IF.5 #12

NASA News

National Aeronautics and
Space Administration

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

For Release:
April 13, 1987

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

RELEASE: 87-56

SHEEHAN NAMED ASSOCIATE ADMINISTRATOR FOR COMMUNICATIONS

William Sheehan has been appointed Associate Administrator for Coummunications, NASA Headquarters, Washington, D.C., effective May 4, 1987.

This new position, announced in February 1987, reflects the importance that NASA management places on full and complete communications within and outside the agency. Sheehan will be the principal advisor to the Administrator and Deputy Administrator on public affairs matters. He will be responsible for policy level management and direction of NASA's public affairs, television development and internal communications organizations.

Sheehan comes to NASA from The Executive Television Workshop, Inc., where he was director of the Detroit office. Prior to this position he was executive director, Corporate Public Affairs, Ford Motor Co. and vice president Public Affairs, Ford Aerospace and Communications Corp., Detroit.

In 1974, Sheehan was appointed president of ABC News, a position he held until 1977. He had held various positions at ABC since 1961 including five years as a national and foreign correspondent. He was a radio and television anchorman, labor reporter and chief of ABC News' London bureau between 1961 and 1966. In 1966, he returned to New York to become vice president, Television News, senior vice president and then president, ABC News.

Recently, Sheehan has been working in public television on the local and national level as chairman of the board of station WTVS of Detroit and is a member of the board of directors and on the executive committee of the Public Broadcasting Service.

-more-

Sheehan is a native of Boston, Mass., and attended the University of Hartford. He is a member of the Detroit Economic Club, the Detroit Press Club and the Detroit Press Club Foundation, the Renaissance Club, the Overseas Press Club, the Radio-Television News Directors Assn. and the Aircraft Owners and Pilots Assn.

In announcing his appointment, Dr. James C. Fletcher, NASA Administrator, remarked, "Bill Sheehan is a newsman's newsman as well as an expert in public communication. He brings talent, common sense and integrity to the job. We are both honored and fortunate to have been able to attract so experienced an executive."

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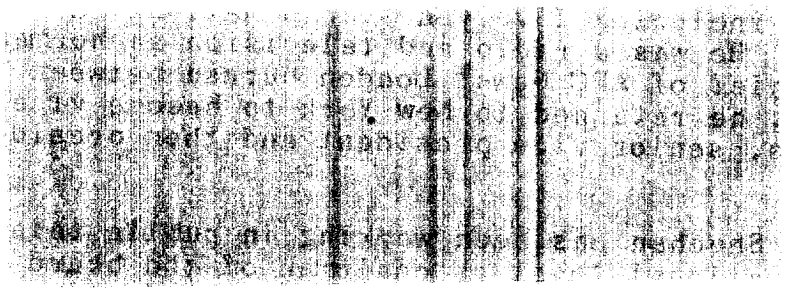

IFS #12

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:

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

April 24, 1987
4:00 p.m. EDT

RELEASE: 87-65

NASA ISSUES REQUESTS FOR PROPOSALS FOR SPACE STATION DEVELOPMENT

The National Aeronautics and Space Administration today issued Requests for Proposals (RFP) to United States industry for detailed design and construction of a permanently manned Space Station to be operational in low-Earth orbit in the mid 1990's. Proposals are due by July 21.

NASA has asked offerors to submit proposals for each of two options. Option one is the phased program, that would lead to permanent manned operations in space by 1996. Option two is the enhanced-capability Space Station configuration.

Under option one, the first phase of the Space Station would include the U.S. laboratory and habitation modules, four resource nodes, the U.S. polar-orbiting platform and experiment provisions outside the pressurized modules. The initial configuration would also include elements to be provided by the international partners. Funding for such international participation will be provided by other governments who will conduct their own detailed design and development work in phase with NASA.

For the first phase:

o 75 kilowatts of power will be available on orbit before any foreign modules are brought to the Station. The power will be provided by photovoltaic solar arrays. NASA will continue preliminary work on the solar dynamic power system to retain the ability to incorporate that system in the second phase of the program.

o Offerors are to submit proposals based on the following Space Station program dates: January 1994 for first element launch; January 1995 for man-tended capability; and the fourth quarter of 1995 for permanent manned capability.

-more-

o The U.S. laboratory shall be confined only to life sciences experiments compatible with microgravity materials research. Any non-compatible requirements, such as large centrifuges or animal holding facilities, would be provided for in an alternate module or resource node. Resource nodes are pressurized environmentally-controlled elements that link other pressurized elements such as laboratory and habitation modules. They serve as passageways for people and equipment, as well as providing an environment for crew activity, Space Station command and control operations and systems support.

Development of the second phase of the Space Station will be a priced contract option. At this time, it is anticipated that the contract option for the second phase, if exercised, would be accomplished starting in 1991. The second phase would add the upper and lower truss structure, additional external payload attach points, the solar dynamic power system, a free-flying co-orbiting platform and a servicing bay.

Industry also will submit separate proposals for an enhanced Space Station configuration which combines all the elements of the phased program. The enhanced configuration was the product of a 2-year definition and preliminary design study which was completed in January.

The industry proposals and an independent technical and cost review of the Space Station to be performed by the National Research Council will provide the basis for a decision on the overall Space Station configuration, capabilities, cost and annual funding projection to be incorporated in the fiscal year 1989 budget.

Four separate RFPs were issued from the four NASA "work package" field centers. NASA plans to let contracts for each of the work packages and has scheduled November 1987 as the effective date of the contracts.

