightning cannot be within 30 nautical miles of the landing site;

* Vertical cloud clearance at the 30 nautical mile range, must be greater than 2 nautical miles.

Once the orbiter is on the ground, safing operations will commence and the flight crew will prepare the vehicle for post-landing operations. For this mission and all following missions, a new transport vehicle will be used to assist the crew, allowing them to egress the vehicle and doff their launch and re-entry suits easier and quicker. This vehicle, called the Crew Transport Vehicle, or CTV, was purchased from Continental Airlines at Denver for use at KSC. A similar CTV was used to assist crew egress at the conclusion of mission STS-40 which landed at Edwards Air Force Base on June 14, 1991.

The CTV and other KSC landing convoy operations have been in an "on-call" status since the launch of Discovery September 12. The primary functions of the Space Shuttle recovery convoy are to provide immediate service to the orbiter after landing, prepare the orbiter for towing to the Orbiter Processing Facility and assist crew egress.

Convoy vehicles are stationed at the SLF's mid-point. About two hours prior to landing, convoy personnel don SCAPE suits, or Self Contained Atmospheric Protective Ensemble, and communications checks are made.
nearly two dozen convoy vehicles are positioned to move onto the runway as quickly and as safely as possible once the orbiter coasts to a stop. When the vehicle is deemed safe of all potential explosive hazards and toxic gases, the purge and coolant Umbilical Access Vehicles move into position at the rear of the orbiter.

Following purge and coolant operations, flight crew egress preparations will begin and the CTV will be moved into position at the crew access hatch located on the orbiter's port side.

Once access to the vehicle is gained, a physician will board the shuttle and conduct a brief preliminary examination of the astronauts. The crew will then make preparations to leave the vehicle.

Additional preparations to accommodate a nighttime landing were made by the KSC convoy team and landing recovery personnel. Because the orbiter has no lights of its own, a special bank of xenon lights will be stationed near each end of the runway to provide illumination of the projected touchdown zone and rollout path. Only the xenon lights at the end of the runway upon which the orbiter will land will be turned on. Care will be taken not to direct these portable, high intensity lights near the orbiter as it makes its approach.

Also, convoy personnel have been directed to take extra precaution when traveling in the darkness. Convoy participants will tape high-intensity chem-lights to their legs and arms while working on the runway. Different colored lights will distinguish the personnel. The call-to-stations for all convoy personnel is set for 11:45 p.m. on the night of landing.

About 2 hours, 40 minutes after landing, the orbiter will be towed to Orbiter Processing Facility bay 3 for post-flight deservicing. This will be the first use of this upgraded processing facility for post flight operations. Discovery will remain in OPF Bay 3 as preparations begin for its next scheduled mission, STS-42, in January 1992.

Following their departure from the SLF, the crew will be taken to their quarters in the O&C, meet with their families, undergo a physical examination and depart for the skid strip at Cape Canaveral Air Force Station for their flight back to JSC. A departure ceremony and photo opportunity is scheduled for about 11 hours after landing. The exact time will be determined following landing.

hours are needed.

The majority of the work will be performed at the McDonnell Douglas facilities in Houston.

- end -

Posted: Fri, Oct 18, 1991 9:53 AM EDT Msg: RJJB-2975-1822
From: PAO.KSC
To: P, PAO.LOOP,
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV, PBUCHANAN
Subj: MUSCLE MASS RESEARCH

Mitch Varnes
407/867-2468

Oct. 18, 1991

KSC Release No. 119-91

NASA AND MELBOURNE HOSPITAL TEAM TOGETHER ON MUSCLE MASS RESEARCH

The approaching era of Space Station Freedom and longer duration Space Shuttle flights have accelerated emphasis and interest into the effects of weightlessness on the human body. Scientists agree that a micro-gravity environment -- like that experienced by astronauts during Space Shuttle flights -- has detrimental short-term effects on muscle mass and strength.

They also agree that totally accurate accounts of these effects can only truly be done by examining astronauts during or immediately following their missions. However, a trio of KSC researchers -- working in collaboration with Melbourne's Holmes Regional Medical Center (HRMC) -- are doing about as much as any Earth-bound researchers can to replicate and examine these changes to the human body.

NASA physiologist Dr. Gary Dudley and The Bionetics Corp. researchers Dr. Greg Adams and Christine Ruther have spearheaded a couple of such studies using KSC personnel as their test subjects. Walking on crutches with one of their legs suspended for periods of up to six weeks, these surrogate astronauts are playing an integral part in NASA biomedical studies.

"The muscle disuse and subsequent atrophy we are seeing in our subjects is very similar to what we would expect to find in astronauts who spend long periods in space without working their muscles," Dudley commented. "The work we're involved in is giving us and other interested researchers an excellent data base to work with."

-more-

One of the elements giving the KSC scientists such good data is the HRMC Magnetic Resonance Imaging (MRI) device. MRI is a diagnostic technique that uses magnetism and radio waves to reveal extremely detailed images of muscles, organs and other tissues. MRI is highly touted and widely used by the medical community, but this joint private and government effort marks the first time it has been used for space research.

HRMC's involvement in the NASA project came as a result of an inquiry Dudley extended to all area hospitals. "We always knew the potential of MRI, but we needed access to one to realize it," said Dudley. "HRMC has been receptive to our project from the start and gone out of their way to accommodate and work with us."

"It's been extremely interesting working with NASA," remarked Anne Belew, director of HRMC's MRI Center. "This is the first time we (HRMC) have worked with a government agency on something like this, and I think the whole hospital staff shares my enthusiasm about working with NASA. We're certainly looking to make this an ongoing relationship."

Despite the fact that participation inconveniences a person for a few months, dozens of workers have volunteered and served as subjects for the studies. "It was a tough time," said Rob Harris, a life sciences researcher who immobilized one of his legs for six weeks. "There was some swelling and discomfort associated with suspending my leg, but it gave me an appreciation for just how much I took everyday living for granted," he continued. "Going through the MRI before and after and seeing how my muscle size differed was very interesting. I'm happy that I was able to participate in something that will almost certainly be a benefit for both the medical community and future space travelers."

Preliminary results from the KSC biomedical studies show that the test subject's lose between 12 to 20 percent of their muscle mass during a six week test period. Information from the two studies is still being disseminated, and another test is slated to begin in January 1992.

"We're just beginning to understand the types of changes we see in muscles and tissue as a result of disuse and weightlessness," acknowledged Dudley. "Once we get a good idea of how much muscle we're losing, we will hopefully be able to reduce that amount somewhat and possibly determine how to avoid these detrimental effects altogether."

# # # # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

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Karl Kristofferson
Kennedy Space Center, Fla.
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For Release
November 29, 1991

RELEASE: C91-qq

EG&G BEGINS TENTH YEAR AS KSC BASE OPERATIONS CONTRACTOR

NASA's John F. Kennedy Space Center, Fla., has awarded EG&G Florida, Inc., a government services division of EG&G, Inc., Wellesley, Mass., a 1-year extension of its existing contract for base operations services valued at approximately $197.1 million.

The extension, effective Jan. 1 through Dec. 31, 1992, brings the cumulative value of the contract to $1.46 billion. This is the ninth extension to the base operations contract awarded to EG&G in January 1983.

Under the cost-plus-award-fee extension, EG&G will continue to provide institutional and technical support services for utilities, grounds and facilities, administrative requirements, technical operations and health and protective services at the Kennedy Space Center.

- end -

Lisa Malone
407/867-2468

Dec. 13, 1991

KSC RELEASE NO. 139-91

DISCOVERY TRANSFERRED TO ASSEMBLY BUILDING, ROLL TO PAD NEXT WEEK

Space Shuttle Discovery's roll out to launch pad 39-A next Wednesday, Dec. 18, will be a visible step toward the first launch of 1992.

Yesterday afternoon, Discovery was moved from Orbiter Processing Facility bay 3 to the nearby Vehicle Assembly Building where it is being connected with the external tank and solid rocket boosters.

Discovery is being prepared for the STS-42 International Microgravity Laboratory-1 (IML) mission currently targeted for launch the third week of January. Discovery's 14th flight is a seven-day mission with a seven-member crew.

Flight preparations on Discovery for the STS-42 mission began Sept. 27, following its last mission, STS-48, which ended with a landing at Edwards Air Force Base, Calif.

Discovery was the first orbiter to be prepared for flight in Orbiter Processing Facility bay 3 which was equipped in September 1991 to support full-scale Shuttle processing, testing and check-out. All of Discovery' systems were fully tested during its 10-week stay in the OPF.

- more -

Space Shuttle main engine locations for this flight are as follows: engine 2026 in the No. 1 position, engine 2022 in the No. 2 position, and engine 2027 in the No. 3 position. These engines were installed October 24-25.

The Crew Equipment Interface Test with the STS-42 flight crew was conducted on Dec. 4 in the OPF. This test provides an opportunity for the crew to become familiar with the configuration of the orbiter and anything that is unique to the STS-42 mission.

Technicians installed the International Microgravity Laboratory payload into Discovery's payload bay on Nov. 17, while the vehicle was in the Orbiter Processing Facility. The payload bay doors were closed for flight in the OPF on Dec. 9.

Booster stacking operations on mobile launcher platform 3 began Oct. 1, and were completed by Oct. 21. The external tank was mated to the boosters on Nov. 4.

After the vehicle is secured at the pad next week, technicians will hook up ground power supplies, ground cooling and conditioned air to the vehicle elements. STS-42 Shuttle processing teams will be off the Christmas and New Year's Day holiday period.

The Terminal Countdown Demonstration Test, a full dress rehearsal of launch day with the STS-42 flight crew, is planned Jan. 6-7. While the crew is here, they will be trained in emergency escape procedures at the launch pad, and will practice driving in the armored personnel carriers. The mock countdown is set to begin at 8 a.m. on Jan. 6, and will culminate with a simulated engine cutoff shortly after 11 a.m. EST on Jan. 7.

A standard 43-hour launch countdown is scheduled to begin three days prior to launch. During the countdown, the orbiter's onboard fuel and oxidizer storage tanks will be loaded and all orbiter systems will be prepared for flight.

About nine hours before launch, the external tank will be filled with its flight load of a half a million gallons of liquid oxygen and liquid hydrogen propellants. About two and one-half hours before liftoff, the flight crew will begin taking their assigned seats in the crew cabin.

- more -

Landing is planned at Edwards Air Force Base, Calif., because of the heavier weight of the vehicle returning to Earth with the IML laboratory tucked inside its payload bay. KSC's landing convoy teams will be on station in California to safe the vehicle on the runway and prepare it for the cross-country ferry flight back to Florida. Five days are need at Dryden Flight Research Facility to prepare the orbiter for the ferry flight and bolt it to the 747 Shuttle Carrier Aircraft. A two-day ferry flight is scheduled.

Once back in Florida, Discovery will be taken out of flight status for the next eight and a half months while undergoing major modifications, upgrades and required inspections. The shuttle processing team will perform this work on Discovery in the Orbiter Processing Facility. Discovery's 15th space flight, planned in the fall of 1992, is designated Mission STS-53, a Department of Defense flight.

# # # #

Mitch Varnes
407/867-2468

March 31, 1992

KSC Release No. 41-92

Note to Editors/News Directors

KSC DIRECTOR BOB CRIPPEN TO SPEAK AT SPACEHAB DEDICATION CEREMONY

KSC Director Bob Crippen, former NASA administrator James Beggs and astronaut David Low will be among the keynote speakers at a press briefing and dedication ceremony for the Spacehab Payload Processing Facility (SPPF) and first Spacehab module. The event will occur at the Port Canaveral facility on Friday, April 3 at 10 a.m.

Spacehab, Inc. is a commercial space company that will lease environmentally controlled laboratory modules for flight aboard NASA's Space Shuttle. Each Spacehab module adds 1,100 cubic feet of pressurized working area to the Space Shuttle. The reusable Spacehab is first scheduled to fly aboard STS-57, now manifested for June 1993.

The SPPF is a 37,000-square-foot facility that will be used to check out and integrate payloads for flight inside the Spacehab module. The facility includes a clean room, 11 integration and checkout areas and office space.

The Spacehab payload will be the first habitable space structure ever developed and funded entirely by private industry. McDonnell Douglas Space Systems Company's Huntsville Division designed, developed and produced the module under contract from Spacehab, Inc.

Media interested in covering the event may proceed directly to the SPPF. The facility is located west of Cape Canaveral Air Force Station Gate 1 on State Road 401.

# # # # #

Mitch Varnes
407/867-2468

April 1, 1992

KSC Release No. 42-92

Note to Editors/News Directors

CONSTRUCTION TOPPING OFF CEREMONY FOR KSC SPACE STATION FACILITY SET FOR APRIL 3

KSC engineering and Space Station Freedom team members will celebrate a milestone in the construction of the Space Station Processing Facility (SSPF) on April 3 when the final structural steel beam is hoisted atop the giant building. Movement of the beam and subsequent remarks from KSC officials are scheduled to begin at 2 p.m.

The SSPF will be a KSC-operated facility occupied by about 1,000 NASA and contractor employees. The three-story SSPF will include communications and electrical control areas, laboratories, logistics staging areas, operational control rooms, office areas and a cafeteria. The SSPF will have over 63,000 square feet of dedicated payload processing space, which includes a high bay and intermediate bay. A 5,000-square-foot airlock will be adjacent to the primary processing area.

The SSPF is the biggest new construction effort undertaken at KSC since the Apollo era. Construction began in March 1991, and the building is scheduled to be ready for occupancy by August 1994.

The building was designed by Jacobs Engineering Group, Inc. of Lakeland, Fla. and is being constructed by Metric Constructors, Inc. of Tampa, Fla. The building's cost is $56.2 million.

News media wishing to cover the event should be at the KSC News Center by 1 p.m. for transportation to the construction site. Media representatives with permanent credentials may drive directly to the News Center. Those requiring access badges should contact Lisa Fowler at 407/867-2468 to arrange access.

# # # # #

Bruce Buckingham
407/867-2468

June 11, 1992

KSC RELEASE NO. 71 - 92
Notice to Editors

PHOTO OPPORTUNITY PLANNED FOR MISSION STS-46 CREW

The crew of Space Shuttle mission STS-46 will be at Kennedy Space Center next week for the Terminal Countdown Demonstration Test (TCDT) launch rehearsal. During their visit a photo opportunity with the crew at the pad will be open to any member of the press who wishes to attend.

STS-46 crew members to be at KSC for the TCDT include: Commander Loren Shriver, Pilot Andy Allen, Mission Specialists Jeff Hoffman, Franklin Chang-Diaz, Marsha Ivins and Claude Nicollier, and Payload Specialist Franco Malerba.

Media interested in participating in this event should be at the KSC press site on Monday, June 15, by 3:00 p.m. for escort to pad 39-B. The standard question and answer period will precede the photo session at the pad.

This will be the only photo opportunity for this crew during their visit to KSC for the TCDT. There will be no news media coverage of crew arrival at the Shuttle Landing Facility late Saturday night or crew walkout on Tuesday morning.

On Tuesday, television crews may pull TCDT coverage from live feeds between 10:00 a.m. and 11:00 a.m. EDT. T-0 for the countdown test is scheduled to occur at 11:00 a.m. Video clips and still photos will be available to news media later on Tuesday.

# # # #

Bruce Buckingham
407/867-2468

June 12, 1992

KSC RELEASE NO. 72 - 92

SPECIAL TANKING TEST PLANNED FOR EXTENDED DURATION ORBITER TANKS ON SHUTTLE COLUMBIA

Engineers at Kennedy Space Center will conduct a special cryogenic tanking test of the Extended Duration Orbiter (EDO) tanks located on the EDO pallet inside the payload bay of the Shuttle Columbia. The test is scheduled for Monday, June 15, at launch pad 39-A.

The cryogenic confidence test of the EDO tanks is designed to provide the sequence of operations required to prepare the Shuttle for launch on its record-breaking 13-day mission later this month. The test will also allow engineers the opportunity to evaluate EDO loading and detanking techniques and procedures and provide data necessary to develop accurate time lines for Power Reactant Storage and Distribution (PRSD) system servicing during the launch countdown.

Columbia's mission, featuring the United States Microgravity Laboratory-1, will require the additional cryogenic consumables to allow the crew and vehicle to remain in orbit for the planned 13 days.

The EDO tanks are located in the aft end of Columbia's payload bay on a special EDO pallet. There are eight tanks on the pallet, four for liquid hydrogen and four for liquid oxygen. Each tank has been individually tested, but not as an integrated system. These extra tanks will complement the four sets of orbiter PRSD tanks already mounted under the lining of the orbiter's payload bay.

During Monday's confidence test, engineers will use essentially the same procedure used during a launch countdown.

The EDO tanks will be filled first, followed by the loading of the original orbiter PRSD tanks. Liquid oxygen tanking operations will occur first. After stabilization, engineers will proceed with liquid hydrogen tanking operations.

Each of the eight EDO tanks have independent isolation valves. As each tank fills, these valves will be cycled to give test team members an opportunity to pressurize and leak check the various tanks and associated fill and drain lines.

When all of the tanks are at flight pressure and stabilized, further evaluations will be made. Detanking will follow on the same day.

These onboard circular cryogenic tanks supply the orbiter's fuel cells which, in turn, produce electrical power for the Shuttle during flight. The by-product of combining the liquid hydrogen and liquid oxygen reactants is drinking water for the crew.

The addition of the EDO tanks and pallet was part of the extensive modifications made to the Shuttle Columbia over the past year. The extra tanks will permit the vehicle to remain safely in orbit for up to 16 days.

# # # #

KSC Release No. 99-92

July 23, 1992

Notice to Editors/News Directors

DEDICATION OF SHUTTLE PROCESSING CONTROL CENTER SET FOR JULY 29

NASA's Kennedy Space Center will next week host a dedication ceremony for the recently constructed Space Shuttle Processing Control Center (PCC). The event will take place at 9 a.m. on Wednesday, July 29.

The PCC is a three-story, 99,000-square-foot facility dedicated to Space Shuttle orbiter testing, launch team training and Launch Processing System (LPS) maintenance. The building houses control rooms for orbiter processing and will provide Space Shuttle engineers and technicians with state-of-the-art areas to improve and maintain their skills during pre- and post-flight orbiter processing flows.

Each of the PCC's three floors is designed to serve a specific purpose. The facility's first floor consists of offices, workshops and laboratories for the maintenance and testing of LPS and related equipment. The second floor contains additional office space and areas for launch team training and computer software production. Orbiter control rooms dominate the PCC's third floor.

The ceremony's featured speakers will include KSC Director Robert Crippen, KSC Director of Shuttle Management and Operations Jay Honeycutt and Jim Towles, KSC's director of Facilities Engineering and Project Management.

The PCC is located in the Launch Complex 39 area, between the Orbiter Processing Facility and the Operations Support Building. The $8.9 million building was designed and built by The Haskell Company of Jacksonville, Fla. Construction of the facility began on May 29, 1991.

-more-

Members of the news media wishing to cover the PCC dedication should be at the KSC News Center by 8:30 a.m. to be transported to the site. Permanently badged members of the press and those with credentials to cover the upcoming STS-46 Space Shuttle mission may proceed directly to the press site. Those who require access badges may arrange accreditation by contacting Gisele Altman of the KSC News Center at 407/867-2468.

Bruce Buckingham
407/867-2468

July 27, 1992

KSC RELEASE NO. 102 - 92

AIRSPACE, BRIDGES AND WATERWAYS RESTRICTIONS WILL BE IN EFFECT FOR LAUNCH OF ATLANTIS ON SPACE SHUTTLE MISSION STS-46

During preparations prior to Space Shuttle launches and immediately following liftoff, a number of restrictions are in effect around Kennedy Space Center. The launch of Atlantis on mission STS-46 is targeted for 9:56 a.m. EDT, July 31, 1992.

Listed and described below are restrictions that apply to pilots, boaters and motor traffic crossing bridges leading to KSC.

KSC AREA AVIATION RESTRICTIONS

The airspace immediately surrounding Kennedy Space Center will be limited to official aircraft only and will be off-limits to general aviation pilots prior to and during the launch of the Space Shuttle Atlantis on mission STS-46.

NOTAMS must be checked by pilots prior to flights near the KSC area. Pilots are warned that violations of restricted airspace may result in serious penalties, including suspension or revocation of pilot privileges.

Official aircraft supporting the launch will be in the air. Pilots must be aware that wandering into a restricted area is not only forbidden, but will also create a safety hazard to support aircraft and the errant pilot.

Anyone wishing to view the launch from the air should stay well west of the Indian River. Pilots should be advised that the airspace in that area is expected to be extremely congested with both controlled and uncontrolled aircraft.

Pilots should also be aware of the solid rocket booster (SRB) exhaust cloud that occurs after launch. They should stay at least five miles away from that cloud, even if it drifts out of the restricted area. Research aircraft will be flying into and out of the cloud, and visibility will be limited.

-- more --

In general, the airspace restrictions cover a variety of air ranges from now through launch. In addition to the normal restrictions over Kennedy Space Center and Cape Canaveral Air Force Station, the launch will require that all private aircraft stay out of an area roughly bounded by the west side of the Indian River on the west, the Trident Basin (State Road 528 area) on the south, slightly north of Haulover Canal, and three miles out into the Atlantic on the east. The restrictions are "surface-to-unlimited." These launch-specific restrictions begin three hours before launch.

Pilots should consult the most recent edition of the Jacksonville Sectional Aeronautical Chart. In addition, they should contact the St. Petersburg Flight Service Station at 1-800-99-27433 (1-800-WX-BRIEF). Advisories will be available from the Patrick Approach Control (VHF 134.95 megahertz), Space Center Executive Airport Tower (TIX) (VHF 118.9 megahertz), or the NASA Tower (128.55 megahertz).

Pilots should also refer to the current Patrick Air Force Base release on restricted airspace.

BRIDGES CONTROLLED FOR LAUNCH

The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch period of the Space Shuttle Atlantis on mission STS-46.

Bridges affected by the launch requirements include:

-- Canaveral Harbor Barge Canal (State Road 401, south of Cape Canaveral Air Force Station Gate 1);

-- Indian River Causeway west, a.k.a. NASA Causeway (Intracoastal Waterway at Addison Point);

-- Merritt Island Barge Canal (Merritt Island State Road 3);

-- Haulover Canal Bridge (State Road 3, north of KSC).

Restraints on bridge openings for boat traffic begin three hours before launch. The bridges may be opened for 5 minutes at the following points in the launch countdown: T-180 minutes, T-150 minutes, T-120 minutes, T-90 minutes, and T-65 minutes.

Bridges will remain closed to boat traffic until 90 minutes after liftoff (T+90). They may then open for 5 minutes at T+90 minutes, T+120 minutes, and T+150 minutes. Bridge operations will return to normal at three hours (T+180 minutes) after launch.

Should the Shuttle orbiter be required to perform a Return-

to-Launch-Site (RTLS) landing at KSC, all bridges would remain closed to boat traffic from 45 minutes before landing to one hour after landing.

-- more --

KSC AREA BOATING RESTRICTIONS

Waterways and boating near the Kennedy Space Center will be strictly controlled prior to and during the launch of the Space Shuttle Atlantis.