The work packages and the NASA centers responsible are:

Work Package One, Marshall Space Flight Center, Huntsville, Ala. -- detailed design, construction, test and evaluation of two pressurized modules, one outfitted with appropriate systems for use as a microgravity research laboratory and the other to serve as a habitation module for the crew; three logistics transport systems; four resource node structures; the environmental control and life support system; internal thermal management system; and internal audio and video systems.

-more-

Work Package Two, Johnson Space Center, Houston -- detailed design, construction, test and evaluation of the structural framework to which the various elements of the Space Station will be attached; resource node outfitting; two airlocks; subsystems such as propulsion, external thermal management, communications and tracking, data management, guidance, navigation and control, and external audio and video; interface between the Space Station and the Space Shuttle; assembly and external systems maintenance; and provisions for extravehicular activities. Work Package Two elements provided for in the second phase of the Space Station would include the upper and lower truss elements and the mobile base for the Canadian mobile servicing system.

Work Package Three, Goddard Space Flight Center, Greenbelt, Md. -- detailed design, construction, test and evaluation of the automated free-flying polar platform and provisions for instruments and payloads to be attached externally to the Space Station. Work Package Three elements provided for in the second phase of the Space Station would include the co-orbiting free-flying platform; additional external payload attach points; and the servicing facility. Goddard also is responsible for building the Flight Telerobotic System, a telerobotic device that will be capable of manipulations in space such as Station assembly and payload servicing. It will be procured separately from the Work Package contract.

Work Package Four, Lewis Research Center, Cleveland -- detailed design, construction, test and evaluation of the electrical power generation, conditioning and storage, and power management and distribution systems.

Other NASA centers will support the detailed design and construction activities.

The Kennedy Space Center, Fla., will be responsible for preflight and launch operations and will be involved in logistics support activities. KSC will develop and outfit the launch site facilities and ground support equipment and will develop transportation equipment for moving large Space Station elements between work package contractors or from the development site to the launch site.

The Jet Propulsion Laboratory, Pasadena, will be responsible for program requirements and assessment, and the Langley Research Center, Hampton, Va., will be responsible for evolution planning for the Space Station.

-more-

The Space Station will be capable of growth both in size and capability and is intended to operate for several decades, well into the 21st century. It is planned to be placed in orbit about 250 miles above the Earth and at an inclination to the equator of 28.5 degrees.

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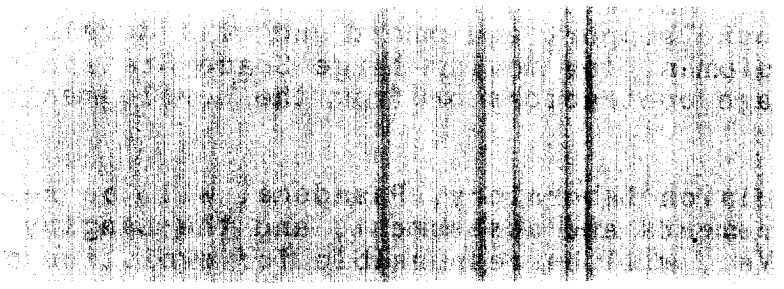

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NASA News

National Aeronautics and
Space Administration

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

For Release:
May 15, 1987

3:00 p.m. EDT

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

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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IF.5 #12

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."

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IF.5 #12

NASA News

National Aeronautics and
Space Administration

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

For Release:

Leon Perry
NASA Headquarters
(202) 453-8400

May 28, 1987

NOTICE TO EDITORS:

NASA SCIENTISTS TO ADDRESS PLANETARIUM DIRECTORS CONVENTION

Two leading NASA program scientists will participate in the 1987 annual convention of the International Planetarium Society, Inc. The meeting will be hosted by the South East Planetarium Directors Association, June 7-14, at the Brevard Community College (BCC) in Cocoa, Fla.

Henry Brinton, a physicist in the Solar System Exploration branch, NASA Headquarters, Washington, D.C., will present an illustrated talk on NASA's goals for planetary exploration for the next 10-20 years. Brinton will speak in the BCC community auditorium, on Monday evening, June 8, at 6 p.m.

On Tuesday, June 9, Dr. Edward Weiler, chief program scientist for the Hubble Space Telescope program, will be the convention speaker. Dr. Weiler will give a status report on the final development, launch preparations and anticipated scientific data for the Space Telescope Program. The Tuesday session is also scheduled for the BCC community auditorium, at 6 p.m.

end

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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:
September 25, 1987

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

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.

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IF.5 #12

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)

September 29, 1987

RELEASE: 87-144

SECONDARY PAYLOADS ANNOUNCED FOR SHUTTLE DISCOVERY MISSION

NASA today announced that secondary payloads for the next Space Shuttle mission will include five microgravity experiments; life science, atmospheric science and infrared communications experiments and two student experiments as well.

The primary payload to be carried aboard the orbiter Discovery on STS-26, scheduled for launch in June 1988, is NASA's Tracking and Data Relay Satellite. Listed below is the additional cargo which will be flown in Discovery's middeck area.

* Automatic Directional Solidification Furnace -- a technology demonstration of directional solidification of magnetic materials, immiscibles and infrared detection materials (sponsored by NASA's Office of Space Science and Applications (OSSA)).

* Physical Vapor Transport of Organic Solids -- a materials research experiment of the 3M Corp., St. Paul, Minn., to grow crystaline films on selected substrates of organic solids (sponsored by NASA's Office of Commercial Programs (OCP)).

* Infrared Communications Flight Experiment -- to demonstrate feasibility of using diffuse infrared light as a carrier for Shuttle crew communications (sponsored by NASA's Office of Space Flight (OSF)).

* Protein Crystal Growth -- utilizes the weightless environment of space flight to grow protein crystals of a size and quality needed to determine the molecular structure of the proteins. Such information is essential for understanding protein functions, synthesis and for drug design (co-sponsored by OCP and OSSA).

- more -

* Isoelectric Focussing Experiment -- an experiment to gather data on the extent of electro-osmosis in space (sponsored by OSSA).

* Handheld Microgravity Experiment -- simple experiments to study low gravity effects on selected physical processes. This experiment, also called Phase Partitioning Experiment, will study the physics associated with the separation of two-phase polymer solutions (in this case, dextran and polyethylene glycol), which could lead to a better understanding of a method used in separating biological cells (sponsored by OSSA).

* Aggregation of Red Blood Cells -- an experiment to study aggregation of red cells and blood viscosity under low-gravity conditions (sponsored by OSSA).

* Mesoscale Lightning Experiment -- TV and photographic data will be used to survey the correlation between lightning phenomena and severe weather activity (sponsored by OSSA).

* Earth-limb Radiance Experiment -- an experiment to obtain measurements of Earth-limb radiance for various positions of the Sun (sponsored by OSSA).

* Student Experiment -- designed by high school student Lloyd Bruce, St. Louis, Mo., and sponsored by McDonnell Douglas, the titanium grain crystal reorganization study will heat titanium metal filaments and observe the effect of weightlessness on its molecular structure (sponsored under NASA's Space Shuttle Student Involvement Program, Office of Educational Affairs).

* Student Experiment -- designed by S. Richard Cavoli, Marlboro, N.Y., and sponsored by Union College, Schenectady, N.Y., to study the control of crystal growth through the use of a semi-permeable membrane. Such crystals have application to development of image-intensifying screens for use to detect gamma and X-rays (sponsored under SSIP).

- end -

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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:

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Hold For Release:
October 2, 1987

Release No. 87-127

NOTE TO EDITORS/NEWS DIRECTORS

NASA AND WALT DISNEY TO SHARE PLANT GROWTH RESEARCH

Today marks the beginning of a unique agricultural research program by NASA and Walt Disney World Co. that may have significant benefits in planning for future extended duration manned space flights.

NASA and university-developed space agricultural research and production systems are now being showcased in the Kraft-sponsored facility known as The Land, EPCOT Center. Visitors can see the project near the end of the "Listen to the Land" boat ride which features plants grown hydroponically (without soil).

EPCOT plant scientists will be performing scientific research using NASA plant production systems which include six plant growing racks and associated support controls and equipment like those currently being used for research in NASA's Controlled Ecological Life Support System (CELSS) at Kennedy Space Center, Fla. The EPCOT research will be conducted in parallel with the space agricultural investigations ongoing at Kennedy Space Center.

The research at EPCOT is a continuation of NASA's CELSS program managed by the Life Sciences Division of NASA's Office of

Space Science and Applications. Unanswered questions about how to sustain life over long periods of time in a closed environment such as on a Space Station or for a colony on the Moon or Mars spawned the CELSS research.

Developing a "bioregenerative" life support system - that could recycle the air, liquids and waste and also supply food without having to be resupplied from Earth - is one of the goals of CELSS. Each part of such a system will be thoroughly analyzed and tested with on the ground before being put to trial in space.

Ground studies have been underway for some time inside Kennedy Space Center's Life Sciences Support Facility. Researchers have grown plants in an environmentally-controlled chamber about the size of a Spacelab module, the orbiting laboratory that has flown aboard the Space Shuttle. Hydroponic wheat crops grown in the chamber were nourished through specialized nutrient delivery systems. The chamber allows for careful regulation of temperature, humidity, atmosphere and lighting - the kind of controls that would be necessary for a plant growth module on a Space Station. These systems may help determine how to successfully grow enough food in space to feed a crew of astronauts on a long-duration space mission.

Other crops being considered for use in the CELSS chamber include potatoes (white and sweet), soy beans, lettuce, rice and sugar beets.

A variety of plants will be grown in the sheltered rack units at EPCOT, where experimental prototypes are showcased. EPCOT plant scientists will test different crops in the units and will share the data with NASA scientists on a regular basis. EPCOT researchers will have the latitude to try their ideas and conduct various studies to maximize the scientific data return.

The rack units at EPCOT will also generate growth and productivity data on many different crop species while displaying methods being considered for growing plants in space to the public. In addition, Walt Disney World Co. has agreed to provide staff expertise and literature in agricultural engineering, plant disease, and tests of potential biological control agents for their ability to enhance plant growth and prevent disease.

The joint research was formalized last month under a memorandum of understanding (MOU). This agreement supports NASA's attempt to answer questions about potential hardware, systems, and techniques for the growth and production of plants, the preparation of food and the processing of wastes in a controlled biological recycling system.

In signing the MOU, NASA recognizes that exchanges between the agency and industrial organizations will accelerate understanding of possible applications of space agriculture on Earth.

# # # #

NOTES TO EDITORS: A news conference will be held Friday, October 2 at The Land Pavilion, EPCOT Center, Orlando, Fla., at 10:15 a.m. News media interested in attending the conference should contact the Walt Disney Media Relations office at (305) 824-4531.