Safety and security requirements, including U.S. Air Force Range Safety impact limit lines, will go into effect as early as three days before launch. Other requirements will be phased into effect through sundown the night before launch. A general description of the restricted areas follows.

Banana River: Security limits begin at the Banana River Barge Canal south of KSC at the State Road 528 crossing and extend north. This restriction goes into effect at sundown the night before launch.

Atlantic Ocean: Beginning at sundown the night before launch, a general exclusion zone will be in effect three miles offshore from the Haulover Canal, near the north end of KSC, to the entrance of Port Canaveral on the south end of KSC. Four hours prior to launch, all ocean-going traffic will be restricted from entering an area measured from five miles north and south of the pad, and extending 30 miles east into the ocean. Pad 39-A is located at latitude 28 degrees, 36 minutes, 33 seconds north; longitude 80 degrees, 36 minutes, 15 seconds west. An additional three mile wide exclusion zone will be extended eastward through the projected flight path of the shuttle.

Mosquito Lagoon: This area south of the Haulover Canal is off limits to all boats beginning at dusk the night before launch.

Indian River: Restrictions apply from the NASA Causeway north to the Haulover Canal and east of the Indian River's main channel. Restrictions begin at sundown the night before launch.

All boating restrictions will be lifted approximately one hour after launch.

The U.S. Coast Guard, the U.S. Fish and Wildlife Service, and KSC security forces share responsibility for enforcing the boating guidelines.

# # # #

Bruce Buckingham
(407) 867-2468

July 29, 1992

KSC Release No. 103 - 92

PLAYALINDA BEACH TO OPEN FOLLOWING LAUNCH OF ATLANTIS

Playalinda Beach will be reopened to visitors as of sunrise the day following the launch of the Space Shuttle Atlantis on mission STS-46. Launch is currently scheduled for 9:56 a.m. Friday, July 31 from pad 39B. If launch occurs as scheduled, Playalinda Beach will be open to visitors Saturday morning.

The beach is closed whenever an orbiter is at NASA's northern-most pad. Once the vehicle is gone, the southern part of the Canaveral National Seashore will reopen and begin operating at normal hours.

Beach goers who plan to visit Playalinda Beach around this time should call the Canaveral National Seashore office at (407) 267-1110 for additional information on any changes.

Other Canaveral National Seashore beaches such as Apollo Beach remain open. They may be reached through the north beach entrance, located south of New Smyrna Beach.

# # # #

Posted: Wed, Jul 29, 1992 12:33 PM EDT Msg: GJJC-3025-6141
From: PAO.KSC
To: P, PF, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SN:<JPLPIO.PAOLOOP AT JPLPOST>,O:CCMGW,SITE:JPL),
(SITE:INTERNET,ID:<PAOLOOP(a)JPLPOST.JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV
Subj: RELEASE.ASC

[A[A[A[A[A[C[C[C[C[C[C[C[C[C[C[CSTS-46 RELEASE[B[B[B[B

George H. Diller
Kennedy Space Center
407/867-2468

August 3, 1992

Bob MacMillin
Jet Propulsion Laboratory
818/354/5011

KSC Release No. 105-92

MARS OBSERVER MATED TO TRANSFER ORBIT STAGE AT KSC

The Mars Observer spacecraft was successfully mated today to its upper stage, the Transfer Orbit Stage (TOS), passing a major schedule milestone in processing. An Interface Verification Test (IVT) to verify the connections between the two flight elements is scheduled for Tuesday, Aug. 4.

"As challenges in processing have come along, our teams have been willing to do what was necessary to have this milestone happen as close to schedule as possible," said Glenn Cunningham, Mars Observer deputy project manager from the Jet Propulsion Laboratory.

Later this week, the TOS will be fueled with its hydrazine attitude control propellant. Next week, closeout activities of the integrated payload stack will begin. The encapsulation into the Titan III nose fairing is scheduled for Aug. 13, and the transfer from KSC's Payload Hazardous Servicing Facility to Launch Complex 40 for mating to the Titan III is scheduled for Aug. 17.

All activities are currently on schedule for a liftoff of Mars Observer at the beginning of the planetary launch opportunity on Sept. 16, 1992. The launch window extends from 1:02 p.m. to 2:34 p.m. The planetary launch opportunity ends on Oct. 13.

more

Mars Observer will be the first U.S. mission launched to Mars since the Viking program in 1975. From a circular Martian polar orbit of 250 miles, it will create a detailed global portrait of the planet. The spacecraft will map the surface and study Mars geology while profiling its atmosphere and weather. The mission is designed to span one Martian year, or 687 earth days.

The Mars Observer project is managed for NASA by the Jet Propulsion Laboratory, Pasadena, California and the spacecraft is built by General Electric Astrospace Division, East Windsor, N.J. NASA's Marshall Space Flight Center, Huntsville, Ala. is project manager for the TOS upper stage, which is built by Orbital Sciences Corporation of Fairfax, VA. The Titan III project is managed by NASA's Lewis Research Center, Cleveland, Ohio. The launch vehicle and launch services are provided by Martin Marietta Astronautics Division, Denver, Colo. NASA's Office of Space Science and Applications at NASA Headquarters in Washington, D.C. has overall program management responsibility for Mars Observer.

# # #

Kennedy Space Center
407/867-2468

Bob MacMillin
Jet Propulsion Laboratory
818/354-5011

Jerry Berg
Marshall Space Flight Center
205/544-6540

KSC Release No. 106-92

NOTE TO EDITORS/NEWS DIRECTORS:
KSC SCHEDULES MEDIA SHOWING OF MARS OBSERVER/TRANSFER ORBIT STAGE

The Mars Observer spacecraft and the Transfer Orbit Stage, or TOS upper stage, have been fueled and tested are ready

Mitch Varnes
407/867-2468

August 10, 1992

KSC Release No. 108-92

Note to Editors/News Directors

JAPANESE SPACE AMBASSADORS TO PRESENT KSC WITH ORNAMENTAL FLAGS

A quartet of Japanese students will visit the Kennedy Space Center this Friday and present America's spaceport with a set of streamer-like flags shaped like carp fish. The gifts will be received by Glenn Snyder, the KSC manager responsible for processing the joint American and Japanese payload slated to fly aboard the orbiter Endeavour next month.

Two of the Asian nation's highly prized ornamental fish will fly aboard the STS-47 mission as experiments inside the Spacelab-Japan (SL-J) module, which will remain in Endeavour's payload bay during the week-long Shuttle flight. Japanese scientists developed the life science experiment to study the effects weightlessness may have on the behavioral and neurophysiological functions of the fish.

The student group consists of two boys and two girls and ranges from 10 to 15 years in age. The four were chosen from a field of 613 students who submitted entries to an essay contest sponsored by the Nagoya Broadcasting Network of Japan. The contest was also endorsed by the Japanese Board of Education, the National Space Development Agency of Japan (NASDA) and the Japan International Space Year Association.

In commemoration of the upcoming Shuttle mission, "The Dream Toward Space" was chosen as the theme of the contest.

Presentation of the flags will occur at Spaceport USA's Rocket Garden on Friday, August 14, at 10 a.m. News media interested in covering the event may proceed directly to the NASA Kennedy Space Center's visitor complex.

# # # # #

Lisa Malone
(407) 867-2468

August 17, 1992

KSC Release No. 109-92

BOARD APPOINTED TO INVESTIGATE VEHICLE ASSEMBLY BUILDING CRANE INCIDENT

Center Director Robert L. Crippen has appointed an inves- tigation board to examine an incident involving a 250-ton crane that apparently experienced erratic movement while lifting a solid rocket booster segment in High Bay 1 of the Vehicle As- sembly Building (VAB).

On Aug. 11, crane operators were preparing to stack the left forward segment for the STS-52 mission using the crane's slow speed operating mode. There was a sudden increase in the lateral speed of the crane during the operation. The operator stopped the crane immediately and there was no damage to personnel, flight hardware or ground equipment.

Columbia is scheduled to fly the STS-52 mission, targeted for launch in October, with the Laser Geodynamic Satellite-2 (LAGEOS II) payload.

A team is troubleshooting the crane and will make necessary repairs prior to using it again. Booster stacking operations and all crane operations have been suspended pending the resolution of the issue. The 30-foot-long, 12-foot-diameter, left forward booster segment has been transferred to a storage facility while the investigation is continuing.

Jackie E. Smith, Director, Safety and Reliability has been named to chair the board. Assisting Smith on the investigation are board members: David Kelley, chief, Structural System Branch, Ground Engineering Directorate; Howard Meeks of the Systems En- gineering Section, Payload Operations Directorate; Ronald Eatman of the Project Engineering Staff, Facilities Engineering Direc- torate; James Myers, Systems Assurance Office, Mission Assurance Directorate; Arthur Clark of the Cables and Special Power Sec- tion, Facilities Engineering Directorate; and Todd Steinrock of the Mechanical Section, Facilities Directorate.

Malcolm Glenn will serve as the safety advisor, John Biedenharn will provide legal assistance and Lisa Malone is the public affairs representative.

Board functions include investigating the facts surrounding the mishap, determining the probable cause, assessing the pos- sibility of a recurrence or similar mishap, and recommending corrective action. A final report is due during the second week of October.

- end -

George Diller
Kennedy Space Center
407/867-2468

August 21, 1992

Bob MacMillin
Jet Propulsion Laboratory
818/354-5011

KSC Release No. 111-92

MARS OBSERVER MOVED TO LAUNCH COMPLEX 40 AND MATED TO TITAN III

The Mars Observer spacecraft passed another milestone toward launch when it was moved from the Payload Hazardous Servicing Facility on Kennedy Space Center to Launch Complex 40 on Cape Canaveral Air Force Station and mated to the Martin Marietta Titan III rocket. With the payload atop the launch vehicle, checks of the Mars Observer spacecraft and the attached Transfer Orbit Stage (TOS) will begin this weekend.

Two major exercises to prepare for launch are on tap for next week. An Operational Readiness Test on Aug. 26 will test all facilities that send and receive data during flight activities. These include NASA, JPL, and Air Force tracking and data systems around the world.

A countdown dress rehearsal on Aug. 28 will simulate launch day activities and all countdown events as closely as possible. The mobile service tower will be retracted from around the launch vehicle, and the full NASA, Martin Marietta and Orbital Sciences launch team will participate in this exercise.

All activities currently are on schedule to support a launch at the opening of the Mars planetary opportunity on September 16. The launch window extends from 1:02 to 3:05 p.m. EDT.

Mars Observer will be the first U.S. mission to Mars since the Viking program in 1975. From a circular Martian polar orbit of 250 miles, it will create a detailed global portrait of the planet. The spacecraft will map the surface and study Mars geology while profiling its atmosphere and weather. The mission is designed to span one Martian year, or 687 earth days.

# # #

Posted: Fri, Aug 28, 1992 8:25 AM EDT Msg: DJJC-3030-7264
From: HQNEWSROOM
To: PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SN:<JPLPIO.PAOLOOP AT JPLPOST>,O:CCMGW,SITE:JPL),
(SITE:INTERNET,ID:<PAOLOOP(a)JPLPOST.JPL.NASA.GOV>), P,
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:PUBINFO),
(C:USA,ADMD:TELEMAIL,O:SPACEMAIL,UN:NASA.BB)
Subj: HQ LAUNCH ADVISORY: MARS OBSERVER

Donald L. Savage
Headquarters, Washington, D.C.
(Phone: 202/453-8400)

August 28, 1992

George Diller
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

Frank O'Donnell
Jet Propulsion Laboratory, Pasadena, Calif.
(Phone: 818/354-5011)

LAUNCH ADVISORY

MARS OBSERVER LAUNCH TO BE RESCHEDULED

The launch of Mars Observer aboard a Titan III rocket from Cape Canaveral Air Force Station, Fla., originally scheduled for Sept. 16, is being postponed.

During an inspection of the payload contained within the Titan nose fairing atop the rocket, particulate contamination was observed on the surface of the Mars Observer spacecraft. A precautionary decision has been made to remove the payload from the Titan and return it to a spacecraft facility on Kennedy Space Center for cleaning.

The contamination may have been introduced into the fairing when a dry nitrogen purge was placed on the spacecraft as part of securing for Hurricane Andrew.

The countdown dress rehearshal scheduled for today will also be postponed at this time. A new launch date cannot be determined until it is known how long it will take to clean the spacecraft. However, a launch before the end of September is expected. The planetary launch window extends through Oct. 13.

- end -

Bruce Buckingham
407/867-2468

Aug. 28, 1992

KSC RELEASE NO. 117 - 92

KSC JOINS IN RELIEF EFFORT FOR HURRICANE ANDREW VICTIMS

A convoy of 12 trucks and cars packed with durable goods left Kennedy Space Center this morning en route to South Florida to assist residents hit hardest by Hurricane Andrew.

Hurricane Andrew swept through areas south of Miami earlier this week with relentless devastation, leaving more than 250,000 people homeless.

Because of the great outcry for assistance, NASA and its KSC contractors began mobilizing to do whatever possible to assist those left hungry, hurting and homeless.

Three 5,000-gallon water tankers led the convoy on the five-hour drive followed by two 40-foot tractor trailers loaded with an assortment of relief items for the people of South Florida. Included on the trucks are: meal packets, sleeping cots, blankets, mattreses, tents, tables, shelves, chairs, generators, plywood, rope, wire fencing, tool boxes, a three-ton hoist and a variety of clothes and shoes.

"It's all excess material over and above what we are required to keep here at the center for our own hurricane plan," said NASA's Mike Stevens of the Fire and Rescue Office.

The convoy will establish the initial drop center for future relief efforts.

Cal Staubus, NASA's Fire and Rescue Office chief, said, "at this time we are piggybacking our operation with that of the Titusville Chapter of the Salvation Army. They already have a network established to dispatch the supplies."

The group, made up of about 16 NASA and contractor employees, will dispatch the wares from a designated staging area to locations the Salvation Army says is in most need. Everything will be given away.

Staubus said two of the water tankers have already been allocated to area hospitals.

"The tanker drivers accept the possibility that their stay may be longer than expected," Staubus said. "They may be asked to continue to refill them for quite a while. We're not sure when the tankers themselves will be returned."

Forklift operator, Ralph Brown, EG&G, said he was given an armful of toys from friends when they learned he was driving one of the convoy trucks. "It's a chance to help somebody," he said. "I even went down to Winn Dixie last night myself and bought a bunch of baby food so I could hand it out. It feels good to be able to help."

Scores of other KSC employees also assisted in the effort to ready the water tankers and trucks. Included are those who loaded the supplies on the trucks and those who tested the water in the tankers to ensure its purity.

Already, KSC has been organizing drop points at all major KSC facilities for the collection of additional supplies to be taken to Hurricane Andrew victims.

"We will help as long as the need is present," Staubus said.

# # # #

Mitch Varnes
407/867-2468

Sept. 21, 1992

KSC Release No. 130-92

Note to Editors/News Directors

NATIONAL SPACE CLUB TO HONOR FORMER KENNEDY SPACE CENTER MANAGERS

Two key players in the shaping of America's space program will be honored on Sept. 23 when the National Space Club's Florida committee awards the pair with the group's first Lifetime Achievement Awards.

NASA Administrator Daniel Goldin will be the featured speaker at a luncheon that will culminate in the recognition of the lifelong aerospace contributions of Robert H. Gray and Walter J. Kapryan. The event will be held at the Howard Johnson Plaza Hotel in Cocoa Beach, Fla.

"I can't think of two more deserving individuals for these initial Lifetime Achievement awards," commented George L. English, the space club's Florida chairman. "Both Bob and Kap are widely recognized as true pioneers of the space business now routinely conducted on Cape Canaveral Air Force Station and at the Kennedy Space Center."

Gray dedicated nearly 30 years of his professional career to government service before retiring from NASA in 1986. He was a manager at both the Goddard Space Flight Center and at the Kennedy Space Center, where he served as launch director for 178 space missions. Gray was the first director of the Kennedy Space Center's Space Shuttle Projects Office and retired as the center's space station manager. Since his retirement from NASA, Gray has acted as an aerospace consultant to various contractors, the European Space Agency and the government of Australia.

Kapryan was a prominent figure in all of NASA's manned space programs before retiring from civil service in 1979. A project engineer in the Mercury and Gemini programs, Kapryan served as launch operations chief for the last six Apollo missions. In this position, Kapryan had operational responsibility for launches that included the Apollo-Soyuz Test Project, Skylab and manned missions to the moon. He was the Kennedy Space Center's first director of Space Shuttle operations. Although retired, Kapryan continues to stay abreast of NASA activities and occasionally serves as an advisor and consultant to the aerospace industry.

Members of the press wishing to cover Administrator Goldin's speech or the National Space Club awards presentation may proceed directly to the Howard Johnson Plaza Hotel. The luncheon and keynote address are scheduled to begin at 11:30 a.m.

# # # # #

George Diller
Kennedy Space Center
407/867-2468

Jessie Katz
Goddard Space Flight Center
301/286-5566

Jerry Berg
Marshall Space Flight Center
205/544-0034

October 5, 1992

KSC Release No. 137-92

TDRS-F MATED TO IUS-13 FOR JANUARY ENDEAVOUR LAUNCH

NASA's Tracking and Data Relay Satellite (TDRS-F) was mated today to its Inertial Upper Stage booster (IUS-13) in the Kennedy Space Center's Vertical Processing Facility.

TRDS-F is the primary payload for the STS-54 mission to be flown aboard the Space Shuttle Endeavour scheduled for launch in mid-January. In preparation for the mission, two significant tests will be performed before the payload leaves the Vertical Processing Facility.

The Interface Verification Test, or IVT, is scheduled for Oct. 16. This test will verify the electrical connections between the two payload elements and the interface compatability of the payload stack with the Space Shuttle vehicle.

An End-to-End test is scheduled to follow on Oct. 20. This is a network communications test to verify links between the payload and numerous ground-based facilities including the Goddard Space Flight Center in Greenbelt, MD., the TDRS ground station at White Sands, NM, the TRW plant in California, the Johnson Space Center in Houston, the MILA tracking station at Kennedy Space Center, the TDRS checkout station at Hangar AO on

-more-

Cape Canaveral Air Force Station, and the Air Force Consolidated Space Test Center (CSTC) in Sunnyvale, CA. All possible data link conditions are created to verify that there is proper communication with the payload.

The payload is scheduled to be moved to the launch pad in mid to late November and will be fueled in the payload changeout room. After installation into the payload bay of the Space Shuttle Endeavour, tests will be performed to verify the interfaces between the payload and the orbiter.

The Inertial Upper Stage is built by Boeing and arrived at KSC from a checkout facility at Cape Canaveral Air Force Station on Sept. 21. The TDRS-F spacecraft was delivered by C-5A aircraft from the TRW plant in Redondo Beach, CA. on Sept. 24.

NASA's Office of Space Communications, Wsahington, D.C., is responsible for overall program management of the Tracking and Data Relay Satellite System (TDRSS). NASA's Goddard Space Flight Center, Greenbelt, MD., manages the operation of the TDRSS. Project management for the Inertial Upper Stage is by the Marshall Space Flight Center in Huntsville, AL.

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Posted: Mon, Oct 5, 1992 2:09 PM EDT Msg: MJJC-3037-5567

Posted: Tue, Oct 6, 1992 8:06 AM EDT Msg: FJJC-3037-6902
From: PAO.KSC
To: P, PF, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SN:<JPLPIO.PAOLOOP AT JPLPOST>,O:CCMGW,SITE:JPL),
(SITE:INTERNET,ID:<PAOLOOP(a)JPLPOST.JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV
Subj: SCRUB JAY RELEASE

Bruce Buckingham
407/867-2468

October 1992

KSC RELEASE NO. 138 - 92

KSC FEATURE STORY IDEAS -- OCTOBER 1992

MAPPING AND MONITORING OF SCRUB JAY ACTIVITY AT KSC.

The life sciences office at KSC routinely sends scientists out in the field to track and study the endangered scrub jay, an indigenous subspecies of the more popular blue jay.

Scrub jays are native to Florida and found only in low brush or scrubs. The development of Florida and loss of habitat caused a drop in the scrub jay population and resulted in their being placed on the threatened species list. Much of the undeveloped land on KSC is the type of habitat scrub jays prefer. KSC is home to nearly half of the known population of this bird.
(Public Affairs Contact: Mitch Varnes)

SPACE STATION PROCESSING FACILITY CONSTRUCTION CONTINUES

The construction of the 475,000-square-foot building to support prelaunch activities of the Space Station Freedom continues in KSC's industrial area. The facility is divided into an operational area and various support areas. Construction of the facility began in early 1991 and is scheduled for completion

in the summer of 1994.
(Public Affairs Contact: Bruce Buckingham)

-- more --

KSC ASSISTS IN HOMESTEAD AIR FORCE BASE MEDICAL RECORDS RESTORATION

The Biomedical Operations and Research Office was contacted by medical personnel of the Homestead Air Force Base Flight Surgeon's Office concerning the use of NASA facilities and expertise in the restoration of medical records that had become waterlogged from Hurricane Andrew. KSC's Biomedical Office coordinated efforts with the Failure Analysis & Materials Evaluation Office to effect the restoration of these records.

The records were received on Sept. 10 and the refurbishment was complete prior to close of business the following day.
(Public Affairs Contact: Bruce Buckingham)

MANATEE STUDIES AND RANGE MONITORING.

Miles of waterways around KSC make an ideal location for manatees to safely swim and breed. Hundreds of the endangered sea cows make their way to KSC in the spring and summer to enjoy the calm and protective environment of KSC's warm waters. NASA and the Fish and Wildlife Service are studying the manatees and monitoring their range of travel via satellite transmitter attached to the tail of the mammals.
(Public Affairs Contact: Mitch Varnes)

# # # #

If you are interested in pursuing one or more of these feature story ideas, please contact the KSC Public Affairs Office at 407-867-2468 for more information.

Posted: Tue, Oct 6, 1992 9:08 AM EDT Msg: BJJC-3037-7008
From: HQNEWSROOM
To: P, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SN:<JPLPIO.PAOLOOP AT JPLPOST>,O:CCMGW,SITE:JPL),
(SITE:INTERNET,ID:<PAOLOOP(a)JPLPOST.JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:PUBINFO),
(C:USA,ADMD:TELEMAIL,O:SPACEMAIL,UN:NASA.BB)
Subj: HQ 92-165/Russian Agreement

for immediate release

Debra J. Rahn
Headquarters, Washington, D.C.
(Phone: 202/358-1639)

Octo

RELEASE: 92-165

NASA AND RUSSIAN SPACE AGENCY SIGN SPACE AGREEMENTS

NASA and the Russian Space Agency (RSA) have signed two cooperative agreements in Moscow, in the areas of human space flight and Mars exploration.

"Signing these two agreements is the next crucial step in expanding cooperative space activities with our Russian partners. We are very anxious to

James Hartsfield
Johnson Space Center
(713) 483-5111

October 14, 1992

George Diller
Kennedy Space Center, Florida
(407) 867-2468

Release No. 92-055

ATLANTIS TO MAKE EAST TEXAS STOPS EN ROUTE TO CALIFORNIA

Weather permitting, the Space Shuttle Atlantis will make an East Texas debut this weekend with a flyby of Tyler, a stop at Longview, and an overnight stay at Houston's Ellington Field as it makes a piggyback trip to Palmdale, Calif.