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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:

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

October 19, 1987

RELEASE: 87-156

GENERAL DYNAMICS SELECTED FOR GOES LAUNCH SERVICES

NASA and the Department of Commerce today announced the selection of General Dynamics Space Systems Div., San Diego, for negotiations leading to award of a contract for expendable launch vehicle (ELV) transportation services for the department's National Oceanic and Atmospheric Administration (NOAA) meteorological spacecraft GOES I, J and K.

NASA, acting as NOAA's agent, will award the contract to General Dynamics contingent upon reaching final terms and conditions for the Atlas Centaur transportation services mutually acceptable to NASA and the company.

GOES spacecraft (geostationary operational environmental satellites) provide near-continuous, high-resolution visual and infrared imaging of weather systems over large areas of the Earth. They are especially valuable in identifying hurricanes at an early stage and other major storms and in providing critical data needed on a routine basis for weather forecasting.

This contract will be the first under NASA's plan to acquire ELV transportation services commercially. General Dynamics will assume total systems preformance responsibility for overall program and subcontractor management; vehicle design, production, testing and integration; mission integration; launch services; system effectiveness; and overall launch vehicle performance. General Dynamics will make separate arrangements for use of government-owned facilities and other assets.

The contemplated, firm fixed-price contract will provide launch services for GOES-I, targeted for launch in March 1990; GOES-J, targeted for December 1990; and GOES-K, targeted for May 1992. It also will contain options for GOES-L and M, for which launch schedules and arrangements will be determined. General Dynamics offered a price of approximately $315 million for five launches to geosynchronous transfer orbit.

- more -

Subcontractors to General Dynamics are: Rockwell International, Rocketdyne Div., Canoga Park, Calif.; United Technologies, Pratt and Whitney, West Palm Beach, Fla.; Honeywell Inc., Avionics Div., Clearwater, Fla.; Teledyne Systems Co., Northridge, Calif.; Gulton Data Systems Div., Albuquerque, N.M.; and Cincinnati Electronics, Cincinnati, Ohio.

The GOES ELV transportation services contract will be managed by the NASA Lewis Research Center, Cleveland.

- end -

IF.5 #12

NASA News

National Aeronautics and
Space Administration

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

For Release:

Barbara Selby
NASA Headquater, Washington, DC
(Phone: 202/453-8536)

November 9, 1987
3:00 P.M.

RELEASE: 87-168

INCREASED SPACE SHUTTLE LANDING WEIGHT TO RELIEVE PAYLOAD BACKLOG

NASA today announced an increase of the allowable end-of-mission landing weight for Space Shuttle orbiters. The allowable landing increase to 230,000 pounds from the previous limit of 211,000 pounds has been made possible by an on-going structural analysis and additional review of forces encountered by the orbiter during maneuvers shortly before landing.

Rear Admiral Richard H. Truly, associate administrator for space flight, said "The total Space Shuttle performance capability requires a balance between lift capacity to orbit and the allowable return weight during reentry and landing. This new capability will improve this balance and add considerable flexibility and efficiency to our Space Transportation System.

"Our initial analysis indicates that this change will allow the Space Shuttle to carry a cumulative weight in excess of 100,000 pounds of additional payloads into orbit through 1993. The additional downweight capability also will provide an important balance between delivery and return cargoes at the Space Station orbit of 220 nautical miles," Truly added.

One potential change, being assessed by NASA to take advantage of this new capability, is the possibility of flying all Spacelab missions on the Columbia spacecraft. This approach would allow configuring Columbia for increased on-orbit stay time and allow optimum use of the Discovery and Atlantis spacecraft, both of which have greater ascent lift capability.

Although this capability is effective immediately, only certain flights on the Shuttle manifest have been limited by the landing weight constraint. The first flight planned to take advantage of this increased Shuttle capability is STS-32, presently scheduled to fly the ASTRO-1 mission in the summer of 1989. Additional payloads to be added to this and other missions are being assessed and will be assigned when the next edition of the Shuttle manifest is issued.

- end -

IF.5 #12

NASA News

National Aeronautics and
Space Administration

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

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

For Release:
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RELEASE: 87-177

NASA SELECTS AEROSPACE FIRMS TO DESIGN AND DEVELOP SPACE STATION

NASA today announced selection of four aerospace firms for final negotiations leading to award of cost-plus-award-fee contracts to design, develop, test and evaluate and deliver the components and systems comprising the permanently manned Space Station to be placed into Earth orbit in the mid-1990's.

The work to be performed is broken down into four packages each containing a unique but interdependent portion of the Space Station. Each work package is divided into 2 phases. Phase I covers the currently approved elements of the Space Station program. Phase II is an option for possible future enhancement of the Space Station's capabilities.

The four companies selected for the Phase I effort are:

- Work Package 1
  Boeing Aerospace Company, Huntsville, Ala.

- Work Package 2
  McDonnell Douglas Astronautics Co., with locations in Huntington Beach, Calif., and Houston

- Work Package 3
  General Electric Company, Astro-Space Division, with locations in Valley Forge, Pa., and East Windsor, N.J.

- Work Package 4
  Rocketdyne Division, Rockwell International, Canoga Park, Calif.

Total cost proposed by the four companies is approximately $5 billion for the Phase I effort and approximately $1.5 billion for the Phase II priced-option effort. The combined work package prime contractor cost, should the Phase II option be exercised, would be approximately $6.5 billion.

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All selected offerors had technically superior proposals and proposed the lowest cost for their work package. The total cost proposed by all four proposers is within NASA's cost estimate for the Space Station program.

The critical interdependency of the work packages creates an unusual situation where, because of the unique interrelationships and interfaces between the work packages and the need for intercenter equipment deliveries, significant cost negotiations and adjustments are expected as part of contract negotiation.

Each firm was selected after an exhaustive review of their technical and cost proposals received in response to the four Space Station request for proposals. Aproximately 300 people participated in each work package review. Together, the contractors will work closely, under the direction of the Space Station program office, in designing, building and integrating the Space Station.

The contracts include two program phases. Phase I will cover the approximate 10-year period from contract start through 1 year after assembly of the Space Station is completed. Phase II is a priced option which, if exercised, will enhance the capabilities of the Space Station configuration by addition, in the 1991-1999 time frame, of an upper and lower truss structure, additional external payload attachment points, a solar dynamic power system, a free-flying co-orbiting platform and a servicing facility.

Phase I of the Work Package 1 contract, managed by the Marshall Space Flight Center, Huntsville, Ala., calls for Boeing to provide the U.S. laboratory and habitation modules, logistics elements, resource node structures, airlock systems, environmental control and life support system, internal thermal, audio and video systems and associated software.

Overall management, systems engineering and integration, and operations and logistics support of these elements also will be performed by Boeing. Boeing's proposed cost for performance of the Work Package 1, Phase I effort is approximately $750 million. Boeing's proposed cost for the Work Package 1, Phase II priced option is approximately $25 million.

Major Boeing subcontractors and their places of performance are: Teledyne Brown Engineering, Huntsville, Ala.; Lockheed Missiles and Space Co., Sunnyvale, Calif.; Hamilton Standard, Windsor Locks, Conn.; Garrett Airesearch, Torrance, Calif.; Grumman Aerospace Corp., Houston; ILC Space Systems, Houston; and Fairchild-Weston Systems Inc., Syossett, N.Y.

The unsuccessful offeror is Martin Marietta Corp., New Orleans, with major subcontractors McDonnell Douglas Astronautics Co., Huntsville, Ala.; Hamilton Standard, Windsor Locks, Conn.; General Electric, Valley Forge, Penn.; Honeywell, Inc., Clearwater, Fla.; Wyle Laboratories, Huntsville, Ala.; United Space Boosters Inc., Huntsville, Ala.; and Hughes Aircraft Co., Irvine, Calif.

Phase I of the Work Package 2 contract, managed by Johnson Space Center, Houston, calls for McDonnell Douglas Astronautics Co. to provide the integrated truss structure, mobile servicing system transporter, airlocks, resource node outfitting, hardware and software for data management system, the communications and tracking system, the guidance, navigation and control system, extravehicular activity systems, the propulsion system, the thermal control system and associated software.

McDonnell Douglas' proposed cost for performance of the Work Package 2, Phase I effort is approximately $1.9 billion. McDonnell Douglas' proposed cost for the Work Package 2, Phase II priced option is approximately $140 million.

Major McDonnell Douglas subcontractors and their place of performance are: IBM, Houston and Owego, N.Y.; Lockheed Missiles and Space Co., Houston and Sunnyvale, Calif.; RCA Corp., Camden, N.J.; Honeywell, Clearwater, Fla.; and Astro, Carpinteria, Calif.

The unsuccessful offeror was Rockwell International Corp., Downey, Calif., with major subcontractors Grumman Corp., Bethpage, N.Y. and Houston; TRW, Redondo Beach, Calif.; Intermetrics, Huntington Beach, Calif.; Sperry Corp., Phoenix, Ariz.; Harris, Melbourne, Fla., and UTC, Arlington, Va.

Phase I of the Work Package 3 contract, managed by Goddard Space Flight Center, Greenbelt, Md., calls for General Electric (GE) to provide a free-flying, unmanned, polar-orbiting platform which will carry scientific experiments in sun-synchronous or other near-polar inclination orbits, and two attach points, including a pointing system, for accommodating scientific instruments on the manned base.

GE also is responsible for integration of the flight telerobotic servicer to the Space Station, appropriate Space Station information system activities, associated software and for planning NASA's role in satellite servicing. Additionally, GE is responsible for defining requirements and interfaces for a satellite servicing facility. GE's proposed cost for performance of the Work Package 3, Phase I effort is approximately $800 million.

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Included in the Phase II option is a free-flying unmanned co-orbiting platform, three additional attach points including another pointing system and a satellite servicing facility. GE's proposed cost of the Work Package 3, Phase II priced option is approximately $570 million.

GE was the sole offeror on Work Package 3. GE's team member is TRW Corp., Redondo Beach, Calif.

Phase I of the Work Package 4 contract, managed by the Lewis Research Center, Cleveland, calls for Rocketdyne to design and fabricate the Space Station electric power system. This system includes power generation and storage, management and distribution of electrical power and associated software. The electric power system, using photovoltaic solar arrays and batteries, is required to have the capability to deliver 75 kw of electric power.

In Phase I, Rocketdyne also is responsible for providing solar arrays, battery assemblies and common power management and distribution components for the polar platform and for performing a proof-of-concept test for a possible future solar dynamic power system utilizing the Brayton cycle system. Rocketdyne's proposed cost for performance of the Work Package 4, Phase I effort, utilizing the Brayton cycle proof-of-concept test, is approximately $1.6 billion.

Included in the Phase II option is a 50 kw solar dynamic power system. Rocketdyne's proposed cost for the Work Package 4, Phase II priced option is approximately $740 million.