Atlantis will be carried atop the Boeing 747 Shuttle Carrier Aircraft from Florida's Kennedy Space Center to Rockwell's Palmdale, Calif., shuttle factory for a series of inspections and upgrades all shuttles have gone through periodically. If weather is acceptable, Atlantis will depart Kennedy at 8:30 a.m. EDT on Saturday, Oct. 17; fly by Tyler, above that city's annual Rose Parade activities, about 10:30 a.m. CDT; and land at the Gregg County Airport near Longview about 11 a.m. CDT. At Gregg County Airport, Atlantis will be received with Space Day festivities that will include local bands and dignitiaries.

Atlantis will depart Gregg County Airport at 2:30 p.m. CDT and fly to Ellington Field, arriving about 3:30 p.m. CDT. At Ellington, Atlantis will remain overnight and the public will be allowed to view the shuttle and carrier aircraft parked in front of NASA's Hangar 990 until 10 p.m. CDT. Atlantis is scheduled to leave Ellington at about 8 a.m. CDT Sunday, Oct. 18, land at Biggs Army Air Field in El Paso for a brief refueling stop about 9:30 a.m. MDT and arrive at Palmdale about 1:10 p.m. PDT.

Atlantis will remain at Palmdale for about a year, with a return to Florida planned in late September 1993. At Palmdale, Atlantis will undergo a series of structural inspections and modifications. Several items of updated and new equipment will be installed that will make it equivalent in capability to Endeavour, NASA's newest shuttle, and which

- more -

will enable the accomplishment of the first NASA mission to dock with the Russian Space Agency's Mir Space Station.

The upgrades include a drag chute to aid in landings; improvements to the auxiliary power units, generators that are used to power the hydraulics onboard which in turn operate the elevons, ailerons, rudder and brakes; the addition of a fifth set of hydrogen and oxygen tanks that will enable Atlantis to stay in space for longer periods by allowing more storage of the substances used to generate electricity on board; the addition of an updated galley, or kitchen, which allows additional food storage space; the addition of another tank of nitrogen aboard to allow a larger supply of breathing air for the crew; a regenerative system that will add more capability to filter carbon dioxide from the cabin atmosphere; and a change in connections that will allow Atlantis to fly with either the current model shuttle toilet aboard or an improved toilet designed to allow a larger capacity for storing waste. After the upgrades, Atlantis will be able to remain in space for as long as 10 days.

After its return to Florida, Atlantis' next flight will be Shuttle mission STS-63, tentatively set for a March 1994 launch. STS-63 will carry the Lidar in Space Technology Experiment-1 (LITE-1), an instrument that would emit laser energy into the upper atmosphere of Earth and measure various aspects of the atmosphere, such as cloud top heights, densities, aerosol amounts and temperatures. The astronaut crew for STS-63 has not yet been assigned.

Later, Atlantis will be outfitted with the remaining equipment, including a Russian-built docking mechanism, needed to dock with the Russian Space Agency Space Station Mir. Atlantis is scheduled to dock with Mir on a joint U.S.-Russian flight planned in the spring of 1995.

-end-

Bruce Buckingham
407/867-2468

Nov. 4, 1992

KSC RELEASE NO. 150 - 92

Notice to Editors/News Directors

MEDIA SHOWING OF STS-54 PAYLOAD SCHEDULED FOR NOVEMBER 6 AT KSC

Members of the news media will be offered an opportunity to see and photograph the Tracking and Data Relay Satellite (TDRS-F) and its Inertial Upper Stage (IUS-13) booster on Friday, Nov. 6, at Kennedy Space Center.

The STS-54 payload is located in the Vertical Processing Facility (VPF) in KSC's industrial area. The payload, scheduled to be launched in January 1993 aboard Shuttle Endeavour, is being readied for transport to pad 39-B and will be inside the payload transport canister. The canister doors will remain open for the viewing.

Media interested in attending the viewing should be at the KSC News Center at 12:30 p.m., Nov. 6, for transport to the VPF.

Payload operations managers will be available to answer questions on processing status.

At the VPF, clean room attire will be furnished. Electronic flash photography is permitted, although camera equipment should be self-contained. No outside power source is available. Long pants and closed toe shoes are recommended. No shorts are allowed. No leather or vinyl cases are permitted in the clean room. Special plastic bags will be provided for camera accessories. Also, no matches, lighters, tobacco products, food or drink are allowed in the clean room.

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

Mark Hess
Headquarters, Washington, D.C.
(Phone: 202/453-4164)

Bruce Buckingham
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release
January 29, 1993

RELEASE: 93-18

KSC BASE OPERATIONS CONTRACT AWARD PROTESTS SETTLED

NASA announced today that the protests of EG&G Florida, Inc., BAMSI Inc., and Westinghouse KSC Company, Inc. have been settled on the Kennedy Space Center (KSC) Base Operations Contract (BOC) procurement.

NASA had selected Lockheed Space Operations Co. on Nov. 17, 1992, for negotiations leading to award of the BOC. The three companies protested the selection to the General Services Administration Board of Contract Appeals in early December.

Settlement was prompted by the determination that certain deficiencies in the agency's activities occurred during the original proposal submission and discussion phase of the procurement. This resulted in a deficiency in certain critical information which remained unrequested and therefore, unavailable for NASA's source evaluation board to fully consider and evaluate.

As part of the settlement, NASA will rescind its original selection. An amendment to the BOC solicitation also will be issued. Each of the four competitors then will have the opportunity to submit a revised proposal. Selection of an awardee is expected to occur sometime during late summer.

The BOC provides a wide variety of services to KSC, primarily in the area of management, operation, maintenance and engineering for KSC facilities and utilities, technical and administrative support operations, and health, fire and security services. The BOC will be a cost-plus-award fee contract, with an incentive fee feature, for an initial period of 4 years with three priced 2-year options.

EG&G Florida, Inc., the incumbent contractor, will continue to provide base operations support during the recompetition period.

-end-

Mitch Varnes
407/867-2468

Feb. 9, 1993

KSC Release No. 12-93

Note To Editors/News Directors

STS-55 CREW TO HOLD LAST PRE-LAUNCH PRESS MEETING THURSDAY AT KSC

The international seven-member crew scheduled to fly aboard the Space Shuttle Columbia later this month will meet the press Thursday at the Kennedy Space Center. Standing in front of the launch pad, the astronauts will host a photo opportunity and short question and answer period with the news media at 4 p.m.

The astronauts are at KSC this week to participate in a practice launch countdown commonly referred to as the Terminal Countdown Demonstration Test (TCDT). The TCDT is a regular part of every Space Shuttle mission and is conducted for the benefit of both the astronauts and the launch team. The test allows the astronauts to become better acquainted with KSC's Shuttle facilities and enables the launch team to further hone their skills and to detect any minor problems that might otherwise surface on an actual launch day.

Prior to Thursday's press outing, the crew will spend the day reviewing pre-flight and emergency egress procedures. On Friday, they will don their flight suits and climb aboard Columbia for the final hours of the TCDT, which is scheduled to end at 11 a.m. with the simulated ignition of Columbia's three main engines.

NASA's first Space Shuttle and a German Spacelab module are now targeted for launch later this month. An official date for the second Shuttle flight of 1993 will be set late Thursday following the completion of the Flight Readiness Review.

News media wishing to attend the STS-55 crew briefing on Thursday should be at the KSC press site by 2:45 p.m. to obtain transportation to the launch pad. Permanently badged members of the press may proceed directly to the KSC press site. Those members of the media needing accreditation should call Gisele Altman at 407/867-2468 to arrange access.

# # # # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

For Release

Ed Campion
Headquarters, Washington, D.C.
(Phone: 202/358-1778)

February 11, 1993

George Diller
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

NOTE TO EDITORS: N93-7

STS-55 REVIEW COMPLETED, LAUNCH DATE TO BE SET LATER

NASA managers today completed their review of the flight readiness of Shuttle Mission STS-55, a mission dedicated primarily to the German Space Agency for research in life and microgravity sciences.

Because of a decision reached yesterday to remove and replace Columbia's high pressure oxidizer pumps, a launch date for the mission was not set. Managers are still assessing the time it will take to perform the work and resume launch preparations. Tom Utsman, Director of the Space Shuttle Program, said a launch date for STS-55 would be set the last week in February.

The pumps being replaced feed super cold oxygen to the Shuttle's three main engines. They are being removed because a search of processing paperwork could not conclusively determine that the pumps are equipped with a newer version of turbine tip seal retainers. The tip seals minimize the flow of gas around the tips of the turbine blades to enhance pump performance and the retainers hold the seals in place.

The major payload for Space Shuttle Columbia and her 7 member crew is the pressurized Spacelab module - designated Spacelab-D2 - which will allow the astronauts to conduct a wide range of experiments in the microgravity environment of space. Some 90 experiments are planned during the mission.

This will be the 14th flight of the orbiter Columbia and the 54th Space Shuttle mission.

-end-

Posted: Sun, Apr 4, 1993 11:45 AM EDT Msg: MJJD-3071-3073
From: PAO.KSC
To: P, PF, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SN:<JPLPIO.PAOLOOP AT JPLPOST>,O:CCMGW,SITE:JPL),
(SITE:INTERNET,ID:<PAOLOOP(a)JPLPOST.JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV
Subj: KSC AIRSPACE RESTRICTED FOR STS-56

George H. Diller
407/867-2468

April 4, 1993

KSC Release No. 32-93

LOCAL PILOTS ASKED TO AVOID CAPE CANAVERAL RESTRICTED AREAS DURING LAUNCH OF SPACE SHUTTLE DISCOVERY

A delay in the launch of the Space Shuttle in mid-January was narrowly avoided when a Federal Aviation Administration (FAA) patrol aircraft intercepted a Cocoa pilot who crossed the Indian River and proceeded toward the launch pad. The intruding aircraft was escorted out of the restricted area and legal action against the pilot was taken.

Shuttle launch delays are expensive and sometimes jeopordize mission objectives. One of the ways NASA can help assure an on-time liftoff is to keep operational airspace clear of aircraft that have no direct involvement in launch activities.

The launch of the Space Shuttle Discovery on the STS-56 mission is scheduled for Tuesday, April 6 at 1:32 a.m. As is customary, the airspace around the Kennedy Space Center and Cape Canaveral Air Force Station will be closed to general aviation aircraft beginning three hours before the scheduled liftoff time.

Activating the restricted airspace within the launch danger area is primarily intended to protect private aircraft from potential harm during launch activity. However, this also protects the Space Shuttle and the astronauts aboard.

During the final portion of the countdown, official aircraft supporting the launch will be in the air. The surrounding air space will be congested. For pilots desiring to view the launch from their airplanes it is suggested that they remain outside an area bounded by the west shoreline of the Indian River, above the intersection of U.S. 1 and State Road 3 on north Merritt Island, and south of Port Canaveral and the Bee Line Expressway (SR 528). The boundaries of Cape Canaveral Restricted Areas 2931 through 2935 are shown on the Jacksonville Sectional chart and the Orlando Terminal Control Area (TCA) chart.

Notices to Airmen (NOTAMS) regarding restricted airspace are available from the St. Petersburg Flight Service Station which may be reached by radio on 123.6, or on the telephone by dialing 1-800/WX-BRIEF (1-800/992-7433). Real time advisories are also available from Patrick Approach Control on 134.95, NASA Tower on 128.55, or from Space Center Executive Tower on 118.9.

As is customary, FAA aircraft will be enforcing restricted airspace on launch day if they observe or are advised by Patrick Approach Control of violations. Pilots should also be aware that some aircraft insurance companies are cancelling policies of intruders convicted of an airspace violation involving the Space Shuttle.

Pilot cooperation will be greatly appreciated as it will assist NASA in achieving an on-time liftoff.

# # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

For Release

May 27, 1993
6:00 p.m. EDT

Ed Campion
Headquarters, Washington, D.C.
(Phone: 202/358-1778)

Bruce Buckingham
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

LAUNCH ADVISORY - JUNE 3 LAUNCH OF ENDEAVOUR POSTPONED

NASA managers have decided to changeout Space Shuttle Endeavour's #2 main engine liquid oxygen turbopump because of an issue which was raised with a part on the pump. The decision to remove and replace the pump will move the launch of Endeavour on Shuttle Mission STS-57, originally scheduled for June 3, to sometime around mid-June. A firm launch date will be set after the replacement pump has been installed and checked out.

The specific issue with the turbopump is with one of two springs which are designed to keep the pump's ball bearings in place and in their proper positions. During inspection of the pump, engineers discovered evidence of an inspection etch mark in a high-stress region of the spring. While there is data which indicates the spring will work as designed, NASA managers decided to replace the unit since they could not firmly determine that the pump would operate in a safe manner. If a spring were to fail, the rotor position may not be held accurately and the potential exists for higher vibration.

Springs are etched for a variety of reasons. They are marked to document individual serial numbers, to verify that materials penetration inspections have been complete, and/or to note that the part has been used in ground test operations. The misplaced etch mark on Endeavour's engine was a penetration verification stamp.

The pumps on the main engines to be used on the upcoming flights of Space Shuttle Discovery (STS-51/July 1993) and Space Shuttle Columbia (STS-58/Sept. 1993) will be examined as part of their pre-launch processing.

- end -

Mitch Varnes
407/867-2468

June 1, 1993

KSC Release No. 60-93

POSTAL SERVICE TO LAUNCH SPACE STAMP AT SPACEPORT USA

The U.S. Postal Service will unveil its latest space-themed creation at 11 a.m. on Thursday at Spaceport USA, the Kennedy Space Center's visitors complex. The $2.90 stamp features the image of a futuristic space plane soaring through space, leaving Earth and other interstellar objects in its celestial wake.

Deputy Postmaster General Michael S. Coughlin and KSC Director Bob Crippen will dedicate the stamp in a ceremony set to occur inside the Spaceport Central annex of Spaceport USA. Members of the public are invited to attend the free event.

Stamps with space themes have historically been favorites among both philatelists and collectors of space memorabilia. Popular space stamps of the past include a 1969 issue commemorating the manned lunar landing and a 1992 joint venture with Russia that culminated in the release of four stamps depicting international cooperation in space exploration.

The Titusville Postmaster will establish a mini-post office at Spaceport USA on Thursday to allow for the purchase of the new stamp. The makeshift mail room will open at 9 a.m. and close at 2 p.m.

First day cancellations of the space stamp will indicate that the stamp was issued at the Kennedy Space Center. Collectors are encouraged to send their requests to the Titusville Post Office where first day of issue postmarks will be available for purchase until July 2, 1993.

Members of the media wishing to cover the dedication may proceed directly to Spaceport USA.

# # # # #

George H. Diller
407/867-2468

June 16, 1993

KSC Release No. 64-93

PLASMA MOTOR GENERATOR EXPERIMENT MATED TO DELTA ROCKET

NASA's Plasma Motor Generator (PMG) experiment is being mated today to the second stage of an Air Force Delta II Rocket at Launch Complex 17. PMG is scheduled for launch as a secondary payload no earlier than Saturday, June 26. The liftoff time on that day is 9:04 a.m. The primary payload is an Air Force Navstar Global Positioning Satellite.

There are four PMG elements being mated to the second stage: the Near End Package which is the control center for the experiment, the Far End Package, which is deployed attached to the tether and has its own self-contained experiment electronics and events sequencer, the Plasma Diagnostics Package which contains an ion spectrometer, and a Small Expendable Deployer System (SEDS) electronics box which provides the primary electrical system and telemetry interfaces with the Delta second stage.

Much like SEDS, also flown successfully on an Air Force Delta II, PMG is a tether satellite, but uses a conductive tether only slightly more than 1,600 feet long. The primary objective is to electrically link both ends of the wire to the ionosphere - a sparsely populated layer of charged ions - as the PMG moves through the Earth's magnetic field, generating a current which can be measured. Xenon gas will be bled at each end of the wire to form an ion plasma to complete the electrical circuit.

A further objective is to use the naturally induced voltage and current in the wire to attempt to drive the tether system either forward or backward. Other voltages and currents will then be transmitted along the wire at various levels to test the mobility of the system.

The experiment will last three to six hours. Data will be monitored by investigators as it is received and recorded at NASA's central telemetry facility located at Hangar AE on Cape Canaveral Air Force Station.

- more -

A potential application of the experiment is to test the feasibility of using this method to boost the altitudes of satellites in low earth orbits. It might also be used to allow a spacecraft to dissipate an accumulated electrical charge. The Johnson Space Center in Houston is lead center for PMG. The Lewis Research Center in Cleveland is responsible for the Plasma Diagnostics Package, and the Marshall Space Flight Center in Hunstville is responsible for the SEDS electronics box.

- end -

George H. Diller
407/867-2468

June 25, 1993

KSC Release No. 70-93

STS-51 PAYLOADS ARRIVE AT LAUNCH PAD FOR NEXT SHUTTLE LAUNCH

Payloads for the next Space Shuttle mission, STS-51, arrived at Pad 39-B this morning - passing yet another major milestone in prelaunch processing.

Riding in the payload canister atop the associated transporter, the Advanced Communications Technology Satellite (ACTS) and the Orbiting Retrievable Far and Extreme Ultraviolet Spectrometer (ORFEUS) began the 15-mile trip from the Vertical Processing Facility (VPF) in the KSC Industrial Area at 9 p.m. last night. By 1 a.m. this morning, the payloads were at the sea-side launch pad.

Payload processing team members are busy today installing the ACTS-TOS and ORFEUS-SPAS into the pad's payload changeout room.

ACTS will serve as a test bed for advanced experimental communications satellite concepts and technology. Its Transfer Orbit Stage (TOS) upper stage booster will lift the satellite to geosynchronous altitude on the first day of the mission.

ORFEUS is a telescope system which will provide information on how stars are born and how they die, while also studying gaseous interstellar clouds. Its carrier, the Shuttle Pallet Satellite (SPAS), will be deployed from the orbiter for 40 to 60 hours to allow observations during the flight before being returned to the payload bay.

Based on a 12:30 a.m. rollout of the Space Shuttle Discovery to the pad, the two STS-51 primary payloads are scheduled to be installed into the payload bay on Sunday, June 27.

In upcoming payload milestones, an Interface Verification Test (IVT) is scheduled for Tuesday, June 29, to verify connections between ACTS-TOS and Discovery's flight deck as well as the orbiter's electrical and communications systems. The next day, Wednesday, June 30, a functional test is scheduled to verify the state of health of the ACTS onboard systems. Finally, the IVT for ORFEUS-SPAS will be performed on Saturday, July 3, to verify electrical connections between the payload and orbiter.

Launch of STS-51 remains targeted for mid-July with an official date to be determined on July 1 at the Flight Readiness Review.

# # #

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

Mark Hess
Headquarters, Washington, D.C.
(Phone: 202/358-1778)

Dick Young
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release
June 28, 1993

RELEASE: C-93-i

KSC BASE OPERATIONS CONTRACT EXTENDED FOR 3-MONTH PERIOD

NASA today announced that the Kennedy Space Center (KSC), Fla., Base Operations Contract (BOC), currently held by EG&G Florida, Inc., has been extended for a 3-month period.

The contract extension includes a basic 3-month period priced at $46,543,269 covering the period from July 1 through Sept. 30, 1993, and three additional 1-month options with a total potential value of $44,256,267.

The BOC provides a wide variety of services to KSC, primarily management, operations, maintenance and engineering for KSC facilities and utilities; technical and administrative support operations; and health, fire and security services.

EG&G Florida has held the Base Operations Contract for the past 10 years and is one of four companies involved in a recompetition. The new contract is expected to be awarded in late summer for an initial period of 4 years with three 2-year priced options. The other competitors for the BOC are BAMSI, Inc., of Titusville, Fla.; Lockheed Space Operations Co., Titusville; and Westinghouse Electric Corp., Government Operations Business Unit, Pittsburgh.

- end -

George H. Diller
407/867-2468

June 30, 1993

KSC Release No. 73-93

WAKE SHIELD FACILITY ARRIVES TO BEGIN PRELAUNCH PREPARATIONS

The Wake Shield Facility (WSF), a primary payload for mission STS-60, has arrived at Cape Canaveral to begin final prelaunch assembly and checkout. The spacecraft will fly aboard the Space Shuttle Discovery targeted for launch the second week in November.

The parabolic-shaped WSF is 12 feet in diameter and includes a communications and avionics system, solar cells and batteries, and a propulsion thruster. The experiment will take advantage of the near vacuum of space to attempt to grow innovative thin film materials for use in electronics. It will be deployed by the remote manipulator arm, and fly in formation with Discovery at a distance of up to 46 statute miles from the orbiter for 56 hours. It will then be retrieved from space, again using the remote manipulator arm.

WSF is undergoing initial processing in NASA's Hangar S on Cape Canaveral Air Force Station. In mid-September it will be moved to the Vertical Processing Facility in the KSC Industrial Area where tests will verify its compatibility with the Space Shuttle. The payload is scheduled to be transferred to the pad approximately one month later, about mid-October.

WSF development is sponsored by the Space Vacuum Epitaxy Center in Houston, Texas which is a NASA Center for the Commercial Development of Space (CCDS). Experiments are also being sponsored by NASA, the Air Force and Army, and Case Western Reserve University in Cleveland, also part of NASA's CCDS program.

Bruce Buckingham
407/867-2468

August 9, 1993

KSC Release No. 98 - 93

STS-51 COUNTDOWN BEGAN AS SCHEDULED TODAY

The countdown for launch of the Space Shuttle Discovery on mission STS-51 began as scheduled today at 9:30 a.m. EDT, at the T-43 hour mark.

This marks the beginning of the third launch attempt of the orbiter Discovery since the launch was scrubbed on July 17 and 24 due to technical problems. Additionally, launch was postponed from August 4 until August 12 due to concerns regarding the Persied meteor shower which is expected to peak on the evening of August 11.

The countdown includes 28 hours and 40 minutes of built-in hold time leading to the opening of the launch window at 9:10 a.m. (EDT) on Thursday, August 12. The 57 minute window extends until 10:07 a.m.

A primary objective of this mission is the deployment of the Advanced Communications Technology Satellite (ACTS) and the Transfer Orbit Stage (TOS). ACTS/TOS is the latest in NASA's series of advanced communication satellites and a test-bed for technology which will be used in future operational satellites. Also, the Orbiting Retrievable Far and Extreme Ultraviolet Spectrometer-Shuttle Pallet Satellite (ORFEUS-SPAS) payload will be deployed and retrieved during this mission.

Also on board is the IMAX camera, the Commercial Protein Crystal Growth (CPCG) experiment, and Chromosome and Plant Cell Division in Space (CHROMEX) experiment.

In addition, astronauts Jim Newman and Carl Walz are scheduled to perform a six hour spacewalk on the fifth day of the mission as a continuation of a series of test spacewalks to increase experience and refine training methods. They will work with several tools that may be used during the servicing of the Hubble Space Telescope mission later this year.

Today in Firing Room 1 of the Launch Control Center, the KSC launch team is verifying systems to assure that the Shuttle is powered up and that the data processing and backup flight control systems are operating trouble free.