Rocketdyne was the sole offeror on Work Package 4. The Rocketdyne team members and their places of performance are: Ford Aerospace and Communications Corp., Palo Alto, Calif.; Harris Corporation, Melbourne, Fla.; The Garrett Corporation, Tempe, Ariz.; General Dynamics Corp., San Diego, Calif.; and Lockheed Missiles and Space Inc., Sunnyvale, Calif.

The Space Station will be a permanently-manned base in Earth orbit for conducting scientific research and development of new technologies and will accommodate private sector research and development activities. In the future, the Space Station will serve as the staging base for continued manned and unmanned exploration of the solar system. The Space Station will be placed in orbit in the mid-1990's and will be capable of growth both in size and capability and is intended to operate for several decades, well into the 21st century.

- end -

SPACE STATION WORK PACKAGE FACT SHEET

WORK PACKAGE 1

Dominic Amatore
Marshall Space Flight Center, Huntsville, Ala., 35812
(Phone: 205/544-6533)

Marshall Space Flight Center is responsible for Space Station Program Work Package 1, including responsibility for the laboratory module, habitation module, logistics elements and fabrication of the primary structure for the resource nodes. Marshall also is responsible for development of the environmental control and life support system, internal components of the audio/visual and thermal control systems, as well as for operational capability development for users in the laboratory module. The Johnson Space Center, through special provisions within the Work Package 1 contact, will exercise technical direction for the manned space subsystems.

LABORATORY MODULE

The U.S. laboratory module will be cylindrical, measuring approximately 44 feet long and 14 feet in diameter and will provide a shirt-sleeve environment for performing laboratory functions. The laboratory module will be capable of supporting multi-discipline payloads including materials research and development activities, materials processing demonstrations, life sciences research and other space science investigations requiring a pressurized area. User-provided equipment that can be housed in the laboratory module include furnaces for growing semiconductor crystals, electrokinetic devices for separating pharmaceuticals, support equipment needed to carry out a wide spectrum of low-gravity experiments and applications, and a centrifuge for variable gravity experiments in life sciences.

HABITATION MODULE

Facilities for eating, sleeping, personal hygiene, waste management, recreation, health maintenance and other functions requiring pressurized space will be provided in the habitation module. The module will be the same size as the laboratory module and will accommodate up to 8 astronauts.

Using the health maintenance facility, astronauts will be able to monitor their health through vital signs, X-rays and blood samples. There also will be exercise equipment for daily physical conditioning.

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LOGISTICS ELEMENTS

These include elements required for transporting cargo to or from the Space Station for the resupply of items required for the crew, station, and payloads; and for on-orbit storage of these cargos. A key element will be the pressurized logistics carrier, which will carry items used inside the Space Station modules. The other elements include unpressurized logistics carriers used for transporting spares used external to the Space Station modules, fluids and propellants.

ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEM (ECLSS)

The ECLSS will provide a shirt-sleeve environment for the astronauts in all pressurized modules on the Space Station. A key feature is the regenerative design employed in the air revitalization and water reclamation systems.

RESOURCE NODE STRUCTURE

The resource nodes are required to interconnect the primary pressurized elements of the manned portion of the Space Station and also will house certain key control functions. The equipment provided by Work Package 1 consists of the resource node structures, berthing mechanisms, racks, ECLSS, internal thermal control, and internal audio and video communication systems.

WORK PACKAGE 2

Billie Deason
NASA Johnson Space Center, Houston, 77058
(Phone: 713/483-5111)

NASA's Johnson Space Center is responsible for the design, development, verification, assembly and delivery of the Work Package 2 Space Station flight elements and systems, which include the integrated truss assembly, propulsion assembly, mobile servicing system transporter, resource node design and outfitting, external thermal control, data management, operations management, communication and tracking, extravehicular systems and guidance, navigation and control systems, and the airlocks. JSC also is responsible for the attachment systems to the STS for its periodic visits. Additionally, JSC is responsible for flight crews, crew training and crew emergency return definition, and for operational capability development associated with operations planning. JSC will provide technical direction to the contractor for the design and development of all manned space subsystems.

INTEGRATED TRUSS ASSEMBLY

The integrated truss assembly is the Space Station structural framework to which the modules, solar power arrays, external experiments, Earth- and astronomical-viewing instruments, and mobile transporter will be attached.

PROPULSION ASSEMBLY

The propulsion assembly will be used to adjust or maintain the orbit of the Space Station to keep it at the required altitude. Work package 2 has responsibility for the overall propulsion system. Technical direction for the thruster assembly elements of the propulsion system will be provided by MSFC.

MOBILE TRANSPORTER SYSTEM

The mobile servicing system will be a multi-purpose mechanism equipped with robotic arms to help assemble and maintain the Space Station. The contractor will build the mobile base; Canada will provide the mobile servicing system which includes robotic arms and special purpose dextrous manipulators.

RESOURCE NODES

The resource nodes house most of the command and control systems for the Space Station as well as being the connecting passageways for the habitation and laboratory modules. Work Package 2 will outfit the node structures provided by Work Package 1 to accomplish the objectives of each node.

EVA SYSTEMS

Extravehicular activity (EVA) systems includes equipment such as the extravehicular mobility unit (EMU) or spacesuit, provisions for communication, physiological monitoring, and data transmission, EVA crew rescue and equipment retrieval provision, and EVA procedures. Airlocks for crewmember extravehicular activity also will be designed as part of Work Package 2.

EXTERNAL THERMAL CONTROL

The external thermal system provides cooling and heat rejection to control temperatures of electronics and other Space Station hardware located outside the modules and nodes.

ATTACHMENT SYSTEMS

In addition to devices permitting Space Station docking by the Space Shuttle and logistics resupply modules, this includes systems for attaching experiment packages and other external hardware to the truss structure.

GUIDANCE, NAVIGATION AND CONTROL SYSTEM (GN&C)

The guidance, navigation and control system is composed of a core system and traffic management functions. The core system function provides attitude and orbital state maintenance, supports the pointing of the power system and thermal radiators, accomplishes periodic reboost maneuvers, and provides Space Station attitude information to other systems and users.

The traffic management function provides for controlling all traffic in the area around the Space Station, including docking and berthing operations and trajectories determination of vehicles and objects which may intersect the orbit of the Space Station.

COMMUNICATIONS AND TRACKING SYSTEM (C&T)

The communications and tracking system is composed of six subsystems: space-to-space communications with crew members during extravehicular activity, aboard the Space Shuttle, and with the Orbital Maneuvering Vehicle; space-to-ground communications through the Tracking and Data Relay Satellite System to ground data networks; internal and external voice communication through the audio subsystem; internal and external video requirements through the video subsystem; management of C&T resources and data distribution through the control and monitor subsystem; and navigation data through the tracking subsystem.

DATA MANAGEMENT SYSTEM (DMS)

The data management system provides the hardware and software resources that interconnect onboard systems, payloads, and operations to perform data and information management. Functional services provided by DMS include data processing, data acquistion and distribution, data storage, and the user interface to permit control and monitoring of systems and experiments.

Crew safety is an essential consideration in the development of the Space Station. A major system failure aboard the Space Station, injuries or illness may require the return of crew members to Earth during a period when the Space Shuttle is unavailable. NASA's Johnson Space Center has responsibility for conducting definition-phase studies of a Crew Emergency Return Vehicle which could be used to supplement the Shuttle in such circumstances.

WORK PACKAGE 3

Michael Braukus
Goddard Space Flight Center, Greenbelt, Md. 20771
(Phone: 301/286-5565)

NASA'S Goddard Space Flight Center is responsible for development of several of the Station's elements including the free-flying platforms and attached payload accommodations, and for planning NASA's role in satellite servicing. Goddard also has responsibility for developing the Flight Telerobotic Servicer which is being procured through a separate competition.

FREE-FLYING PLATFORMS

Goddard will manage the detailed design, development, test and evaluation of the automated free-flying polar platform. This unmanned platform will feature modular construction to permit on-orbit ease of serviceability and flexibility for accommodating a variety of scientific observations.

ATTACHED PAYLOAD ACCOMMODATIONS

The Space Station attached payloads are the instruments and experiments designed to gather scientific data while attached directly to the truss framework of the Space Station. Goddard is responsible for providing utilities such as power, thermal control, data handling, pointing stability and other equipment needed to operate the payloads and for insuring that the instruments are pointed at the intended targets. Two attachment points are provided, one of the attach points is fixed and the other has an articulated pointing system.

FLIGHT TELEROBOTIC SERVICER

Goddard is responsible for building the Flight Telerobotic Servicer. This system will be capable of in-space assembly of Station elements and payload servicing.

As the system is evolved, it will perform telerobotic servicing and repair of spacecraft visiting the Space Station. In the future, a telerobotic servicer-equipped Orbital Maneuvering Vehicle could retrieve, as well as service, spacecraft beyond the Space Station's orbit.

WORK PACKAGE 4

Mary Ann Peto
Lewis Research Center, 21000 Brookpark Road,
Cleveland, Ohio, 44135
(Phone: 216/433-2902)

Lewis Research Center is responsible for the end-to-end electric power system architecture for the Space Station and for providing the solar arrays, batteries, and common power distribution components to the platforms.

The power system includes power generation and storage, and the management and distribution of power to the final user interface. The electric power system is required to have the capability to deliver 75 kW of electric power with a growth potential to 300 kW.

POWER GENERATION

Initially, Space Station power will be provided by eight flexible, deployable solar array wings. This configuration minimizes the complexity of the assembly process by taking advantage of the technology demonstrated on Space Shuttle flights. Each 32- by 96-foot wing consists of two blanket assemblies covered with solar cells. These are stowed in blanket boxes which are attached to a deployment canister. Each pair of blankets is to be deployed and supported on a coilable, continuous longeron mast. A tension mechanism will supply tension to the blanket as it reaches complete extension. The entire wing will be tied structurally to the transverse boom by means of the beta gimbal assembly.

To provide the power needed during the period of Space Station assembly, two solar wings and other elements of the power system are scheduled to be carried up on each of the first two Space Station assembly flights. These four wings will provide 37.5 kw of power. The remaining four panels will be delivered on orbit after the permanently-manned configuration is reached.

Lewis also is responsible for developing and testing proof of concept hardware for the solar dynamic power module to prepare for the growth phase of the Station. In addition, sufficient preliminary design efforts will be performed to insure that the Space Station can accommodate the solar dynamic modules.

POWER STORAGE

Ni-H2 batteries will store the energy produced by the solar arrays. A battery pack is made up of 23 Ni-H2 cells, wiring harness and mechanical/thermal support components. On discharge, this operates near 28 v which allows the flexibility to connect several packs in series to obtain a high voltage system for the Space Station and platforms or use of single packs as a candidate for other low voltage applications. Ni-H2 batteries offer minimum weight and high reliability with minimum redundancy required for the polar platform. During the eclipse periods, power is supplied by the energy storage systems.