-- more --

Verifications will occur throughout the count to ensure reviews of the flight software stored in the orbiter's twin memory banks is being conducted, computer controlled display systems are being activated, and the backup flight system general purpose computer is being loaded.

Operations are also underway to prepare the orbiter for on-board cryogenic loading. Later, orbiter navigation aids will be turned on and tested and the inertial measurement units will be activated.

Also today, ground crews are making the final storage of mid-deck and flight deck supplies and payloads. They will also perform microbial samplings of the flight crew's drinking water and check water levels in the crew waste management system.

The STS-51 crew is scheduled to arrive at KSC at about 3 p.m. today.

At T-27 hours, the countdown will enter its first built-in hold. This is an eight hour hold lasting from 1:30 to 9:30 a.m. Tuesday.

When the countdown resumes, the launch pad will be cleared of all personnel in preparation for cryogenic fuel loading of the power reactant and storage distribution system tanks located under the payload bay lining. These tanks hold the super-cold liquid hydrogen and liquid oxygen reactants used by the fuel cells to provide electricity to the orbiter and drinking water for the crew.

Cryogenic flow is scheduled to start at about 11:30 a.m. Tuesday and continue for about five hours.

As servicing of the cryogenic tanks concludes, the clock will enter another built-in hold at the T-19 hour mark. This hold will last for four hours from 5:30 to 9:30 p.m. on Tuesday.

Following cryogenic loading operations, the pad will be reopened for normal work and the orbiter mid-body umbilical unit used to load the super-cold reactants in the orbiter's fuel cell tanks will be demated and retracted into the launch structure.

When the countdown resumes, technicians will complete final vehicle and facility closeouts and begin activating the orbiter's communications systems and configuring Discovery's cockpit for flight. The orbiter's flight control system and navigation aids will be activated. The stowable crew seats will be installed in the flight and mid-decks.

The countdown will enter a built-in hold at the T-11 hour mark at 5:30 a.m. Wednesday. This 13 hour, 20 minute hold will last until 6:50 p.m. Wednesday. During this hold, time critical equipment will be installed in the orbiter's cockpit and the inertial measurement units will be activated and warmed up.

At about 11 a.m. Wednesday, the Rotating Service Structure is scheduled to be moved away from the vehicle and placed in launch position.

At T-9 hours, about 8:50 p.m. Wednesday, the onboard fuel cells will be activated. At T-8 hours, the launch team will begin evacuating the blast danger area and clear the pad for loading the external tank with the super-cold cryogenic fuels. At T-7 hours, 30 minutes, conditioned air that is flowing through the orbiter's payload bay and other areas on the orbiter will be switched to gaseous nitrogen in preparation for fueling the external tank. The inertial measurement units will transition from the warm up stage to the operate/attitude determination mode at T-6 hours, 45 minutes.

The countdown will enter another planned built-in hold at the T-6 hour mark at 11:50 p.m. Wednesday. During this one-hour hold, final preparations for loading the external tank will be completed and a pre-tanking weather briefing will be conducted.

Chilldown of the lines that carry the cryogenic propellants to the external tank begins when the clock starts counting again at 12:50 a.m. Thursday. Filling and topping off the external tank should be complete at the beginning of the next planned hold at T-3 hours, or 3:50 a.m. Thursday.

During the two-hour hold at T-3 hours, an ice inspection team will conduct a survey of the external tank's outer insulation and other Shuttle components. Also, the closeout crew will be dispatched to the pad and begin configuring the crew module and white room for the flight crew's arrival. Liquid oxygen and liquid hydrogen will be in a stable replenish mode during this time to replace any propellant that "boils" off.

During the hold at T-3 hours, the five-member STS-51 crew will be awakened at about 4 a.m. Thursday.

Following breakfast, the crew will receive a briefing on weather conditions both at KSC and around the world via satellite from Mission Control, Houston.

The flight crew will suit-up in their partial-pressure suits, then leave the Operations and Checkout Building during the T-3 hour hold, or at about 5:40 a.m. They will arrive at the pad's white room at about 6:10 a.m. where they will be assisted by white room personnel in getting into the crew cabin.

Just prior to the T-1 hour mark, the test team and the flight crew will get another weather update, including observations from astronaut Robert "Hoot" Gibson flying in a Shuttle Training Aircraft in the KSC area.

The last two built-in holds will be 10 minutes in duration and will occur at the T-20 minute mark, or at 8:30 a.m., and at the T-9 minutes mark at 8:51 a.m. During the final hold, the flight crew and ground team receive the NASA launch director's and the mission management team's final "go" for launch.

Milestones after the T-9 minute mark include start of the ground launch sequencer; retraction of the orbiter access arm at T-7 minutes, 30 seconds; start of the orbiter's auxiliary power units at T-5 minutes; pressurization of the liquid oxygen tank inside the external tank at T-2 minutes, 55 seconds; pressurization of the liquid hydrogen tank at T-1 minute, 57 seconds; and the electronic "go" to Discovery's onboard computers to start their own terminal countdown sequence at T-31 seconds. The orbiter's three main engines will start at T-6.6 seconds.

COUNTDOWN MILESTONES

Launch - 3 Days (Monday, August 9)

Prepare for the start of the STS-51 launch countdown and perform the call-to-stations at the T-43 hour mark. Countdown began at 9:30 a.m. All members of the launch team reported to their respective consoles in Firing Room 1 in the Launch Control Center for the start of the countdown.

The payload bay doors are scheduled to be closed for flight at about 4 p.m.

Launch - 2 Days (Tuesday, August 10)

Enter the first planned built-in hold at T-27 hours for a duration of eight hours.

Check out back-up flight system and review flight software stored in mass memory units and display systems. Load backup flight system software into Discovery's general purpose computers.

Begin stowage of flight crew equipment. Inspect the orbiter's mid-deck and flight-deck and remove crew module platforms. Start external tank loading preparations and prepare the Shuttle's main engines for main propellant tanki

Command?

Sarah Keegan
NASA Headquarters, Washington, D.C.
202/358-1547

August 19, 1993

George Diller
Kennedy Space Center, Florida
407/867-2468

Jim Elliott
Goddard Space Flight Center, Greenbelt, Md.
301/286-6256

KSC Release No. 103-93

FLIGHT HARDWARE FOR HUBBLE FIRST SERVICING MISSION
NOW ARRIVING AT KSC

Flight hardware which will fly aboard the Space Shuttle Endeavour for use on the Hubble Space Telescope (HST) first servicing mission has begun arriving at the Kennedy Space Center. The Wide Field/Planetary Camera II (WFPC II) arrived today at Hangar AE, a NASA Spacecraft Checkout Facility on Cape Canaveral Air Force Station.

During the next two weeks 17 trucks will be transferring the flight hardware for HST servicing and associated support hardware from NASA's Goddard Space Flight Center in Greenbelt, Md. to the Kennedy Space Center. The instruments have been in a clean room at Goddard for the last several months undergoing integration and testing.

In addition to WFPC II, other primary components arriving over the next two weeks include the Corrective Optics Space Telescope Axial Replacement (COSTAR), two solar panels, the Goddard High Resolution Spectrograph redundancy kit, rate gyro sensor and electronic control units and two magnetometers.

The Space Support Equipment (SSE) arrived at KSC by barge Aug. 11 and is now in the Payload Hazardous Servicing Facility being prepared for launch. The units of the SSE include the Orbital Replacement Unit Carrier which is a Spacelab maintenance and repair pallet dedicated to HST activities; the Solar Array Carrier which will hold the replacement solar panels, and the Flight Support Structure which will hold and orient the 43-foot-long, 14-foot diameter HST during its repair by the astronauts. Some of the SSE will house the delicate Hubble corrective optics inside Endeavour's payload bay during the mission.

Mission STS-61 is a planned 11-day flight with seven crew members featuring five spacewalks and is entirely dedicated to the servicing of the Hubble Space Telescope.

# # #

Mitch Varnes
407/867-2468

2:30 p.m. EDT
September 23, 1993

KSC Release No. 120-93

CITY GAS COMPANY TO BUILD PIPELINE AND DELIVER NATURAL GAS TO THE KENNEDY SPACE CENTER

NASA's Kennedy Space Center today entered into an agreement with City Gas Company of Rockledge, Fla., a subsidiary of NUI Corp. of Bedminster, N.J., to design and construct a pipeline system and to provide natural gas for use at America's spaceport. The agreement specifies that City Gas Co. will pay the entire cost of the pipeline, and that no government funds will be used for this portion of the agreement. The 10-year agreement is effective today and runs through Sept. 23, 2003.

The multi-faceted agreement represents a major milestone in KSC's ongoing efforts to reduce energy costs and the center's reliability on petroleum-based fuels. "Natural gas is routinely used around the country and has proven to be both an environmentally and economically sound substitute for many of our current energy sources," said KSC Director Robert Crippen. "This is a significant step toward making KSC a more energy efficient work place. I'm confident that this transition to natural gas will save millions of tax dollars in the coming years and decades."

Under the terms of the agreement, City Gas Co. will build an estimated 25-mile pipeline linking much of KSC with a main pipeline spur located near the Orlando Utilities Commission facility, situated south of the NASA Causeway on U.S. Route 1. The pipeline will run along the public rights-of-way of the NASA Causeway and other KSC thoroughfares. Hydraulic dredging will enable the pipeline to cross underneath the Indian River, resulting in no permanent impact to boat traffic. All aspects of the dredging operation will be coordinated with appropriate federal and state officials to assure minimal impact to the Indian River's ecosystem.

Construction of the pipeline will begin this fall and should be complete by mid-to-late 1994. Once operational, the pipeline will enable natural gas to be sent to a large portion of the space center where it will be used to fuel objects ranging from government vehicles to water heaters to entire facilities.

Natural gas will eventually be used for many purposes, but one of the initial roles will be in the area of transportation. Officials are planning to convert 126 of the center's buses, sedans, vans and light trucks from gasoline to natural gas-burning vehicles by the end of 1994. The dozens of tour buses based at Spaceport USA, the KSC visitors center, will be converted to natural gas beginning in 1996, and many of the center's forklifts and delivery trucks will be running on natural gas in the years following. By the end of the decade, it is estimated that natural gas will be the fuel of choice for more than 75 percent of the space center's 2,000 land-roving vehicles.

Among other benefits, KSC's switch to natural gas will result in a dramatic decrease in combustion emissions around the center. By converting large hot water boilers, vehicles and miscellaneous other equipment to natural gas, the amount of sulfur dioxide and similar emissions will be reduced by about 99 percent by the year 2000. The natural gas pipeline will also nearly eliminate the center's annual need for approximately 500 truckloads of petroleum fuel.

A groundbreaking ceremony to commemorate the start of the pipeline is planned to occur within the next couple of months, and construction will begin immediately thereafter.

# # # # #

Mitch Varnes
407/867-2468

October 5, 1993

KSC Release No..122-93

PLANTS ARE IN THE RED, BUT KSC SCIENTISTS STILL REAP DIVIDENDS

NASA's Kennedy Space Center is best known for its spaceships and rocket scientists but some of the center's plant physiologists are plowing new ground in the botanical world and capturing the interest and respect of their professional peers.

Their work is not being conducted in fields or even within striking distance of blindingly bright white laboratory lights but is instead occurring in custom-crafted cubicles where plants spend their entire lives swathed in the glow of red light emitting diodes (LEDs) similar to those that illuminate digital clocks and watches.

A research project intended for a time when astronauts may have to grow their own food in space, this futuristic venture at first seems just the stuff of science fiction. In actuality, it is science fact that, like the Space Shuttle, is continuously yielding new data and preparing us for the day when American astronauts will have a permananent presence in outer space.

The limited growing area aboard NASA's space station or some other yet to be designed long-distance spaceships are the reason KSC plant physiologist Dr. Chris Brown and his colleagues are devoting much of their time toward experimenting with the fingernail-sized LEDs and their effects on plant growth. "Sodium or fluorescent lights work fine in indoor laboratories here on Earth, but we're going to have some substantially different circumstances once we start growing plants in space," Brown commented. "The presence of humans and a less than ideal environment for plant growth makes for some unique challenges."

Those challenges primarily center around the intensity and types of lighting needed to invigorate and substain the plants. Common greenhouse lighting is an unacceptable spaceflight option

-more-

due to a number of drawbacks that include the bulbs' short lifespan, poor energy efficiency, a thin and fragile glass shell and an intolerable amount of heat output -- all things to be considered when placing humans, computers and other electronic equipment together in a compact, microgravity environment.

The idea of using LEDs as an artificial light source for plants is a recent but not entirely new one. Developed and marketed by Quantum Devices, Inc. of Barneveld, Wis., the growth-spurring LEDs have been used for the past few years by scientists at NASA's Ames Research Center, Walt Disney World's EPCOT Center and researchers at the University of Wisconsin and a few other colleges and private institutions.

Growing plants under unnatural colors may seem strange, but the plants don't seem to notice the difference. "Plants only need to receive certain types of color through light, and common broad spectrum lights give us much more energy and heat than what the plants really need or use," Brown said. "LEDs produce very little heat and have a narrow band of light that we've found to be quite effective at stimulating plant growth...Red and blue have proven to be the best colors for promoting photosynthesis and actually enabling us to manage the plant growth."

Red and blue LEDs have not only been proven to stimulate the growth of plants like wheat and pepper, but they also have shown positive results when it comes to nursing diseased crops back to good health. "No matter how hard you work, it's almost impossible to grow an entirely disease-free crop," Brown admitted. "Integrated pest management is a continuous effort here on Earth, and we can only assume that pests will also be a problem in space...One of our objectives is to make sure we've looked at every possible scenario so we don't see too many surprises once we start growing plants in space"

NASA is testing LEDs for their eventual role in space, but spin-offs of this KSC research will likely someday find their way into the commercial marketplace. These garden variety LEDs, which can generate up to one-half the light intensity of mid-day sunlight, may have future uses in commercial gardening, pest management, experimental growth chambers and other areas. "The technology and studies are both really still in their infancy," Brown said. "I think LEDs have a lot of potential and could have far-reaching applications in the years ahead."

# # # # #

Posted: Wed, Jan 26, 1994 9:04 AM EST Msg: VJJE-3131-3108
From: PAO.KSC
To: P, PF, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SITE:INTERNET,ID:<PAOLOOP(a)JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV,
DARLEEN HUNT (FAX:407 867-3395),
STEVE DUTCZAK (FAX:407 867-7242),
ED HARRISON (FAX:407 867-2097),
GUEST OPERATIONS-VIC (FAX:407 867-4327)
Subj: NATURAL GAS RELEASE

Mitch Varnes
407/867-2468

Jan. 26, 1994

KSC Release No. 03-94

CEREMONY MARKING KSC'S SWITCH TO NATURAL GAS SET FOR FEB. 1

A ceremony commemorating the beginning of a new era of energy usage at NASA's Kennedy Space Center is scheduled for 11 a.m. on Tuesday, Feb. 1. Tuesday's event will mark the ceremonious start of an energy program that features environmentally-friendly and domestically-produced natural gas, which will be used throughout KSC for the foreseeable future. The event will be held in the Rocket Garden of Spaceport USA, the KSC visitors center, and is open to the public.

Diesel oil and gasoline have historically been the fuels of choice for most of the government-owned machinery and vehicles at America's Spaceport, but a gradual transition to natural gas-powered equipment and vehicles is now in the works. The first sections of the estimated 25-mile pipeline were set in place this week.

Last fall, KSC entered into a 10-year agreement with City Gas Company of Hialeah, Fla., a subsidiary of NUI Corporation of Bedminster, N.J., to provide natural gas for use at KSC and to construct the pipeline system. City Gas Co. is financing the entire cost of the pipeline, and no taxpayer funds are being used for the materials or construction of the system.

The pipeline will link much of KSC with a main natural gas spur

The dozens of tour buses based at Spaceport USA will be converted to natural gas beginning in 1996, and many of the center's forklifts and delivery trucks will be running on natural gas in the years following. By the end of the decade, it is estimated that natural gas will be the fuel of choice for more than 75 percent of the space center's 2,600 land-roving vehicles.

KSC's switch to natural gas will also result in a substantial decrease in combustion emissions around the center. By converting large hot water heaters, vehicles and miscellaneous other equipment to natural gas, the amount of sulfur dioxide and similar emissions will be reduced by about 99 percent by the year 2000. KSC's move to natural gas will also nearly eliminate the center's annual need for approximately 500 truckloads of petroleum fuel.

The featured speakers at Tuesday's ceremony include KSC Director Robert Crippen, NUI Corporation President and CEO John Kean, American Gas Association Senior Vice President Michael Germain and Natural Gas Vehicle Coalition Executive Director Jeffrey Seisler. Many other senior members of the aerospace and gas-related industries are also expected to be in attendance.

Members of the news media wishing to cover the ceremony may proceed directly to Spaceport USA's Rocket Garden. Public affairs representatives from NASA and NUI Corporation will be on-site to provide background material and to arrange interviews.

# # # # #

Bruce Buckingham
407/867-2468

April 1, 1994

KSC Release No. 40 - 94

STS-59 COUNTDOWN TO BEGIN MONDAY

The countdown for launch of the Space Shuttle Endeavour on mission STS-59 is scheduled to begin Monday, April 4 at 11 a.m. EDT, at the T-43 hour mark.

The countdown includes 26 hours and 7 minutes of built-in hold time leading to the opening of the launch window at 8:07 a.m. (EDT) on Thursday, April 7. The 2 hour, 30 minute window extends until 10:37 a.m.

Mission managers have left available the option to move the opening of the launch window up by one hour if it is determined the weather may not be acceptable at 8:07 but could be acceptable earlier. This decision will be made the day before launch and adjusted at the T-11 hour hold.

The launch of Endeavour will mark the beginning of the third Space Shuttle mission this year and the sixth for the orbiter Endeavour. The STS-59 mission will feature the first of two planned flights of the Space Radar Laboratory (SRL-1) scheduled for this year.

SRL-1 is an Earth-observing payload that will study and obtain images of vegetation coverage, deforestation, wetlands areas, snowpacks and geologic features such as ocean wave heights and wind speeds. Imaging radar can collect data over any region at any time regardless of weather.

In preparation for this flight, Endeavour was rolled out of the Orbiter Processing Facility and to the Vehicle Assembly Building where it was mated to the external tank and solid rocket boosters on March 15. The Shuttle stack was then transported out to pad 39A on March 19. SRL-1 was installed into Endeavour's payload bay on February 15 prior to OPF rollout.

The crew of mission STS-59 are: Commander Sidney M. Gutierrez, Pilot Kevin P. Chilton, and Mission Specialists Linda M. Godwin, Thomas D. Jones, Jay Apt and Michael Richard Clifford.

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The crew is scheduled to arrive at KSC at about 8 a.m. on Monday, April 4. Their activities at KSC for the days prior to launch include flight crew equipment fit checks, medical examinations and opportunities to fly in the Shuttle Training Aircraft and the T-38 trainers.

Beginning on Monday in Firing Room 1 of the Launch Control Center, the KSC launch team will start verifying all systems to assure the Shuttle is powered up and the data processing and backup flight control systems are operating trouble free.

Verifications will be conducted throughout the count to ensure reviews are being made of the flight software stored in the orbiter's twin memory banks. Computer controlled display systems will be activated and the backup flight system general purpose computer will be loaded.

Operations will also be underway to prepare the orbiter for on-board cryogenic loading. Later, orbiter navigation aids will be turned on and tested and the inertial measurement units will be activated.

Ground crews will make the final storage of mid-deck and flight deck supplies, perform microbial samplings of the flight crew's drinking water and check water levels in the waste management system.

At T-27 hours, the countdown will enter its first scheduled hold. This is a four-hour hold lasting from 3 a.m. to 7 a.m. Tuesday.

When the countdown resumes, the launch pad will be cleared of all personnel in preparation for cryogenic fuel loading of the power reactant storage and distribution system tanks located under the payload bay lining. These tanks hold the super-cold liquid hydrogen and liquid oxygen reactants used by the orbiter's fuel cells to provide electricity to the orbiter and drinking water for the crew.

Cryogenic flow is scheduled to start at about 9 a.m. Tuesday and continue for about 5 hours.

As servicing of the cryogenic tanks ends, the clock will enter another four-hour built-in hold at the T-19 hour mark. This hold will last from 3 p.m. to 7 p.m. Tuesday.

Following cryogenic loading operations, the pad will be re-opened for scheduled pre-launch activities and the orbiter mid-body umbilical unit, used to load the super-cold reactants in the orbiter's fuel cell tanks, will be demated and retracted into the launch structure.

When the countdown resumes, technicians will complete final vehicle and facility closeouts and begin activating the orbiter's communications systems and configuring Endeavour's cockpit for flight. The orbiter's flight control system and navigation aids will be activated. The stowable crew seats will be installed in the flight and mid-decks.

The countdown will enter another built-in hold at the T-11 hour mark at 3 a.m. Wednesday. This 14-hour, 47-minute hold will last until 5:47 p.m. Wednesday. During this hold, time critical equipment will be installed in the orbiter's cockpit and the inertial measurement units will be activated and warmed up.

At about 11 a.m. Wednesday, the Rotating Service Structure is scheduled to be moved away from the vehicle and placed in launch position.

At about T-9 hours (7:47 p.m. Wednesday) the onboard fuel cells will be activated. At T-8 hours, the launch team will begin evacuating the blast danger area and clear the pad for loading the external tank with the super-cold cryogenic propellants for the orbiter's main engines. At T-7 hours, 30 minutes, conditioned air that is flowing through the orbiter's payload bay and other areas on the orbiter will be switched to gaseous nitrogen in preparation for fueling the external tank. The inertial measurement units will transition from the warm up stage to the operate/attitude determination mode at T-6 hours, 45 minutes.

The countdown will enter another planned built-in hold at the T-6 hour mark at 10:47 p.m. Wednesday. During this one-hour hold, final preparations for loading the external tank will be completed. Also, a pre-tanking weather briefing will be conducted for the benefit of the Mission Management Team prior to their giving approval to begin tanking operations.

Chilldown of the lines that carry the cryogenic propellants to the external tank begins when the clock starts counting again at 11:47 p.m. Wednesday. Filling and topping off the external tank should be complete about three hours later at the beginning of the next planned hold at T-3 hours, or 2:47 a.m. Thursday.

During the two-hour hold at T-3 hours, the ice inspection team will conduct a survey of the external tank's outer insulation and other Shuttle components. Also, the closeout crew will be dispatched to the pad and begin configuring the crew module and white room for the flight crew's arrival. Liquid oxygen and liquid hydrogen will be in a stable replenish mode during this time to replace any propellant that "boils" off.

The six flight crew members have been divided into two groups and placed on separate sleep-cycles for the around-the-clock operations of the Space Radar Laboratory. The blue team (Apt, Clifford, Jones) will be awakened at 6 p.m. Wednesday and the red team (Gutierrez, Chilton, Godwin) will be awakened at 2:30 a.m. Thursday.

All members of the crew will be seated together for their last meal prior to launch at about 3:35 a.m. Following breakfast/dinner, the crew will receive their briefing on weather conditions at KSC and around the world via satellite from Mission Control, Houston.

The flight crew will suit-up in their partial-pressure suits, then leave the Operations and Checkout Building at about 4:52 a.m. Thursday. They will arrive at the pad 39A white room at about 5:22 a.m. where they will be assisted by white room personnel in getting into the crew cabin.

Just prior to the T-1 hour mark, the test team and the flight crew will get another weather update, including observations from chief astronaut Robert "Hoot" Gibson flying in a Shuttle Training Aircraft in the KSC area.

The last two built-in holds will be 10 minutes in duration and will occur at the T-20 minute mark (7:27 a.m.) and at the T-9 minute mark (7:48 a.m.). During the final hold, the flight crew and ground team receive the NASA launch director's and the mission management team's final "go" for launch.

Milestones after the T-9 minute mark include start of the ground launch sequencer; retraction of the orbiter access arm at T-7 minutes, 30 seconds; start of the orbiter's auxiliary power units at T-5 minutes; pressurization of the liquid oxygen tank inside the external tank at T-2 minutes, 55 seconds; pressurization of the liquid hydrogen tank at T-1 minute, 57 seconds; ground power disconnection from the orbiter at T-50 seconds; and the electronic "go" to Endeavour's onboard computers to start their own terminal countdown sequence at T-31 seconds. The orbiter's three main engines will start at T-6.6 seconds.

COUNTDOWN MILESTONES

Launch - 3 Days (Monday, April 4)

Prepare for the start of the STS-59 launch countdown and perform the call-to-stations at the T-43 hour mark. Countdown begins at 11 a.m. All members of the launch team report to their respective consoles in Firing Room 1 in the Launch Control Center for the start of the countdown.

Start preparations for servicing fuel cell storage tanks and begin final vehicle and facility closeouts for launch.

Launch - 2 Days (Tuesday, April 5)

Enter the first planned built-in hold at T-27 hours for a duration of four hours.

Check out back-up flight system and review flight software stored in mass memory units and display systems. Load backup flight system software into Endeavour's general purpose computers.

Begin stowage of flight crew equipment. Inspect the orbiter's mid-deck and flight-deck and remove crew module platforms. Perform test of the vehicle's pyrotechnic initiator controllers.

Resume countdown.

Clear launch pad of all personnel and begin the 5 hour operation to load liquid oxygen and liquid hydrogen reactants into Endeavour's fuel cell storage tanks.

Enter built-in hold at T-19 hours for a duration of four hours.

After cryogenic loading operations, the pad will be reopened and orbiter and ground support equipment closeouts will resume.

Demate orbiter mid-body umbilical unit. Resume countdown.

Start final preparations of the Shuttle's main engines for main propellant tanking and flight. Activate the orbiter's communications systems, flight controls and navigation systems. Install mission specialists' seats in crew cabin. The tail service masts on the mobile launcher platform will be closed out for launch.

Launch - 1 Day (Wednesday, April 6)

Enter planned hold at T-11 hours for 14 hours, 47 minutes.

Perform orbiter ascent switch list in crew cabin. During this hold at T-11 hours, the orbiter's inertial measurement units will be activated and kept in the "warm up" mode and film will be installed in the numerous cameras on the launch pad. In addition, safety personnel will conduct a debris walkdown and the pad sound suppression system water tank will be filled.

The Rotating Service Structure (RSS) will be moved to the park position during the T-11 hour hold at about 11 a.m. Following the RSS move, final stowage of mid-deck experiments and flight crew equipment stowage will begin.

Resume countdown. Install time critical flight crew equipment and perform the pre-ingress switch list. Start fuel cell flow-through purge.

Activate the orbiter's fuel cells. Configure communications at Mission Control, Houston, for launch. Clear the blast danger area of all non-essential personnel and switch Endeavour's purge air to gaseous nitrogen.

Enter planned one-hour built-in hold at the T-6 hour mark.

Launch team verifies there are no violations of launch commit criteria prior to cryogenic loading of the external tank. Clear pad of all personnel.

Resume countdown. Loading the external tank with cryogenic propellants is set to begin at about 11:47 p.m.

Launch Day (Thursday, April 7)

Complete filling the external tank with its flight load of liquid hydrogen and liquid oxygen propellants.

Perform inertial measurement unit preflight calibration and align Merritt Island Launch Area tracking antennas.

Enter two-hour hold at T-3 hours.

Perform open loop test with Eastern Space and Missile Center and conduct gimbal profile checks of orbital maneuvering system engines.

Wake flight crew (red team) at 2:30 a.m. Closeout crew and ice inspection team proceeds to Launch Pad 39A.

Resume countdown at T-3 hours.

Crew departs Operations and Checkout Building for the pad at 4:52 a.m.

Complete closeout preparations in the white room and cockpit switch configurations.

Flight crew enters orbiter. Astronauts perform air-to-ground voice checks with Launch Control and Mission Control. Close Endeavour's crew hatch. Begin Eastern Space and Missile Center final network open loop command checks.

Perform hatch seal and cabin leak checks. The white room is closed out and the closeout crew moves to fallback area. Primary ascent guidance data is transferred to the backup flight system.

Enter planned 10-minute hold at T-20 minutes.

NASA Test Director conducts final launch team briefings.

Resume countdown. Transition the orbiter's onboard computers to launch configuration and start fuel cell thermal conditioning. Close orbiter cabin vent valves. Backup flight system transitions to launch configuration.

Enter last planned hold at T-9 minutes.

Launch Director, Mission Management Team and NASA Test Director conduct final polls for go/no go to launch.

Resume countdown and:

Start automatic ground launch sequencer (T-9:00 minutes)
Retract orbiter crew access arm (T-7:30)
Start mission recorders (T-5:30)
Start Auxiliary Power Units (T-5:00)
Arm SRB and ET range safety safe and arm devices (T-5:00)
Start liquid oxygen drainback (T-4:55)
Start orbiter aerosurface profile test (T-3:55)
Start MPS gimbal profile test (T-3:30)
Pressurize liquid oxygen tank (T-2:55)
Begin retraction of the gaseous oxygen vent arm (T-2:55)
Fuel cells to internal reactants (T-2:35)
Pressurize liquid hydrogen tank (T-1:57)
Deactivate SRB joint heaters (T-1:00)
Orbiter transfers from ground to internal power (T-0:50 seconds)
LPS go for start of orbiter automatic sequence (T-0:31 seconds)
Ignition of Shuttle's three main engines (T-6.6 seconds)
SRB ignition and liftoff (T-0)

SUMMARY OF HOLDS AND HOLD TIMES FOR STS-59

T-TIME	LENGTH OF HOLD	HOLD BEGINS	HOLD ENDS
T-27 hours	4 hours	3 am Tues.	7 am Tues.
T-19 hours	4 hours	3 pm Tues.	7 pm Tues.
T-11 hours	14 hrs.,47 mins.	3 am Wed.	5:47 pm Wed.
T-6 hours	1 hour	10:47 pm Wed.	11:47 pm Wed.
T-3 hours	2 hours	2:47 am Thurs.	4:47 am Thurs.
T-20 minutes	10 minutes	7:27 am Thurs.	7:37 am Thurs.
T-9 minutes	10 minutes	7:48 am Thurs.	7:58 am Thurs.

CREW FOR MISSION FOR STS-59

Commander (CDR): Sidney M. Gutierrez (Red team)
Pilot (PLT): Kevin P. Chilton (Red team)
Mission Specialist (MS1): Jerome (Jay) Apt (Blue team)
Mission Specialist (MS2): Michael R. (Rich) Clifford (Blue team)
Mission Specialist (MS3): Linda M. Godwin (Red team)
Mission Specialist (MS4): Thomas D. Jones (Blue team)

SUMMARY OF STS-59 LAUNCH DAY CREW ACTIVITIES

Wednesday, April 6, 1994

6:00 p.m.	Wake up (Blue team)
6:30 p.m.	Breakfast (Blue team)
6:30 p.m.	Sleep (Red team)
11:30 p.m.	Lunch (Blue team)

Thursday, April 7, 1994

2:30 a.m.	Wake up (Red team)
3:00 a.m.	Breakfast (Red team)
3:42 a.m.	Dinner (Blue team)
4:12 a.m.	Weather briefing (CDR, PLT, MS2)
4:12 a.m.	Don flight equipment (MS1, MS3, MS4)
4:22 a.m.	Don flight equipment (CDR, PLT, MS2)
4:52 a.m.	Depart for launch pad 39A
5:22 a.m.	Arrive at white room and begin ingress
6:37 a.m.	Close crew hatch
8:07 a.m.	Launch

# # # #

Bruce Buckingham
407/867-2468

April 5, 1994
6:45 p.m.

KSC Release No. 42 - 94

LAUNCH ADVISORY -- STS-59 LAUNCH REMAINS ON SCHEDULE FOR APRIL 8

Borescope inspections performed today of Endeavour's three main engine turbo pumps have indicated they are well within specifications, and the KSC launch team is now proceeding with operations to closeout the aft compartment and launch Endeavour on Friday, April 8.

The decision to perform the inspections on the engines, specifically the high pressure oxidizer turbo pumps, was a result of engineers discovering smaller than permittable vanes, or stationary guides, in the preburner on engines at Canoga Park, Calif. The vanes in the preburner help direct the flow of the liquid oxygen through the turbo pump as it operates under extremely high pressures.

Inspections were conducted at Launch Pad 39A with engineers using a borescope camera to inspect the internal components of the turbo pump. Inspections were completed early this evening.

As a result of the need for the additional inspections, the launch of Endeavour was moved from Thursday to Friday. The two-and-a-half hour window opens at 8:06 a.m. (Remaining in the countdown schedule is the option to launch Endeavour as much as an hour earlier at 7:06 a.m. This option will be implemented the day prior to launch day if mission managers judge the weather may not be acceptable at 8:06 but could be acceptable earlier.)

The launch of Endeavour will mark the beginning of the third Space Shuttle mission this year and the sixth for the orbiter Endeavour. The STS-59 mission will feature the first of two planned flights of the Space Radar Laboratory (SRL-1) scheduled for this year.

# # # #

Bruce Buckingham
407/867-2468

April 18, 1994

Jan Cooksey
805/734-8232 (ext. 5-3820)

KSC Release No. 46 - 94

LAUNCH ADVISORY -- SCOUT LAUNCH DELAYED TO NO EARLIER THAN MAY 6

NASA has rescheduled the launch of a Solid Controlled Orbital Utility Test (Scout) vehicle from Space Complex 5 at Vandenberg Air Force Base, Calif., from April 19 to no earlier than May 6, 1994. Scout will carry a Department of Defense payload called Miniature Seeker Technology Integration (MSTI-2) into low Earth orbit.

The problem, discovered Friday, is related to contamination found on electrical relays on the MSTI-3 payload, which is being prepared for launch at a later date. Since identical relays are on MSTI-2, the decision was made to stand down while the relays on MSTI-2 are replaced. MSTI-2 is the second in a series of satellites that will support the development of advanced theater missile defenses for the armed forces.

This launch is the last for the Scout vehicle, a dependable four-stage expendable launch system that has been in service since 1960. This launch will be the 118th for the Scout program in its 34 year career.

Scout will place the 355-pound MSTI-2 spacecraft into a 325 km by 375 km orbit at an inclination of 97.13 degrees.

# # # #

Bruce Buckingham
407/867-2468

April 18, 1994

KSC RELEASE NO. 47 - 94

ENDEAVOUR SCHEDULED TO LAND AT KSC

The orbiter Endeavour is scheduled to land at Kennedy Space Center on Tuesday, April 19 at 11:52 a.m. EDT, at the end of its current STS-59 mission, which was launched from KSC April 9.

Landing of Endeavour at KSC's Shuttle Landing Facility (SLF) is slated for orbit 166 at mission elapsed time of 10 days, 4 hours and 47 minutes. Deorbit burn will occur on orbit 165 at about 10:58 a.m. Tuesday, at 10 days, 3 hours and 53 minutes.

A second KSC landing opportunity on Tuesday occurs on orbit 167 at 1:23 p.m. Two additional opportunities for landing at KSC exist on Wednesday at about 11:30 a.m. and 1:02 p.m. Two landing opportunities exist at Edwards Air Force Base, Calif., on Tuesday and Wednesday.

During descent for landing at KSC on Tuesday, Endeavour will cross the Florida/Georgia state line entering Florida airspace near Amelia Island on the east coast of Florida (north of Jacksonville) and travel south along the beach passing over the coastal cities of St. Augustine and Daytona Beach before touching down at KSC's SLF.

The orbiter will pass over Amelia Island about 10 minutes before touchdown at an altitude of about 120,000 feet, traveling at a speed greater than Mach 5. The orbiter will pass over St. Augustine about 7 minutes before touchdown at an altitude of about 88,000 feet, traveling at a speed of about Mach 3.

Shuttle Landing Facility

Built in 1975, the SLF is 300 feet wide and 15,000 feet long with 1,000 foot overruns at each end. The strip runs northwest to southeast and is located about 3 miles northwest of the Vehicle Assembly Building.

Tomorrow's landing of Endeavour will mark the twenty-first landing at KSC in the history of Space Shuttle flight. It will be the third KSC landing this year.

-- more --

PREVIOUS SHUTTLE LANDINGS AT KSC

1) 41-B - Challenger, Feb. 11, 1984
2) 41-G - Challenger, Oct. 13, 1984
3) 51-A - Discovery, Nov. 16, 1984
4) 51-C - Discovery, Jan. 27, 1985
5) 51-D - Discovery, April 19, 1985
6) STS-38 - Atlantis, Nov. 20, 1990
7) STS-39 - Discovery, May 6, 1991
8) STS-43 - Atlantis, Aug. 11, 1991
9) STS-45 - Atlantis, April 2, 1992
10) STS-50 - Columbia, July 9, 1992
11) STS-46 - Atlantis, Aug. 8, 1992
12) STS-47 - Endeavour, Sept. 18, 1992
13) STS-52 - Columbia, Nov. 1, 1992
14) STS-54 - Endeavour, Jan. 19, 1993
15) STS-56 - Discovery, April 17, 1993
16) STS-57 - Endeavour, July 1, 1993
17) STS-51 - Discovery, Sept. 22, 1993
18) STS-61 - Endeavour, Dec. 13, 1993
19) STS-60 - Discovery, Feb. 11, 1994
20) STS-62 - Columbia, March 18, 1994

KSC End Of Mission Landing Weather Constraints

At decision time for the deorbit burn (about 90 minutes before landing), general weather restrictions for a KSC landing are specified in part as:

* Visibility must be five miles or greater;

* Peak surface winds must be less than 20 knots in any direction;

* The peak crosswinds must not exceed 15 knots, 12 knots at night. If the mission duration is greater than nine days the limit is 12 knots, day or night;

* The cloud ceiling must be greater than 10,000 feet. For scattered clouds below 10,000 feet, cloud cover must be observed to be less than 20 percent;

* There can be no precipitation at the surface or aloft in the proximity of the orbiter's glide path;

* Thunderstorms, rain or the potential for lightning cannot exist within 30 nautical miles of the landing site;

* Vertical cloud clearance at the 30 nautical mile range must be greater than 2 nautical miles;

KSC Ground Operations

Once the orbiter is on the ground, safing operations will commence and the flight crew will prepare the vehicle for post-landing operations. The Crew Transport Vehicle (CTV) will be used to assist the crew, allowing them to egress the vehicle and doff their launch and re-entry suits easier and quicker.

The CTV and other KSC landing convoy operations have been in an "on-call" status since the launch of Endeavour April 9. The primary functions of the Space Shuttle recovery convoy are to provide immediate service to the orbiter after landing, prepare the orbiter for towing to the Orbiter Processing Facility and assist crew egress.

Convoy vehicles are stationed at the SLF's mid-point. About two hours prior to landing, convoy personnel don SCAPE suits, or Self Contained Atmospheric Protective Ensemble, and communications checks are made.

A warming up of coolant and purge equipment is conducted and nearly two dozen convoy vehicles are positioned to move onto the runway as quickly and as safely as possible once the orbiter coasts to a stop. When the vehicle is deemed safe of all potential explosive hazards and toxic gases, the purge and coolant umbilical access vehicles move into position at the rear of the orbiter.

Following purge and coolant operations, flight crew egress preparations will begin and the CTV will be moved into position at the crew access hatch located on the orbiter's port side.

Once access to the vehicle is gained, a physician will board the shuttle and conduct a brief preliminary examination of the astronauts. The crew will then make preparations to leave the vehicle.

About 2 hours, 40 minutes after landing, the orbiter will be towed to Orbiter Processing Facility bay 1 for post-flight deservicing and preparations will begin for its next scheduled mission, STS-68, in August 1994.

Following departure from the SLF, the crew will be taken to their quarters in the O&C Building, meet with their families, undergo a physical examination and depart for the skid strip at Cape Canaveral Air Force Station for their flight back to JSC.

The crew is planning to depart for JSC roughly 5 to 6 hours after landing. The exact time of departure will be determined following touchdown.

In the event a landing at KSC is not feasible and Endeavour lands at Edwards, an augmented KSC convoy team will be on-site to safe the vehicle, disembark the crew and move the orbiter to the Mate/Demate Device. The turnaround team will be deployed to Edwards by charter aircraft on landing day.

# # # #

NOTICE TO EDITORS: Media wishing to view Endeavour's landing should plan on being at the press site between 8 and 10:30 a.m. for transport to the SLF. Other specific information is available at the KSC news center regarding landing photo opportunities, the post landing press conference, crew departure photo opportunities and news center operational hours.

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

Ed Campion
Headquarters, Washington, D.C.
(Phone: 202/358-1780)

Lisa Malone
Kennedy Space Center, Fla.
(Phone: 407/867-2468)

For Release
April 19, 1994

RELEASE: C94-j

KSC SELECTS TWO COMPANIES AS LIQUID HYDROGEN SUPPLIERS

Praxair, Inc., Danbury, Conn., and Air Products and Chemicals, Inc., Allentown, Pa., have been selected for negotiations that could lead to the award of 15-year contracts to supply liquid hydrogen to government and contractor facilities.

NASA uses super-cold liquid hydrogen as fuel to help power the Space Shuttle's three main engines during the ascent phase of flight, ground testing and propulsion development. The propellant, also used in the Space Shuttle's onboard fuel cells, is mixed with liquid oxygen to produce power for the Shuttle and drinking water for the astronauts.

To foster competition, the solicitation divided the Eastern United States into two user regions. Region A consists of Stennis Space Center, Bay St. Louis, Miss. Region B includes Marshall Space Flight Center, Huntsville, Ala.; Kennedy Space Center, Fla.; Pratt & Whitney, West Palm Beach, Fla.; Arnold Engineering Development Center, Arnold Air Force Base, Tenn.; and Johnson Space Center, Houston.

The fixed-price requirements contracts have an economic price adjustment feature after the first year. Praxair was selected for Region A, which has an estimated contract value of $150 million. Air Products and Chemicals was selected for the Region B contract with an estimated value of $160 million.

Both contracts will have a vendor preparation period which will commence at contract award and continue until Nov. 30, 1995. Liquid hydrogen deliveries will begin Dec. 1, 1995, and continue through Nov. 30, 2010.

-more-

Praxair will manufacture liquid hydrogen in McIntosh, Ala., and will deliver the fuel by railcars and tanker trucks. New Orleans, La., and Pace, Fla., are the liquid hydrogen manufacturing sites that Air Products and Chemicals will use. The company will deliver the product by tanker trucks.

-end-

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 453-8400

ISY

Mark Hess
Headquarters, Washington, D.C.
(Phone: 202/358-1776)

For Release

April 28, 1994

RELEASE: 94-66

NASA ANNOUNCES SPACE FLIGHT PERSONNEL CHANGES

Associate Administrator for Space Flight Jeremiah Pearson today announced key personnel changes in the Office of Space Flight (OSF), NASA Headquarters, Washington, D.C.

Effective immediately, Tom Utsman, currently Deputy Associate Administrator (Space Shuttle), OSF, will return to the Kennedy Space Center (KSC), Fla., to become Special Assistant to the Associate Administrator, OSF. Bryan O'Connor, OSF Deputy Associate Administrator will replace Utsman and also serve as Space Shuttle Program Director.

Effective May 9, Richard Wisniewski, who retired from NASA in 1990 after a government career spanning 35 years, is returning to NASA to replace Brian O'Connor as Deputy Associate Administrator, OSF.

Pearson also announced that Michael Mann, Deputy Associate Administrator (Management), OSF, has been named Deputy Associate Administrator (Management) for NASA Headquarter's Office of Mission to Planet Earth. Wisniewski also will serve as Acting Deputy Associate Administrator (Management), OSF.

As Space Shuttle Program Director, O'Connor will assume responsibility for the management of the Space Shuttle Program. O'Connor, a former NASA astronaut, served as commander of the first Spacelab Life Sciences mission, STS-40, in June 1991, and as pilot on mission 61-B in November 1985. During the period following the Challenger accident, O'Connor served as Assistant to the Shuttle Program Manager from March 1986 until February 1988.

O'Connor helped guide the effort that led to the resumption of Shuttle flights in September 1988. He is a distinguished Marine Corps pilot and graduate of the U.S. Navy Test Pilot School. He also is a graduate of the U.S. Naval Academy and earned a Masters of Science degree in Aeronautical Systems from the University of West Florida. O'Connor served as an astronaut from 1980 to 1991.

-more-

Utsman will be returning to KSC where he held a number of key positions, including Deputy Director from August 1985 until his assignment to NASA Headquarters in January 1990.

Utsman's first assignment at NASA Headquarters was Deputy Associate Administrator for Space Flight (Management) which he held for approximately 6 months prior to being named Deputy Associate Administrator in June 1990. He was named Space Shuttle Director in June 1992.

Utsman began his career in 1963 as a facilities design engineer for the Apollo Program. He holds a Bachelor of Science degree in Mechanical Engineering from the University of Michigan and a Masters degree in Management from Florida State University.

Wisniewski currently is Director, Program Analysis Group, General Research Corp., Vienna, Va. His last position at NASA was as the Deputy Associate Administrator (Institutions), OSF. The Deputy Associate Administrator, OSF, is responsible for resources, policy and plans, human resources and management of the four Space Flight installations, Kennedy Space Center, Fla.; Johnson Space Center, Houston; Marshall Space Flight Center, Huntsville, Ala., and Stennis Space Center, Miss.

Wisniewski began his career at the Lewis Research Center, Cleveland, Ohio, as an aeronautical research engineer. He was staff scientist for the OSF during the Apollo Program, Director of Advanced Concepts in the former Office of Aeronautics and Space Technology and Deputy Associate Administrator for the Center Operations in the former Office of Management, Washington, D.C. Wisniewski has a Bachelor of Science degree in physics from John Carroll University.

Mann was named Deputy Associate Administrate (Management), OSF, in July 1993. Prior to that, he served as Director, Resource Management, responsible for managing the OSF's budget. Before joining the OSF, he spent 9 years in NASA's Comptrollers Office in a variety of cost analysis and resources management positions including Deputy Director, Resources Analysis Division. In that position Mann had oversight responsibility for all NASA programs and played a key role in the development of NASA program control and financial management policies.

A U.S. Army veteran, Mann is a graduate of the Virginia Polytechnic Institute with an MBA in Operations Research.

-end-

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Bruce Buckingham
407/867-2468

May 8, 1994
8:00 p.m. PDT

NASA's LAST SCOUT LAUNCH SUCCESSFUL FROM VANDENBERG AFB, CALIF.

NASA's last Scout expendable launch vehicle carrying a Department of Defense satellite was successfully launched today from Space Launch Complex 5 at Vandenberg Air Force Base, Calif. Liftoff occurred at 7:47 p.m. PDT. Spacecraft separation occurred about 12 minutes, 30 seconds after launch.

This was the 118th and last NASA launch for the Scout vehicle, a dependable four-stage expendable launch system that has been in service since its first launch on July 1, 1960.

Scout's last payload was the second in a series of Miniature Sensor Technology Integration (MSTI) satellites, an atmospheric studies spacecraft operated by DOD's Ballistic Missile Defense Organization.

Scout placed the 360-pound MSTI-2 spacecraft into a 248.4 mile-high circular orbit at an inclination of 97.13 degrees.

The Scout rocket has been one of America's most experienced and reliable rockets. It was manufactured by Loral Vought Systems, Dallas, Tx.

# # # #

Posted: Mon, May 23, 1994 3:51 PM EDT Msg: YJJE-3151-3753
From: PAO.KSC
To: P, PF, PAOLOOP.NASAMAIL,
(C:USA,ADMD:TELEMAIL,PRMD:GSFC,O:GSFCMAIL,UN:PUBINFO),
(SITE:INTERNET,ID:<PAOLOOP(a)JPL.NASA.GOV>),
(C:USA, ADMD:TELEMAIL, PRMD:GSFC, O:GSFCMAIL, UN:JRUFF),
DRYDENTV
Subj: COSMONAUT TO PLANT TREE

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

For Release:

Lisa Malone
(407) 867-2468

May 23, 1994

KSC RELEASE No. 58-94

NOTE TO EDITORS/NEWS DIRECTORS:
COSMONAUT TO PLANT TREE IN COMMEMORATION OF MISSION STS-60 MAY 24

News media representatives are invited to observe and photograph a tree-planting ceremony by Cosmonaut Sergei Krikalev on May 24 at 12:50 p.m. in KSC's Industrial Are to commemorate Mission STS-60 launched last January. Krikalev became the first Russia to fly aboard the Space Shuttle.

KSC Launch Director Bob Sieck, STS-60 Commander Charlie Bolden and Krikalev are scheduled to make brief statements at a site near the KSC Training Auditorium where Krikalev will plant a live oak tree.

As part of Russian tradition, cosmonauts plant trees in Russia following each of their space flights. During recent trips to Russia, KSC officials became aware of the tradition and wanted to incorporate the tree plantings locally. More trees will be planted at KSC by cosmonauts after they fly aboard the Shuttle.

Sieck will place a plaque near the tree with an inscription to identify its significance.

News media representatives should be at the KSC Press Site by 12:15 p.m. tomorrow for escort to KSC's Industrial Area for the ceremony. Those needing credentials should contact the News Center for arrangements.

# # # #

KSC FORM 2-160A (REV. 10/92)

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 407 867-2468

George H. Diller
407/867-2469

For Release:
August 1, 1995

KSC Release No.: 75-95

SOHO ARRIVES AT KSC TO BE PREPARED FOR ATLAS LAUNCH

The Solar and Heliospheric Observatory (SOHO) of the European Space Agency (ESA) arrived at the Shuttle Landing Facility today from Toulouse, France aboard an Air France 747 cargo plane.

The SOHO spacecraft will carry a complement of eleven instruments from ESA and NASA and is part of a larger effort known as the International Solar-Terrestrial Physics (ISTP) science initiative.

SOHO will have a superlative view of the Sun from a circular orbit around a point know as the "L-1 Lagrangian point." This is located approximately 930,000 miles from Earth and is where the gravitational forces of the Earth and Sun balance one another. SOHO will then study the origin of the energy within the Sun which reaches the Sun's surface. Part of this energy is transported to Earth as solar wind.

SOHO will receive final testing and preparation for launch in the Spacecraft Assembly and Encapsulation Facility (SAEF-2) located in the KSC Industrial Area. Several processing activities will take place on the payload module to prepare the science instruments for launch. Also, the solar arrays will be attached with the service module which holds the spacecraft subsystems. All of the instruments will be checked out as part of an overall spacecraft functional test and a compatibility check with NASA's Goddard Space Flight Center in Greenbelt, Md. The high gain communications antenna will also have a test release and the spacecraft communications and data systems will be checked. The thermal blanket insulation will be attached and the spacecraft control propellant loaded aboard.

SOHO is approximately 12.5 feet in height by 12.1 feet in diameter and weighs approximately 4,080 pounds. It was manufactured in France by Matra Marconi under a contract with the European Space Agency.

In mid-October the spacecraft is scheduled to be transported to Pad B at Launch Complex 36 for mating with the Atlas IIAS, an Atlas Centaur launch vehicle featuring two solid rocket boosters. Lockheed Martin manufactures the launch vehicle and is under contract with the NASA Lewis Research Center to provide the launch services. The Kennedy Space Center is responsible for the government technical oversight of launch vehicle preparations and the launch day countdown activities. The liftoff is targeted to occur between Oct. 31 and Nov. 7, 1995.

ESA has the overall mission responsibility while NASA is responsible for the collection and dissemination of the SOHO science data through the Goddard Space Flight Center and the Deep Space Network at the Jet Propulsion Laboratory, Pasadena, Calif. NASA's participation in the SOHO program is managed by the Space Physics Division of NASA Headquarters.

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Launius, Roger

From: NPAWBB
To: ksc-press-release
Subject: KSC to Host Community Leaders Breakfast
Date: Monday, April 15, 1996 4:27PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

April 15, 1996

KSC RELEASE NO. 38-96

KSC TO HOST ANNUAL COMMUNITY LEADERS BREAKFAST ON APRIL 19

The annual community leaders breakfast will be held April 19 at the KSC Visitor Center. KSC Director Jay Honeycutt will meet with community leaders from Brevard County and the State of Florida to review the 1995 space center milestones and present short and long term future projections of America s space program and the economic impact these plans may have on the local community.

Community leaders will gather at the Galaxy Center at 8 a.m. for a continental breakfast and then proceed to the IMAX 2 Theater for Honeycutt s remarks at 9 a.m. Following the briefings and presentations, attendees will get an inside look at KSC during a two-hour bus tour of the center.

Over 400 community leaders are expected to attend the half-day event.

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Launius, Roger

From: NPALAM
To: ksc-press-release
Subject: Efforts underway to relocate KSC's Saturn V components
Date: Thursday, April 18, 1996 5:07PM

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center, Florida 32899

AC 407 867-2468

For Release:

Bruce Buckingham April
18, 1996
407-867-2468

KSC RELEASE NO. 43 - 96

EFFORTS UNDERWAY TO RELOCATE KSC's SATURN V COMPONENTS

A historic Kennedy Space Center landmark, the Saturn V located near the Vehicle Assembly Building, is being prepared for relocation to its new viewing site on the Space Center.

The 363 foot-long Apollo-era rocket has been on display at KSC in an un-mated, horizontal configuration since 1976 when it was part of the U.S. Bicentennial Exposition of Science and Technology. Since that time, it has remained on display alongside the Saturn V Causeway and used as a popular tourist stop and KSC landmark.

In January 1979, under the NASA-National Air and Space Museum Artifacts Agreement, NASA turned over the title of the Saturn V at KSC to the Smithsonian Institution.

In December 1995, Delaware North Park Services of Spaceport, Inc., the Kennedy Space Center Visitor Center concessioner, awarded a contract to Thomarios Painting Company, Norton, Ohio, to perform preservation and stabilization work on the Saturn V vehicle. These efforts have been closely coordinated with officials of the Air and Space Museum, Washington, D.C.

Now with construction of the new Apollo/Saturn V Center nearing completion, the rocket will be moved to its new viewing location in a way similar to how it was originally intended to deliver astronauts to the lunar surface -- one stage at a time.

The first artifact to be moved to the new Apollo/Saturn V Center will be the Command Service Module (CSM). The CSM has been housed in the former Flight Crew Training Facility in KSC's industrial area, where it has been displayed with other artifacts from the Apollo era. The move of the CSM is scheduled for 9 a.m. Friday, April 19.

Beginning next week, components of the Saturn V rocket that have been on display outside the VAB will be transported to the Apollo/Saturn V Center. On Apr. 23, the upper stages (the Command Module, the Service Module, the Launch Escape System and the Spacecraft-Lunar Module Adapter) will be moved. The Saturn V second stage will be moved on Apr. 27. Then on May 11, the Saturn V first stage, along with its attached five main engines, will be transported to the new viewing site.

The Apollo/Saturn V Center is located about 2 miles north of the Vehicle Assembly Building on the Kennedy Parkway, near the current Banana Creek VIP Shuttle launch viewing site.

Final construction of the Apollo/Saturn V Center will be completed in December 1996 and open soon thereafter for visitors from the Kennedy Space Center Visitor Center.

No appropriated funds are being used in connection with the Apollo/Saturn V Center or in the restoration of the vehicle. Funding for this project is provided by bus tour ticket surcharges and from state arranged funding under an interagency agreement between KSC and the Spaceport Florida Authority (SFA) and South Trust Bank of Alabama. Under the arrangement, SFA will provide the financing and own the building under a NASA-granted Use Permit until such time as the outstanding project debt is fully paid.

-- end --

NOTE TO EDITORS: A photo opportunity and brief tour of the Apollo/Saturn V Center, which is still under construction, is planned for 11 a.m. Friday, April 19. Media interested in seeing the facility should be at the KSC Press Site at 10:30 a.m. Friday for transport to the site. The CSM is scheduled to be on location at that time.

Launius, Roger

From: NPAWBB
To: ksc-press-release
Subject: KSC Release 55 - 96
Date: Wednesday, May 08, 1996 4:02PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release: May 8, 1996

KSC Contact: Bruce Buckingham

KSC RELEASE NO. 55 - 96

PHOTO OPPORTUNITY AVAILABLE FOR MOVE OF KSC s SATURN V FIRST STAGE

The first stage of Kennedy Space Center s historical Saturn V landmark will be relocated to its new viewing site on Saturday, May 11. This element of the Saturn V rocket is the last major component to be moved from its original viewing location in front of KSC s Vehicle Assembly Building where it has been on display as a popular tourist stop for the past 20 years. The move is scheduled to begin at about 10 a.m. Saturday.

The first components of the Saturn V were moved last month to the new facility which is designed to highlight NASA s Apollo-era accomplishments, specifically the Saturn V launch vehicle. The 363 foot-long rocket will be on permanent display in the new Apollo/Saturn V Center, which is still under construction.

The Apollo/Saturn V Center is located about 2 miles north of the Vehicle Assembly Building on the Kennedy Parkway, near the current Banana Creek VIP Shuttle launch viewing site. Final construction of the center will be completed in December 1996 and open soon thereafter for visitors from the Kennedy Space Center Visitor Center.

In December 1995, Delaware North Park Services of Spaceport, Inc., the Kennedy Space Center Visitor Center concessioner, awarded a contract to Thomarios Painting Company, Norton, Ohio, to perform preservation and stabilization work on the Saturn V vehicle. These efforts have been closely coordinated with officials of the Smithsonian National Air and Space Museum, Washington, D.C., which has title to the vehicle.

-- end --

Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: KSC Release No. 56-96
Date: Thursday, May 16, 1996 11:57AM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release: May 15, 1996

KSC Contact: Joel Wells

KSC Release No. 56-96

THOUSANDS OF TINY SEA ANIMALS HELP NASA, CSA ANSWER BIG LIFE SCIENCE QUESTIONS

NASA and the Canadian Space Agency (CSA) are taking life science research to new heights. CSA*s Aquatic Research Facility (ARF) or *Space Aquarium* is scheduled to launch with the Space Shuttle Endeavour on May 19.

One thousand mussel larvae, 32,000 sea urchin eggs and 6,000 starfish embryos make up the list of passengers to be stowed aboard Canada*s first life science payload in space. This zoo of marine life is the focus of three studies that will address world-wide concerns ranging from birth defects to dwindling fish stocks in our oceans.

Housed in what looks like a suitcase carrying two carousels from a compact disc player, the aquatic specimens will be observed by two tiny videocameras in two separate environments. Kennedy Space Center (KSC) life science personnel will take part in the monitoring and maintenance of the experiments in-flight.

One carousel spins, imitating the Earth*s gravity and the other provides a gravity-free environment so scientists can compare the two conditions side by side. A third set of specimens is being watched at KSC to insure that gravity is the only varying factor in the experiment.

Dr. Heide Schatten, a professor of zoology at the University of Wisconsin-Madison, is the principal investigator on the U.S. portion of the experiment. It will begin three hours after launch when astronauts inject a sperm concentrate into a container full of sea urchin eggs using a unique KSC developed syringe.

The new syringe, made from off-the-shelf materials, allows very small, exact injections of fluid. It protects the user from needle injury and has a triple containment feature that prevents fluid from leaking in the near zero gravity environment of space.

Dr. Schatten will observe the effects of spaceflight on the early stages of embryo development. The study will provide insight into the causes and cures of both osteoporosis and muscular dystrophy.

One of the two CSA experiments focuses on the calcium formation of a mussel*s shell and the development of its feeding mechanism. Dr. Ron O*Dor, a professor at Dalhousie University in Nova Scotia, hopes his investigation will shed some light on the causes of calcium depletion experienced by humans in space.

Today*s astronauts take daily, three-hour exercise breaks to maintain healthy bones and muscles in space. The results from this experiment apply directly to the planned long term stays on the International Space Station.

Another CSA experiment looks at the effects of zero gravity on the starfish embryo. In very early stages of development they are remarkably similar to human embryos. From this study, Bruce Crawford, department biologist for the University of British Columbia, hopes to learn how to predict and control early birth defects in humans.

The invertebrate*s unusual swimming and feeding patterns will also be studied to gain insight into how we can better manage our oceans* fish populations and feed ourselves. Both CSA experiments will help researchers understand how these small sea creatures contribute to the removal of greenhouse gases in the atmosphere.

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Note to editors: An informal press briefing discussing the ARF experiments will be held at the KSC Press Site at 10 a.m. on Friday, May 17. Representatives from CSA and NASA will be available for interview. Still photos and video are available upon request.

Launius, Roger

From: NASANews
To: press-release-nasa
Subject: NASA TV to Offer New Viwes of Crew, Launch and Landing
Date: Wednesday, June 19, 1996 4:07PM

Michael Braukus June 19, 1996

Headquarters, Washington, DC
(Phone: 407/867-2468)

Joe Benton
Headquarters, Washington, DC
(Phone: 407/867-2468)

Bill Johnson
Kennedy Space Center, FL
(Phone: 407/867-2468)

VIDEO ADVISORY: V96-75

NASA TV TO OFFER NEW VIEWS OF CREW, LAUNCH AND LANDING

For the first time, NASA Television will offer live views of astronauts inside the crew module of the Shuttle Columbia as they are being strapped in for launch on Thursday, June 20. In addition, seconds before launch, there will be a picture-in-picture view of the Shuttle on the pad with an inset of the three main engines as they start and come up to full thrust.

An inset of Columbia's main engines will appear at T-15 seconds through about T-2 seconds. NASA Television will provide the usual clean video feed of the vehicle as it clears the launch structure through ascent.

The Kennedy Space Center also will provide the usual cadre of video feeds of different views of the STS-78 launch vehicle on several video stumps at the press site.

This mission also will be the first to attempt a live downlink of television images from the Shuttle during descent. The "Pilot Point of View" (PPOV) camera and perspective will be used for all future Columbia missions.

The PPOV camera is mounted on the "dashboard" adjacent to the vertical strut separating the two forward windows in the flight deck of Columbia. This camera will provide a clear, unobstructed view out the window identical to what the Shuttle's pilot will see during reentry.

Acquisition of the video S-band signal by the Merritt Island Tracking Station is expected when the Shuttle is about 300 miles from the Shuttle Landing Facility traveling at approximately Mach 10.

A second camera will be used to show live crew buckle-in activities prior to launch. The camera also will be used to record crew activity during ascent and descent.

STS-78 is the second Shuttle mission to employ a color television camera mounted in the upper deck crew cabin as a Detailed Test Objective. The first Shuttle mission that used an onboard crew camera was STS-65 in June 1994.

Information on STS-78 is available through several sources on the Internet. The primary source for mission information is the NASA Shuttle Web, part of the World Wide Web. This site contains information on the crew and their mission and will be regularly updated with status reports, photos and video clips throughout the flight. The NASA Shuttle Web's address is:

http://shuttle.nasa.gov

If that address is busy or unavailable, Shuttle information is available through the Office of Space Flight Home Page:

http://www.osf.hq.nasa.gov/

-end-

Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: TRDA release
Date: Wednesday, June 19, 1996 12:22PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Joel Wells

June 19, 1996

KSC Release No. 74-96

KSC ENGINEERS HELP SOLVE INDUSTRY PROBLEMS

Twenty Kennedy Space Center (KSC) engineers were recently recognized by NASA and the state of Florida's Technological Research and Development Authority (TRDA) for providing technical help to hundreds of Florida businesses.

Awards were presented by Florida State Senator Patsy Kurth during the NASA/TRDA 2nd Annual Technology Outreach Program Workshop on June 6. "The event focused on how KSC and the state of Florida cooperate to extend the benefits of space exploration and research to businesses across the state," said Frank Kinney, TRDA's executive director. TRDA is an independent state agency which provides space-related education and research grants as well as working with NASA to promote technology transfer to industry.

KSC's Technology Programs and Commercialization Office has received 434 requests for help from businesses in the southeastern United States during the past year of which 374 came from Florida companies. The requests are submitted in the form of a Technology Transfer Agreement or problem statement. Each request initiates a working relationship between NASA and the sender.

"The simplicity of initiating a Technology Transfer Agreement is one of the reasons we have seen such a positive response to the program," said Chuck Griffin, KSC's Technology Outreach coordinator. "Sometimes we receive the one-page application filled out by hand."

A committee of NASA and contractor employees reviews each problem statement and then assigns it to an engineer with expertise in that area.

"Companies have presented problems that range from redesigning dentistry tools to keeping sea turtles out of a nuclear power plant's intake canal," said Griffin.

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-2-

NASA allows the engineer to work the problem directly with a company for up to 40 hours. "If you think of the hours of free talent and expertise that small businesses can now tap into through this program, the economic impact is quite obvious," said Senator Kurth.

The award recipients from NASA, EG&G Florida, Inc., Dynamac Corporation, I-NET, Inc., Lockheed Martin Space Operations and McDonnell Douglas Aerospace and Defense Systems are credited with successfully closing 283 of the problem statements to date.

"NASA's effort to accelerate the transfer of space technology to industry is right on track. This program, is already proving its worth with in the first year of operation at KSC," said Bill Sheehan, chief, KSC's Technology Programs and Commercialization Office.

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: Lightning Release
Date: Wednesday, June 19, 1996 2:54PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Joel Wells

June 19, 1996

KSC Release No. 75-96

NASA INTRODUCES LIGHTNING MAPPING SYSTEM TO COMMERCIAL MARKET

Despite being located in an area with the greatest amount of lightning activity in the United States, a NASA developed Lightning Detection and Ranging (LDAR) system has provided a safe, productive work environment at the Kennedy Space Center (KSC) and the Eastern Range since 1992. Now private industry and the public at large stand to benefit from the space age technology.

NASA has signed a Space Act Agreement with Global Atmospherics, Inc. (GAI) of Tucson, AZ, to begin joint work on development of an LDAR system that meets both NASA and commercial needs. The technology has commercial application in the electric utility, aviation, atmospheric research, commercial rocket launch, recreation, construction and meteorological industries.

"The 45th Weather Squadron at Cape Canaveral Air Station uses LDAR to accurately inform KSC of any lightning threats in the area," said John Madura, manager of KSC's weather office. Cape Canaveral Air Station and the National Weather Service in Melbourne, Fl are the only organizations currently using this system.

Current two-dimensional commercial systems only locate cloud-to-ground lightning. NASA's three-dimensional LDAR system also pinpoints the location and altitude of in-cloud and cloud-to-cloud lightning by measuring the exact arrival times of electromagnetic pulses.

"When you hear a crackle of lightning over your radio, you are listening to an electromagnetic pulse. Since the speed of light is

constant, once we know the time of a pulse we can figure out exactly how far away the lightning is," explained Carl Lennon, KSC Information Systems Division.

-more-

-2-

The system detects the VHF or very high frequency radiation and maps the volume of the lightning activity. The result is a three-dimensional presentation of the local activity and the threat that it presents.

GAI designs, manufactures and markets commercial lightning detection systems that are used worldwide for collection, analysis, display and dissemination of lightning related information. They bring the expertise and resources to this partnership that are necessary to expedite commercialization.

"This collaboration between GAI and NASA brings together two organizations respected in this field of study and should benefit the public with an extremely solid new product," said GAI President, Pat Zumbusch.

The 2-year agreement does not require an exchange of funds, but does assign responsibilities to both parties. GAI will focus on improving the location accuracy, small signal detection, and flexibility of NASA's existing system. After reducing the cost of transmitting and displaying data, a commercial version of the system will be available.

NASA will operate the LDAR system, allowing GAI to compare their newly developed systems to it. NASA will also assist GAI with the design and evaluation of various system components and allow them to use existing equipment, facilities and weather data.

"This agreement is the perfect example of NASA working together with industry to bring space age technology down to earth," said Bill Sheehan, KSC's Technology Programs and Commercialization Office. "The space program, commercial market and general public will benefit a great deal from this project."

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: Discovery returns to KSC next week
Date: Friday, June 21, 1996 5:04PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:
Bruce Buckingham
June 21, 1996

NOTE TO EDITORS
KSC RELEASE NO. 80 - 96

DISCOVERY SET TO RETURN TO KSC NEXT WEEK

The orbiter Discovery, NASA's most experienced Space Shuttle vehicle, will return to Kennedy Space Center next week after spending nine months at Palmdale, CA. Discovery was sent to Rockwell's Orbiter Assembly Facility in Palmdale as part of a regularly scheduled Orbiter Maintenance Down Period (OMDP), an action that periodically removes all orbiters from flight operations.

Work on Discovery during the OMDP, in addition to the normal series of structural and thermal protection system inspections, included the addition of hardware necessary to install an external airlock and installation of a 5th set of cryogenic tanks. The airlock will permit Discovery to dock with the Mir space station and the additional set of cryogenic tanks will allow the orbiter to remain in space for longer periods of time.

Discovery is scheduled to be rolled out of the Rockwell facility as early as Monday morning, June 24, and begin the return trip back to Florida the next day. A two-day ferry flight has been factored into the schedule, putting Discovery back at KSC as early as Wednesday, June 26, weather permitting. Discovery will be mated to the Shuttle Carrier Aircraft (SCA), a modified Boeing 747, the afternoon of the rollout.

A management meeting will be held Sunday afternoon in Palmdale to assess Discovery's readiness to commence the ferry flight. Weather permitting, managers hope to travel as far east as Corpus Christi, TX, the first day and remain there overnight. The current plan calls for Discovery to depart Corpus Christi the following morning, refuel at Ellington Field, Houston, TX, and continue the same day on to KSC.

Once back at KSC, preparations will begin for Discovery's next mission, STS-82, the second Hubble Space Telescope servicing flight, set for launch in February 1997. Also, Discovery is scheduled to dock with Russia's Mir space station twice in 1998.

-- end --

For automatic e-mail subscriptions to daily Shuttle status reports or KSC originated press releases, send an Internet electronic mail message to: domo@news.ksc.nasa.gov. In the body of the message (not the subject line) type the words "subscribe shuttle-status", or "subscribe ksc-press-release" (do not use quotation marks). The system will reply with a confirmation via e-mail of each subscription.

To remove your name from the list at any time, send an e-mail address to domo@news.ksc.nasa.gov. In the body of the message (not the subject line), type (no quotes) "unsubscribe shuttle-status", or "unsubscribe ksc-press-release."

Launius, Roger

From: Lisa.Malone-1
To: ksc-press-release
Subject: KSC and Industry to develop revolutionar
Date: Friday, July 19, 1996 11:59AM

NASA News

National Aeronautics and

Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899

Joel Wells
(407) 867-2468

For Release:
July 19, 1996

KSC Release No. 81-96

KSC AND INDUSTRY TO DEVELOP REVOLUTIONARY SUPER-COOLER

For years, the superconducting electronics industry has been stymied by the lack of an affordable means to accurately calibrate voltage levels in this type of high-performance circuitry. NASA and Hypres, Inc., Elmford, NY will jointly develop a product that is expected to be a breakthrough for the industry.

The device, known as a compact cryogenic cooler, will provide a supercold environment for superconducting electronic circuitry, said Kristen Riley of the KSC Technology Programs and Commercialization Office. The cryocooler will be a key element in the development of a portable Josephson Junction Voltage, or J-Volt Standard system to be used in the calibration of highly accurate electronic instruments. NASA plans to use the technology at its eight field centers throughout the country.

Under a recently signed 13-month Space Act agreement, Hypres will develop a prototype of the cryocooler along with NASA, the Department of Energy (DOE)'s Sandia National Laboratories and the National Institute of Standards and Technology (NIST). KSC will also fund a portion of the development costs and provide facilities for final testing. This effort is a part of KSC's Dual Use Program, where the center partners with industry to develop technology for use by the space agency that also has potential for the commercial market.

"The cryocooler chamber, about the size of a standard television, will allow the J-Volt Standard unit to be light and compact enough to be easily shipped to any field location," Riley said. "Once at the site, the system could be readily mounted in a standard electronics test rack."

Present-day J-Volt Standard systems are about 6 feet tall and are prohibitively expensive to build and too large to ship. Much of this expense and size is the result of reliance on a chamber that must be filled with liquid helium to supercool the electronic circuitry to the temperatures that they would operate in a superconducting electronics system.

"The compact cryogenic cooler, or cryocooler, will take the place of large 100-liter liquid helium containers now used at permanent electronics testing sites," Riley said. "Currently there are about 40 fixed sites in the country that are only used by companies and institutions that can afford them. The portable unit will drastically lower the cost of a J-Volt system. We expect the superconducting industry to be revitalized once the portable system is commercially available."

Electronics components based on the superconductivity principle must operate at supercold temperatures to maintain the flow of electrical current with little or no resistance through their circuitry. This low-resistance technology allows electronic equipment to process data at speeds higher than those possible with conventional hardware and is now being used in some mainframe supercomputers. Research is underway to develop such next-generation devices as high-speed digital switchers for communications equipment, digital spectrum analyzers and other scientific research tools.

"There are many other potential commercial and military applications of this technology, including improved ship-borne and ground-based radars," Riley said.

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National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, FL 32899

Aug 07 1996

Reply to Attn of: HM

TO: NASA HEADQUARTERS

Attn: M-1/Deputy Associate Administrator for Space Flight

FROM: CD/Director

SUBJECT: Impact of Outyear Civil Service FTE Constraints

During the Code M R&PM POP 96-1 review conducted on July 15, 1996, members of my staff provided the outyear (FY97-02) civil service workforce requirements for KSC. These requirements represent our best assessment of the true workforce necessary to accomplish our assigned missions of space launch; to develop a Center of Excellence for Launch and Payload Processing; to adhere to the Agency's critical management operating guidelines; and to absorb new work content for Space Station Hardware Integration and Space Shuttle Upgrades.

Based on your assessment of our workforce at 1445 FTE's, we will be forced to conduct a reduction in force of approximately 547 people on October 1, 1998; and the following impacts will occur:

I. KSC will be unable to sustain beyond FY98 Shuttle upgrade, Shuttle Processing improvement, and LPS Modernization initiatives. Unsupportable activities for Shuttle upgrades include: integration with and support to designers during definition and implementation; definition of orbiter improvements to enhance maintainability while reducing operational costs and increased safety; and definition of changes to GSE and facilities processes to support upgrades. Activities supporting definition and implementation of different checkout philosophies/processing techniques that reduce processing work content will not be possible. Unsupportable LPS modernization activities include: definition of system and software architecture; hardware and software development, prototyping, and acquisition; and system installation and transition.

II. The implementation of the Center of Excellence will not be sustainable at the POP 96-1 Submit levels. This activity requires the continuation of resources to preserve and sustain our world-class standing by striving to find innovative approaches to perform the KSC mission, as well as assisting others to maintain excellence at the Agency level. The objective of this effort, and defined as a critical factor in the HEDS Strategic Plan, is to significantly reduce the cost of access to space. Planned efforts to streamline payload processing for the Agency, provide increased design center support to our customers, and improve launch site operations through implementation of new and next generation tools and techniques will be stifled by the scheduled reduction.

III. The Zero Base Review recognized the need for KSC and the Agency to increase the number of Civil Servants and reduce the number of support contractors performing R&D. Our requirements package included the resources to accomplish this conversion. Without these resources, KSC is not

in a position to reduce support contractor effort or accomplish advanced development of ground systems necessary to support the Center mission. After FY 98, KSC's core engineering skills, technical expertise and development capabilities in mechanical, automation, and checkout/control and data communications systems are seriously eroded.

IV. The impact to the operation of the Center is significant. The Zero Base Review assumed that the Center would transition to a "GOCO-like" operation and the resulting Center operations FTE requirement was based on that assumption. Although that assumption was abandoned and the need for increased Shuttle and Space Station resources was recognized, the FTE reduction in Center Support has not changed. The impact of this is:

A. Ability to maintain adequate expertise in facility/facility systems and information technology programs is lost. Those facilities and systems which would have been transitioned under the original ZBR assumption continue to be the responsibility of NASA under current planning, with no provision for NASA civil service involvement.

B. Resources necessary to maintain management insight into institutional contractor processes for logistics systems, supply and transportation, and training are lost.

C. Insight into institutional contractor S&MA activities is not sustainable.

D. Government safety inspection of institutional facilities is not possible.

E. We will not be able to continue OSMA Independent Assessment of programs (an outcome of the Roger Commission).

F. Support to OSMA studies and RTOP's is eliminated.

G. Inability to meet executive orders on the long-term pollution prevention program, affirmative procurement, life cycle costing, etc., delays ISO 14000 certification, lengthens the delay in responding to environmental regulatory inquiries, delays processing of permits which will delay operations, and eliminates our ability to respond to new environmental initiatives.

H. Direct PAO support to education and the community will be eliminated.

V. Inability to maintain viable co-op program.

Many the activities delineated above are supportable to some extent early on in FY97 and FY98. The reduction predicted in FY99 effectively removes all but direct mission operations support as of October 1, 1998. I do not feel this is a prudent approach for the center, OSF, or the Agency.

As a final point, the POP 96-1 guideline reduced training funds to $600/FTE. The reduction of total FTE in itself serves to reduce the training budget for the Agency. A training budget of approximately $1,000/FTE is necessary to adequately support retraining requirements and mandatory certification training required by KSC employees.

Jay F. Honeycutt

cc:
JSC/AA/G. Abbey

Launius, Roger

From: Lisa.Malone-1
To: ksc-press-release
Subject: STS-79 launch set for Sept. 14
Date: Thursday, August 29, 1996 7:07PM

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

AC 407 867-2468

For Release:

Ed Campion
NASA Headquarters
(202) 358-1780

Aug. 29, 1996

Lisa Malone
Kennedy Space Center
407/867-2468

KSC Release No. 101-96

MISSION STS-79 LAUNCH SET FOR SEPT. 14

Following a flight readiness review today, Space Shuttle managers have set Sept. 14 as the launch date for Space Shuttle Atlantis on Mission STS-79. The flight is the fourth in a series of joint docking missions between the Shuttle and Russia's space station Mir and will feature the delivery of astronaut John Blaha to Mir and the return of astronaut Shannon Lucid to Earth.

Officials are keeping a close eye on tropical storm activity in the Atlantic. Plans could be implemented to return the Shuttle Atlantis back to the Vehicle Assembly Building if any storms turn toward the Kennedy Space Center. Officials may have to re-evaluate the Sept. 14 launch date if the storms force a rollback of Atlantis.

During the meeting, solid rocket motor managers presented data on the abnormal sooting discovered in the J-leg tip on the STS-78 solid rocket motor field joints following Columbia's launch in June. An analysis showed that the most probable cause for the sooting was a new adhesive used in the field joints for the first time on STS-78. Managers decided to take a conservative approach and replace the STS-79 motors with a new set using the

old adhesive material. NASA managers said a thorough review of Atlantis' new solid rocket motors verified their readiness for launch.

"We have heard presentations from all program elements supporting the STS-79 launch, mission and landing. The NASA contractor team is ready for the upcoming flight," said George Abbey, Director, Johnson Space Center, who chaired the review meeting. "This flight marks a significant crew exchange between the Space Shuttle and the Mir station as we bring Shannon Lucid back after a record stay in orbit for an American. The U.S. is gathering data during these flights that are invaluable in our plans for the International Space Station. Flights with the Russians and the Mir station are allowing us to learn more about long duration space flight even before we construct the station."

The Sept. 14 launch of Atlantis is planned for 5:39 a.m. EDT from the Kennedy Space Center's Launch Complex 39-A. The available launch "window" is ten minutes long.

The STS-79 mission is scheduled to last nine days, five hours and nine minutes. With an on-time launch, docking with Mir will occur about 42 hours after launch. A nominal mission duration would result in Atlantis returning to Earth on Sept. 23 with a landing at KSC's Shuttle Landing Facility at approximately 10:48 a.m. EDT.

The STS-79 mission will be the 17th flight for Atlantis and the 79th in the Space Shuttle program history.

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release; shuttle-status
Subject: STS-79 Countdown Release
Date: Thursday, September 12, 1996 5:08PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:
Bruce Buckingham Sept. 12, 1996

KSC RELEASE NO. 105 - 96

SPACE SHUTTLE MISSION STS-79 LAUNCH COUNTDOWN TO BEGIN SEPT. 13

NASA will begin the countdown for launch of Space Shuttle Atlantis on the fourth mission to dock with Russia's space station Mir on the morning of Friday, Sept. 13 at 12 a.m.(midnight) at the T-43 hour mark. The KSC launch team will conduct the countdown from Firing Room 1 of the Launch Control Center.

The countdown includes 33 hours and 53 minutes of built-in hold time leading to the opening of the launch window at about 4:54 a.m. (EDT) on Sept. 16. The launch window extends for about 7 minutes, possibly less, depending on final orbiter performance evaluations. The exact time of launch will be determined about 90 minutes before liftoff based on the location of the Mir space station. (Controllers are preparing for launch as early as 4:53 a.m. and that is the time reflected in the countdown bar-charts.)

In order to accommodate the short window necessary to rendezvous and dock with Mir, some changes have been made to the standard launch countdown. Most significant is the addition of an extra 30 minutes to the normal 10 minute built-in hold at T-9 minutes. Also, tanking is scheduled to begin about 30 minutes earlier than normal, at about 7:30 p.m. Sunday.

STS-79 is the sixth Space Shuttle mission of 1996. This will be the 17th flight of the orbiter Atlantis and the 79th flight overall in NASA's Space Shuttle program. Atlantis last flew on the second Shuttle/Mir docking flight in November 1995.

This flow has been unusual in that Atlantis was twice returned to the Vehicle Assembly Building (VAB) from the pad due to hardware and weather concerns. Atlantis was first rolled out of Orbiter Processing Facility bay 1 on June 24 and mated with the external tank and solid rocket boosters in the VAB. The Shuttle stack was then transported to Pad 39A on July 1.

On July 10, Atlantis was returned to the VAB due to threats from Hurricane Bertha. Two days later, managers decided to keep Atlantis off the pad in order to replace the solid rocket boosters before launch. Atlantis was destacked from the original set of boosters and returned to the OPF. Once the new boosters were prepared, Atlantis was again rolled over to the VAB on Aug. 13 and mated to the replacement booster/external tank configuration. On Aug. 20, Atlantis was returned to the pad for the second time.

Two weeks later, on Sept. 4, Hurricane Fran threatened Florida and managers decided to return Atlantis once again to the safety of the VAB. The threat quickly passed and the next day Atlantis was moved back out to the pad for the third time.

On mission STS-79, Atlantis will carry into orbit a six member crew. Mission Specialist John Blaha will replace Shannon Lucid on the Mir space. He will remain there until Atlantis again docks with Mir next January. Lucid will return to Earth with the rest of the STS-79 crew.

The STS-79 crew are: Commander Bill Readdy; Pilot Terry Wilcutt; and Mission Specialists Jay Apt, Tom Akers, Carl Walz and John Blaha. All members of the STS-79 crew are veteran Shuttle flyers.

The crew are scheduled to arrive at KSC at about 12:01 a.m. Friday, Sept. 13. Their activities at KSC prior to launch will include equipment fit checks, medical examinations and opportunities to fly in the Shuttle Training Aircraft.

(end of general release)

(The countdown will target launch for 4:53 a.m. The exact launch time will be adjusted at the T-9 minute hold.)

COUNTDOWN MILESTONES
*all times are Eastern
Launch - 3 Days (Friday, Sept. 13)

Prepare for the start of the STS-79 launch countdown
Perform the call-to-stations (11:30 p.m. Thursday, Sept. 12)
All members of the launch team report to their respective consoles in Firing Room 1 in the Launch Control Center for the start of the countdown.
Countdown begins at the T-43 hour mark (12 a.m.)
Start preparations for servicing fuel cell storage tanks
Begin final vehicle and facility close-outs for launch
Check out back-up flight systems
Review flight software stored in mass memory units and display systems
Load backup flight system software into Atlantis' general purpose computers
Begin stowage of flight crew equipment
Inspect the orbiter's mid-deck and flight-deck and remove crew module platforms

Enter first planned built-in hold at T-27 hours for duration of four hours (4 p.m.)

Clear launch pad of all non-essential personnel
Perform test of the vehicle's pyrotechnic initiator controllers

Resume countdown (8 p.m.)

Clear launch pad of all personnel
Begin operations to load cryogenic reactants into Atlantis' fuel cell storage tanks
(8 p.m. - 4 a.m.)

Launch - 2 Days (Saturday, Sept. 14)

After cryogenic loading operations, re-open the pad

Enter four-hour built-in hold at T-19 hours (4 a.m.)

Resume orbiter and ground support equipment close-outs
Demate orbiter mid-body umbilical unit and retract into fixed service structure
Power-up Spacehab and prepare for final stowage

Resume countdown (8 a.m.)

Start final preparations of the Shuttle's three main engines for main propellant tanking and flight
Activate the orbiter's flight controls and navigation systems
Install mission specialists' seats in crew cabin
Close-out the tail service masts on the mobile launcher platform

Enter planned hold at T-11 hours for 21 hours, 3 minutes (4 p.m.)

Complete final stowage of Spacehab
Perform orbiter ascent switch list in crew cabin
Install film in numerous cameras on the launch pad

Launch -1 Day (Sunday, Sept. 15)

Activate the orbiter's communications systems
Activate orbiter's inertial measurement units
Fill pad sound suppression system water tank
Safety personnel conduct debris walkdown
Move Rotating Service Structure (RSS) to the park position (11 a.m.)
Following the RSS move, begin final stowage of mid-deck experiments and flight crew equipment

Resume countdown (1:03 p.m.)

Continue installation of time critical flight crew equipment
Perform pre-ingress switch list
Start fuel cell flow-through purge
Activate the orbiter's fuel cells
Configure communications at Mission Control, Houston, for launch
Clear the blast danger area of all non-essential personnel
Switch Atlantis' purge air to gaseous nitrogen

Enter planned two-hour built-in hold at the T-6 hour mark (6:03 p.m.)

Launch team verifies no violations of launch commit criteria prior to cryogenic loading of the external tank
Clear pad of all personnel
Begin loading the external tank with about 500,000 gallons of cryogenic propellants (about 7:30 p.m.)

Resume countdown (8:03 p.m.)

Complete filling the external tank with its flight load of liquid hydrogen and liquid oxygen propellants (about 10:30 p.m.)
Perform inertial measurement unit preflight calibration
Align Merritt Island Launch Area (MILA) tracking antennas
Perform open loop test with Eastern Range
Conduct gimbal profile checks of orbital maneuvering system engines

Enter two-hour hold at T-3 hours (11:03 p.m.)

Close-out crew and Final Inspection Team proceeds to Launch Pad 39A

Launch Day (Monday, Sept. 16)

Resume countdown at T-3 hours (1:03 a.m.)

Crew departs Operations and Checkout Building for the pad (about 1:08 a.m.)
Complete close-out preparations in the white room
Check cockpit switch configurations
Flight crew begins entry into the orbiter (about 1:48 a.m.)
Astronauts perform air-to-ground voice checks with Launch Control and Mission Control
Close Atlantis' crew hatch (about 3:03 a.m.)
Begin Eastern Range final network open loop command checks
Perform hatch seal and cabin leak checks
Complete white room close-out
Close-out crew moves to fallback area
Primary ascent guidance data is transferred to the backup flight system

Enter planned 10-minute hold at T-20 minutes (3:43 a.m.)

NASA Test Director conducts final launch team briefings

Resume countdown (3:53 a.m.)

Transition the orbiter's onboard computers to launch configuration
Start fuel cell thermal conditioning
Close orbiter cabin vent valves
Transition backup flight system to launch configuration

Enter 40-minute hold at T-9 minutes (4:04 a.m.)
(This is the last planned built-in hold. Other hold options are available if necessary. During this hold, the exact launch time will be determined based on the exact location of the Mir space station. The hold time will likely vary by a minute or two.)

Launch Director, Mission Management Team and NASA Test Director conduct final polls for go/no go to launch

Resume countdown at T-9 minutes (about 4:44 a.m.)

Start automatic ground launch sequencer (T-9:00 minutes)
Retract orbiter crew access arm (T-7:30)
Start mission recorders (T-5:30)
Start Auxiliary Power Units (T-5:00)
Arm SRB and ET range safety safe and arm devices (T-5:00)
Start liquid oxygen drainback (T-4:55)
Start orbiter aerosurface profile test (T-3:55)
Start main engine gimbal profile test (T-3:30)
Pressurize liquid oxygen tank (T-2:55)
Begin retraction of the gaseous oxygen vent arm (T-2:55)
Fuel cells to internal reactants (T-2:35)
Pressurize liquid hydrogen tank (T-1:57)
Deactivate SRB joint heaters (T-1:00)
Orbiter transfers from ground to internal power (T-0:50 seconds)
Ground Launch Sequencer go for auto sequence start (T-0:31 seconds)
SRB gimbal profile (T-0:21 seconds)
Ignition of three Space Shuttle main engines (T-6.6 seconds)
SRB ignition and liftoff (T-0)

SUMMARY OF BUILT-IN HOLDS FOR STS-79

T-TIME
LENGTH OF HOLD
HOLD BEGINS
HOLD ENDS

T-27 hours
4 hours
4 p.m. Fri.
8 p.m. Fri.

T-19 hours
4 hours
4 a.m. Sat.
8 a.m. Sat.

T-11 hours
21 hours, 3 minutes
4 p.m. Sat.
1:03 p.m. Sun.

T-6 hours
2 hours
6:03 p.m. Sun.
8:03 p.m. Sun.

T-3 hours
2 hours
11:03 p.m. Sun.
1:03 a.m. Sun.

T-20 minutes
10 minutes
3:43 a.m. Sun.

3:53 a.m. Sun.

T-9 minutes
about 40 minutes
4:04 a.m. Sun.
4:44 a.m. Sun.

CREW FOR MISSION STS-79

Commander (CDR): Bill Readdy
Pilot (PLT): Terry Wilcutt
Mission Specialist (MS1): Jay Apt
Mission Specialist (MS2): Tom Akers
Mission Specialist (MS3): Carl Walz
Mission Specialist (MS4): John Blaha

SUMMARY OF STS-79 LAUNCH DAY CREW ACTIVITIES

Sunday, Sept. 15

6 p.m.
Wake up

6:30 p.m.
Breakfast

* 11:58 p.m.
Lunch and crew photo

Monday, Sept. 16

12:28 a.m.
Weather briefing (CDR, PLT, MS2)

12:28 a.m.
Don launch and entry suits (MS1, MS3, MS4)

12:38 a.m.
Don launch and entry suits (CDR, PLT, MS2)

* 12:50 a.m.
Crew suiting photo

* 1:08 a.m.
Depart for launch pad 39A

* 1:48 a.m.
Arrive at white room and begin ingress

* 3:03 a.m.
Close crew hatch

* 4:54 a.m.
Launch

* Televised events (times may vary slightly)
All times Eastern

-- end --

Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: KSC Bone Marrow Drive
Date: Wednesday, September 18, 1996 4:18PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Joel Wells

Sept. 18, 1996

KSC Release No. 100-96

KSC GIVES A BOOST TO NATIONAL BONE MARROW MONTH ACTIVITIES

The KSC community extended a helping hand to patients suffering from leukemia and other blood related diseases by signing up a record number of potential bone marrow donors.

Introducing September as National Donor Awareness Month, KSC's efforts stand out as 888 employees turned out for the center's first bone marrow registration drive on Aug. 28. This number of potential donors surpasses any one-day drive conducted by the Leukemia Society of America in Florida, Georgia and Alabama.

"The success of this drive was phenomenal," said Robin Kornhaber, the organization's national director of patient services.

The Leukemia Society of America's (LSA) Central Florida Chapter and the American Red Cross held the event to educate and recruit volunteers to join the National Marrow Donor Program (NMDP). Established in 1986, the NMDP guides patients in their search for a compatible bone marrow donor. Their organizational network consists of recruitment groups, donor and transplant centers.

KSC's Biomedical Office, various working groups and volunteers teamed up to generate civil service and contractor interest in the program. With minority numbers low on the NMDP registry of potential donors, an emphasis was placed on registering minority employees. "An astounding 22 percent of those registered were from KSC's minority population," said Dr. George Martin, KSC Biomedical Office.

-more-

Only a small blood sample is required from each participant for testing and further screening. "After I registered and gave the blood sample, I felt that I was possibly saving a life. I felt good about it," said Christopher Whittaker, a McDonnell Douglas engineer. Bone marrow is later requested only if a suitable match is made.

Marrow compatibility between donor and recipient is an important part of a successful bone marrow transplant. "The characteristics of bone marrow are inherited much like hair and eye color," explained Katosha Belvin, spokesperson for NMDP. If a match cannot be found in a recipient's family the search continues within their ethnic group.

NMDP's registry of potential volunteer donors is over 2 million strong. "While the numbers on the registry are encouraging there is still much work to be done. Thirty percent of the patients searching our registry still find no match," said Belvin.

Throughout the month of September LSA, NMDP and their network of non-profit helpers will strive to enlarge the pool of donors, increasing the chance for each patient to find a compatible donor. Each bone marrow drive depends on public donations to fund the registration and screening services provided to potential donors free of charge.

For more information on National Donor Awareness Month and related activities call 1-800-MARROW-2.

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: release
Date: Tuesday, September 24, 1996 11:52AM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Joel Wells

Sept. 23, 1996

KSC Release No. 109-96

BETHUNE-COOKMAN COLLEGE TO HELP DELIVER NASA PROGRAMS AT CENTER FOR SPACE EDUCATION

NASA has awarded a grant to Bethune-Cookman College to operate the Educators Resource Center and the Exploration Stations in the Center for Space Education at Kennedy Space Center. Awarded Sept. 11, the grant gives Bethune-Cookman a key role in helping NASA expose students and educators to real-world science through space-related teaching resources and hands-on, minds-on learning experiences.

"This is an opportunity for KSC to benefit from a superb learning institution. I'm excited about expanding our relationship," said KSC Director Jay Honeycutt at the grant signing.

The NASA Education Services Branch in KSC's Public Affairs Office manages the program, which is designed to help teachers and inspire students to choose careers in mathematics, science and technology. The Center for Space Education, located in the northwest corner of the KSC Visitors Center, is operated by the Astronaut Memorial Foundation.

The Educators Resource Center is a library of audio/visual and printed materials that can supplement a teacher's standard curriculum. Students participate directly in learning activities and professionally-conducted demonstrations in the two Exploration Stations.

"This program brings the lofty concepts in science and space exploration down to earth," said Dr. Steve Dutczak, Education Services Branch Chief. "At the same time, this new partnership will keep us up to speed with current education trends and new technology."

-more-

"I'm glad we're tied to this highly creative and productive government agency," announced Dr. Oswald P. Bronson, Sr., president of Bethune-Cookman. "This is not our first time to work with NASA, but it is a significant step that moves us closer in our relationship."

KSC's Procurement Office demonstrated some creativity of its own in the acquisition of Bethune-Cookman's services. The conversion from the former contract with a private company to a grant with a historically black college "will help KSC with our (socioeconomic) goals and it just makes good sense to have an educational institution operating these programs," said Valencia Mitchell, KSC contracting officer.

Seven universities were surveyed to determine their interest in the grant, and three responded positively. Bethune-Cookman's close proximity to KSC and its strong management approach were factors in the selection. The initial grant is for one year, but it also carries 4 one-year options. Over the full 5 years, the grant is valued at $1.5 million.

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release; shuttle-status
Subject: STS-79 landing release
Date: Wednesday, September 25, 1996 9:59AM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Bruce Buckingham Sept. 24, 1996

KSC RELEASE NO. 111 - 96

ATLANTIS SCHEDULED TO LAND AT KSC

The orbiter Atlantis is scheduled to land at Kennedy Space Center on Thursday, Sept. 26 at about 8:11 a.m. EDT, completing its 10-day STS-79 mission which was launched from KSC on Sept. 16.

Landing at KSC's Shuttle Landing Facility (SLF) is slated to occur on orbit 160 at a mission elapsed time of 10 days, 3 hours, 18 minutes. The deorbit burn will occur at about 7:07 a.m. Thursday.

The two KSC landing opportunities on Thursday are: 8:11 a.m. and 9:48 a.m. In the event a landing is not possible at KSC on Thursday due to weather concerns, a landing could be made at Edwards Air Force Base (EAFB), CA. Landing opportunities at Edwards on Thursday are at 9:40 a.m. and 11:16 a.m. EDT. If managers decide to keep Atlantis in orbit an additional day, two landing opportunities are available at KSC and two at Edwards on Friday.

KSC Friday landing times are: 8:46 a.m. and 10:22 a.m. EDT.

EAFB Friday landing times are: 10:15 a.m. and 11:51 a.m. EDT.

The landing of Atlantis will mark the 32nd landing at KSC in the history of Space Shuttle flight. It will be the fifth landing of the Shuttle at KSC this year.

About six hours after landing at KSC, select members of the flight crew will be present for a post-mission press conference. The conference will be held at the KSC TV auditorium and carried live on NASA TV. Astronaut Shannon Lucid, returning to Earth after spending six-months on the Mir space

station, will not participate in the post-mission astronaut press conference.

-- more --

KSC FORM 2-160A (REV. 10/92)

SLF and KSC Ground Operations

The Shuttle Landing Facility was built in 1975. It is 300 feet wide and 15,000 feet long with 1,000 foot overruns at each end. The strip runs northwest to southeast and is located about 3 miles northwest of the 525-foot tall Vehicle Assembly Building.

Once the orbiter is on the ground, safing operations will commence and the flight
crew will prepare the vehicle for post-landing operations. The Crew Transport Vehicle
(CTV) will be used to assist the crew, allowing them to leave the vehicle and remove their
launch and re-entry suits easier and quicker.

The CTV and other KSC landing convoy operations have been "on-call" since the launch of Atlantis Sept. 16. The primary functions of the Space Shuttle recovery convoy are: provide immediate service to the orbiter after landing, assist crew egress, prepare the orbiter for towing to the Orbiter Processing Facility.

Convoy vehicles are stationed at the SLF's mid-point. About two hours prior to landing, convoy personnel don SCAPE suits, or Self Contained Atmospheric Protective Ensemble, and communications checks are made. A warming-up of coolant and purge equipment is conducted and nearly two dozen convoy vehicles are positioned to move onto the runway as quickly and as safely as possible once the orbiter coasts to a stop. When the vehicle is deemed safe of all potential explosive hazards and toxic gases, the purge and coolant umbilical access vehicles move into position at the rear of the orbiter.

Following purge and coolant operations, flight crew egress preparations will begin and the CTV will be moved into position at the crew access hatch located on the orbiter's port side. A physician will board the Shuttle and conduct a brief preliminary examination of the astronauts. The crew will then make preparations to leave the vehicle.

Following departure from the SLF, the crew will be taken to their quarters in the O&C Building, meet with their families and undergo physical examinations. The crew is scheduled to depart for JSC the day after landing.

If Atlantis lands at Edwards, an augmented KSC convoy team will be on-site to safe the vehicle, disembark the crew and move the orbiter to the Mate/Demate Device. The turnaround team will be deployed to Edwards by charter aircraft on landing day.

About 8 hours after Atlantis lands at KSC, the orbiter will be towed to Orbiter Processing Facility bay 3 for post-flight deservicing. Preparations

will then begin for Atlantis' next mission, STS-81, currently scheduled for launch in January.

-- more --

-- 3 --

KSC End Of Mission Landing Flight Rules For STS-79

Because of the concerns with Atlantis' auxiliary power unit no. 2, managers are taking a more cautious approach to weather criteria at the prime landing sites. In general, the end of mission landing flight rules regarding visibility and cross-winds have been stiffened.

All criteria refer to observed and forecast weather conditions. At decision time for deorbit burn about 90 minutes before landing, weather conditions must be:

Cloud coverage of 4/8 or less below 10,000 feet

A no go consideration will be given to observed scattered cloud layers of 3/8 - 4/8 sky coverage below 10,000 feet at the deorbit burn decision time

7 miles or greater visibility

Peak cross-winds cannot exceed 10 knots

Headwinds cannot exceed 25 knots

Tailwinds cannot exceed 10 knots average, 15 knots peak

The deorbit burn shall not occur if thunderstorms, lightning or precipitation is forecast within 30 nautical miles of the Shuttle Landing Facility

At a range of 30 nautical miles, vertical clearance from the tops of rain showers or thunderstorms must be greater than three nautical miles

Detached opaque thunderstorm anvils less than three hours old must be within 20 nautical miles of the Shuttle Landing Facility, or within 10 nautical miles of the flight path when the orbiter is within 30 nautical miles of the runway

Turbulence must be light intensity or less

-- end --

Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: Liquid Air Mixer -- KSC release
Date: Tuesday, October 01, 1996 1:54PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

Joel Wells

For Release
Oct. 1, 1996

KSC Release No. 106-96

KSC LIQUID AIR MIXER KEY TO IMPROVED FIREFIGHTER AIR PACK

A "next-generation" air supply backpack for firefighters and rescue workers that can provide twice as much breathing air per pound than conventional units can now be commercially developed thanks to a recent NASA invention.

The recent invention, a mobile liquid air mixing unit, can produce small amounts of the cryogenic liquid for use in the Kennedy Space Center-designed liquid air pack (LAP) that has been in operation at the center since 1986. The LAP can provide considerably more breathing air under working conditions than the most advanced compressed air pack now used by fire departments and emergency rescue crews. However, its commercial development has been hampered by the lack of a means to produce small amounts of liquid air needed to fill the LAP at the sites of fires and other emergency situations.

"Several large fire departments have been interested in using the liquid air pack for years and equipment companies have wanted to develop it," said EG&G Florida Inc. Life Support manager Bob Martin. "The new portable mixing system will clear the way for the commercial development of the LAP."

The liquid air mixing system will be developed through a cooperative agreement signed Oct. 1 between consortium members EG&G Florida Inc., Precision Cleaning and Fabricating, Inc., Cocoa, FL and the State of Florida's Technological Research and Development Authority (TRDA) and Kennedy Space Center.

KSC developed the liquid air pack for Space Shuttle astronaut rescue

crews and for use during hazardous operations at the center. It is lighter by several pounds and more compact than conventional air packs to allow rescue crews to enter the narrow passages within the orbiter in the case of an emergency at the launch pad.

"Users have at least an hour of breathing time with the liquid air pack no matter how hard they work, and up to 2 1/2 hours under less stressful conditions " Martin said. "The standard 60-minute air pack provides only 30 minutes of air under demanding firefighting or rescue conditions."

The liquid air used in the packs is a combination of 21 percent liquid oxygen and 79 percent liquid nitrogen. The evaporating gases travel from an insulated bottle through tubing in a heat exchanger before reaching the facemask of the air pack at a temperature of about 65 to 70 degrees F. This cool air helps reduce heat fatigue and keeps the user's body core temperature down while eliminating facemask fogging.

The key to the scaled-down liquid air production unit is a mixer system with one tube inside another. The inner tube holds - 297 degree F liquid oxygen, while the outer tube is filled with colder liquid nitrogen (-320 degrees F). The two cryogenic fluids can be mixed together in a container and stored as liquid air once they reach the same temperature. NASA has applied for a patent on the mixer, which Martin invented.

The mobile version of the small-scale production unit, to be developed by consortium members Precision Cleaning and Fabricating Inc., Cocoa, FL, and EG&G, would be mounted on skids and be light enough to be transported to a fire or disaster area by truck or helicopter. It would include small liquid oxygen and liquid nitrogen tanks, the liquid air mixing system and a storage tank. The production mobile units also would be transported to KSC operational areas where liquid air packs were to be used. The TRDA selected the two companies to develop the mixer and provides support for the consortium's development efforts.

"The liquid air pack and mobile production unit could be used anywhere there is a need for high-capacity air-breathing devices, " Martin said. "This includes hazardous materials emergencies, environmental cleanup, shipboard fires and mining accidents, as well as fires in large industrial or residential buildings."

Businesses that would like additional information on the liquid air mixing system or the liquid air pack should contact Kristen Riley in the KSC Technology Programs and Commer-cialization Office at (407) 867-2780.

####

Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: Racing and Thermal Protection System fro
Date: Friday, October 04, 1996 4:31PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

Hugh Harris For Release:

Oct. 4, 1996

KSC Release No. 118-96

SPACE SHUTTLE INSULATION TO BE COMMERCIALLY PRODUCED FOR USE ON RACE CARS

Space Shuttle insulation will soon be commercially available to protect race car drivers from the searing heat they endure during competition through an agreement between NASA, Rockwell Space Systems, the insulation's developer, and BSR/TPS Products Inc., Mooresville, NC.

Kennedy Space Center Director Jay F. Honeycutt will place a special space certification seal on the first kit to be made from Space Shuttle orbiter Thermal Protection System (TPS) materials by the company in a special ceremony at 11:30 a.m. Oct. 8 at BSR's Lakeside Park facility.

The BSR thermal protection kit is the first commercial use of Shuttle TPS insulation. It also is the first product to bear the Mission HOME (Harvesting Opportunity for Mother Earth) official seal, an indicator that a product was developed directly from U.S. space program technology. Mission HOME is an effort by the U. S. Space Foundation, the National Space Society and major aerospace companies to inform Americans of the benefits of space.

The certification initiative was created as part of the Mission HOME's "Take Up Space" program, chaired by Apollo 13 Commander Jim Lovell. Companies earn the right to use the certification seal by undergoing review by a panel of technology experts.

The TPS tiles and blanket material protect the orbiters from temperatures as high as 3,000 degrees Fahrenheit experienced as they re-enter the Earth's atmosphere during the final phase of a Shuttle mission. BSR will manufacture blanket insulation kits for installation on stock cars that race in NASCAR events, as well as other types of race cars, through its nationwide catalog distribution system. Rockwell Space Systems developed the TPS material for NASA's fleet of Shuttle orbiters at KSC.
KSC FORM 2-160A (REV. 10/92) -more-

The insulation is the same type that has been tested and race-proven on Penske Racing Inc.'s No. 2 Ford Thunderbird driven by veteran NASCAR driver Rusty Wallace. Wallace has raced several times with the material and participated in an instrumented test at Daytona International Speedway in April 1996. KSC workers applied a prototype TPS insulation system on the car at the space center through a Space Act agreement in October 1995.

During the Daytona test, the insulation reduced temperatures in the cockpit of Wallace's car by 30 to 50 degrees. Without such protection, experts have estimated that temperatures inside the driver's cockpit during a race can reach up to 160 degrees. Although drivers are cooled with forced air systems and protected by fire-retardant suits, they have been burned and blistered by the tremendous heat transferred through the engine firewall, transmission tunnel and floor.

"This is a breakthrough," Wallace said at a press briefing after the Daytona test earlier this year. "I am totally impressed with this material. I feel that the TPS material helps the whole car run cooler, and the cooler the car is the better the performance."

Cooler cars will also increase the safety factor, since drivers will have better concentration and will be more alert, Wallace said.

"This is a win-win situation, both for NASCAR and the space agency," Wallace said. "I want to give a huge endorsement to the racing community about what NASA has done to help us."

Space Act agreements are a part of NASA's Dual Use program, where the agency partners with industry to develop technology for use by the space center that also has potential for the commercial market. The original effort to install TPS material on Wallace's car at KSC was brought about through an agreement between Penske Racing, Rockwell and the space center's Tech-nology Programs and Commercialization Office.

Honeycutt, a racing fan, first recommended TPS insulation to NASCAR race team manager Bobby Allison. Allison then passed the concept along to Roger Penske. KSC employees worked with Penske's team to develop and perfect the final insulation kit design.

"We have a real opportunity to reach a group of Americans who otherwise don't realize how space impacts their lives," Honeycutt said in reference to the racing community and racing fans. "This is a great opportunity for us to promote space and respond to commercialization outreach."

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Launius, Roger

From: Lisa.Malone-1
To: ksc-press-release
Subject: OPF addition to house Shuttle engine ope
Date: Friday, October 11, 1996 11:49AM

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

Lisa Malone

For Release
(407) 867-2468 Oct.
11, 1996

KSC Release No. 121-96

ORBITER PROCESSING FACILITY ADDITION TO HOUSE SPACE SHUTTLE MAIN ENGINE OPERATIONS

Space Shuttle main engine (SSME) operations now housed in the Main Engine Shop in the Vehicle Assembly Building (VAB) at KSC will be moved to a 34,600-square-foot addition to Orbiter Processing Facility (OPF) 3 once work on this structure is completed in January 1998.

Ivey's Construction, Inc., Merritt Island, FL, has been awarded a $5,328,400 competitive contract for the construction of the SSME Processing Facility (SSMEPF). This work includes installation of heating, ventilation and air conditioning systems, plumbing and cabling, as well as high-pressure gas lines, power and communications lines. The company has 450 days from the Oct. 15 notice to proceed on the contract to complete this work.

The OPF addition will provide space to increase the capacity and efficiency of SSME operations. Movement of this operation out of the VAB was prompted by safety considerations to minimize the number of personnel and activities in this building where the Space Shuttle components are assembled prior to rollout to the launch pad.

The movement of all main engine pedestals, pneumatic panels, hydraulics test equipment and the engines themselves into the OPF addition will not take place until SSMEPF construction is complete. Activation of the facility is targeted for July 30, 1998.

The three SSME's generate approximately 375,000 pounds of thrust each during liftoff of the Space Shuttle, providing about 20 percent of the power

needed to boost the space vehicle into low Earth orbit. They are the only reusable liquid-fueled rocket engines in existence and undergo prelaunch preparation in the Main Engine Shop before their installation into the Shuttle orbiters in the OPF.

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Launius, Roger

From: Bruce.Buckingham-1
To: ksc-press-release
Subject: Rep Pepper Software Release
Date: Wednesday, October 23, 1996 2:57PM

NASA News
National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

For Release:

Joel Wells

Oct. 23, 1996

KSC Release No. 126-96

NASA AND THE RED PEPPER SOFTWARE COMPANY MAKE A "HOT ITEM"

An advanced NASA software technology that schedules pre-launch work for the entire Space Shuttle fleet, was spiced-up by the Red Pepper Software Company, of San Mateo, CA, to help some of America's corporate giants respond to customer demands and maximize their profits.

NASA's unique Ground Processing Support System (GPSS), is a computer-based scheduling tool that helps planners manage the thousands of overlapping activities that prepare each of NASA's four Space Shuttle orbiters for their respective launch days.

While technicians repair the delicate heat shielding tiles on an orbiter, other workers may be modifying the crew module, and simultaneously others may be installing a payload. GPSS reacts to any clogs in the refurbishment process and provides real-time solutions to schedule conflicts, minimizing a possible "domino effect" impact on the fleet and reducing processing costs.

Now, Fortune 500 companies like Texas Instruments, Bausch & Lomb, Coors and Hewlett Packard have begun to apply this space-age technology to their diverse industries. "We were looking for a tool to help manage our worldwide business transactions from one facility in California," said Tom Davis, Hewlett Packard Home Products Division. "We've found that tool in Red Pepper's ResponseAgents."

ResponseAgents are the commercial software systems inspired by GPSS. They help production and distribution centers satisfy customer demands by optimizing materials, capacity and labor in real time. They are designed to

supplement existing transactional and shop control systems.

"Today's market place is unpredictable and requires flexibility in order to respond to customer requirements. ResponseAgents are a new, proactive approach to planning," said Monte Zweben, president of Red Pepper. "Though we've done much work to bring this technology to the commercial market, the roots of this growing product line can be traced directly back to NASA research."

Zweben, a former deputy branch chief at Ames Research Center, lead a team of engineers from Ames, KSC and Lockheed Space Operations Company in the development of GPSS. He saw how the system would reduce Shuttle turn-around time, increase operational efficiency and reduce cost. He then envisioned a commercial version that would offer similar benefits to industry.

In 1993 Zweben left NASA and established Red Pepper Software, planning to couple the agency's technology with Red Pepper's commercial concepts. Kennedy Space Center granted the copyright license for GPSS to Red Pepper in August of 1993, allowing it to enhance the system for commercial application.

"It is a part of NASA's mission to transfer new technology into the private sector. Our determination with that of our industry partner made this success story possible," said Bill Sheehan, chief of KSC's Commercialization Office.

As Red Pepper quickly established itself as a leader in the computer software market, it attracted the attention of a leading worldwide provider of client/server business software. People Soft, Inc. recently acquired Red Pepper at a market value of $225 million. Red Pepper employed more than 100 workers at the time of the merger.

While Red Pepper, now an independent unit of People Soft, accelerates investments in research looking for broader applications of this technology, NASA focuses on its intended use. "Though we are very proud of KSC's role in the commercial success of this project, we will continue to enhance GPSS for support of future applications in launch vehicle processing," said Nicole Passonno, NASA's task manager for GPSS.

The technological stimulation and positive economic impact resulting from this cooperation demonstrate that mixing NASA technology with industry's needs is a recipe for success.

####

George H. Diller
Kennedy Space Center
407/867-2468

Dec. 3, 1996

DELTA/MARS PATHFINDER LAUNCH ADVISORY

The launch of Mars Pathfinder aboard a McDonnell Douglas Delta II rocket was postponed today one minute thirty three seconds before launch. A propulsion console in the blockhouse lost synchronization with a launch-mandatory alarm system. This alarm system assures that no launch parameters are out of limit during the final four minutes of the countdown.

Pending resolution of the problem, the launch has been rescheduled for Wednesday, Dec. 4 at 1:58:07 a.m. A meeting will be held early Tuesday to determine launch readiness.

There is a 90% chance of acceptable launch weather conditions on Wednesday morning.

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News Release

National Aeronautics and
Space Administration

Washington, DC 20546
(202) 358-1600

For Release

Debra Rahn
Headquarters, Washington, DC
(Phone: 202/358-1639)

December 18, 1996

Bruce Buckingham
Kennedy Space Center, FL
(Phone: 407/867-2468)

RELEASE: 96-264

KSC EXTENDS MCDONNELL DOUGLAS PAYLOAD CONTRACT

NASA's Kennedy Space Center, FL, has awarded McDonnell Douglas Aerospace, Space and Defense Systems, Huntington Beach, CA, a two-year extension to its existing contract for payload ground operations services. The value of this option is $245.7 million.

This two-year extension is effective Jan. 1, 1997 and ends Dec. 31, 1998. This contract features options that will carry the contract period of performance through Dec. 31, 2001, and will bring the total contract value to $1.9 billion.

This is the fourth extension of the payload ground operations contract awarded to McDonnell Douglas since the original contract was initiated in January 1987.

Under the cost-plus-award-fee/incentive-fee performance based contract, McDonnell Douglas will continue to provide ground support, test and integration for payload operations at Kennedy Space Center.

- end -

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For December 10, 1997

Mars Pathfinder stamp to be issued at JPL, Kennedy Space Center

KSC Release No. 218 - 97

NASA's Mars Pathfinder mission to the red planet will be commemorated on a postage stamp to be issued this week.

The $3 stamp will be issued first today at the Jet Propulsion Laboratory, Pasadena, CA. The second day of issue will be Thursday, Dec. 11 at Kennedy Space Center. A ceremony featuring Titusville Postmaster Ed Link and Floyd Curington, director, Expendable Launch Vehicles, will be held at 11 a.m. at Spaceport Theater, KSC Visitor's Complex.

The stamp depicts the Sojourner rover at rest on the Pathfinder spacecraft with a panoramic Martian view that is based on one of the first mission images sent back to Earth. Commemorative stamp cancellations will be available after the ceremony.

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