POWER MANAGEMENT AND DISTRIBUTION (PMAD)

The 20 kHz PMAD system is designed specifically to meet aerospace requirements. It is based upon rapid semiconductor switching, low stored reactive energy, and cycle-by-cycle control of energy flow, allowing tailoring of voltage levels. It is user friendly and can easily accommodate all types of user loads.

The PMAD system will deliver controlled power to many scattered loads. The high frequency ac power system was selected to provide higher efficiency, lower cost and improved safety.

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STATEMENT OF DR. JAMES C. FLETCHER, NASA ADMINISTRATOR

NASA HEADQUARTERS; WASHINGTON, D.C.; DECEMBER 1, 1987

Good afternoon, ladies and gentlemen. Thank you for coming. I have a brief announcement concerning NASA's awards of Space Station development contracts. Then, Andy Stofan, our Associate Administrator for the Space Station Office, will fill you in on the details. Following that, Andy, Tom Moser, the Space Station Program Office Director, and I will be happy to take your questions.

I am pleased to announce today that NASA has selected four companies and their respective contractor teams to design and build the elements of a permanently manned Space Station to be operational in low-Earth orbit in the mid-1990s.

The specific plan and schedule for design, development and deployment of the Space Station will, of course, depend on decisions made in the budget and appropriations processes.

The teams selected are headed respectively by: Boeing Aerospace Company, Huntsville, Alabama; McDonnell Douglas Astronautics Company, at Huntington Beach, California and Houston, Texas; General Electric Company, Astro-Space Division, at Valley Forge, Pennsylvania and East Windsor, New Jersey; and Rockwell International, Rocketdyne Division, Canoga Park, California.

Let me stress that all of the industry proposals NASA received for this project were first-rate. The proposals were rigorously and exhaustively reviewed, for both technical and cost considerations. They were evaluated carefully, thoroughly and thoughtfully, based on all the factors involved.

I made my decision based on those reviews and evaluations. I wanted the best - in engineering expertise; in creativity; in innovative, solid design philosophy; and in cost-effectiveness. And I believe we've got the best.

The nation can rest assured that some of the best minds in the American aerospace industry will design and build the Space Station, which is so vital to our country's future in space.

I congratulate the firms that have been selected. And I know that our Space Station Office looks forward to working with them to help integrate their efforts into a common blueprint we all can work from.

Designing the Space Station and building it in orbit will be a challenge of immense magnitude. But when we're through, we will have built the key to our future in space.

We will have a permanent base in orbit to conduct scientific and industrial research and to develop new technologies, products and processes to benefit us here on Earth. We will have a staging base for future, more ambitious missions to explore the solar system. And we will have taken a giant step forward in the race to revitalize the American economy.

The global competitive challenge to America's long-dominant position in science and technology reaches into every sector of our economy. A major test of how we meet that challenge will be our progress in space in the closing years of this century. The Space Station is too important to this effort to be held hostage to political considerations.

Long-term funding and continued commitment are essential if we are to build America's future in space and secure our leadership there for the foreseeable future.

- end -

IF.5 #13

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:

April 15, 1987
4:00 p.m. EDT

Sarah Keegan
Headquarters, Washington, D.C.
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John Lawrence
Johnson Space Center, Houston, Texas
(Phone: 713/483-5111)

RELEASE NO: 87-58

CHIEF ASTRONAUT JOHN YOUNG APPOINTED TO NEW POST

John W. Young today was appointed by Johnson Space Center director Aaron Cohen as special assistant to the center director for engineering, operations and safety.

In his new position, Young will have direct and immediate access to the center director and other senior managers to aid in the timely definition and resolution of issues affecting the safe return to flight of the Space Shuttle.

Cohen said, "John Young's acceptance of this new responsibility will strengthen the link between operational and engineering elements at the Johnson Space Center. John's extensive flight experience coupled with his engineering background and his solid judgment on flight safety will be particularly important in returning the Shuttle to flight status."

Young also will advise the center director on engineering, operational and safety aspects of Space Station and new initiatives such as the second generation Shuttle and the National Aero-Space Plane.

As the United States' most experienced astronaut, with six space missions spanning the Gemini, Apollo and Space Shuttle eras, Young will remain eligible to command future Shuttle astronaut crews.

Henry Hartsfield, deputy chief of the astronaut office, will assume Young's astronaut office duties until his permanent successor is selected, which is expected to be announced in the next few weeks.

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Young, 56, has been chief of the astronaut office since January 1974. He was among the second group of astronauts selected by NASA in September 1962. He is a retired captain in the U.S. Navy.

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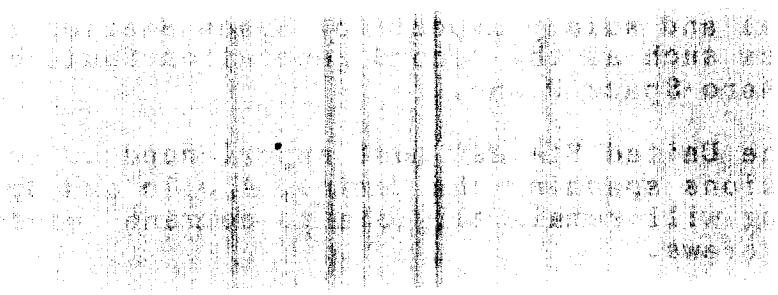
This release and other NASA information is available electronically through DIALCOM, INC. For access to NASA NEWS through this system, contact Jim Hawley, DIALCOM, INC. at 202/488-0550.



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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:

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

Sarah Keegan
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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.

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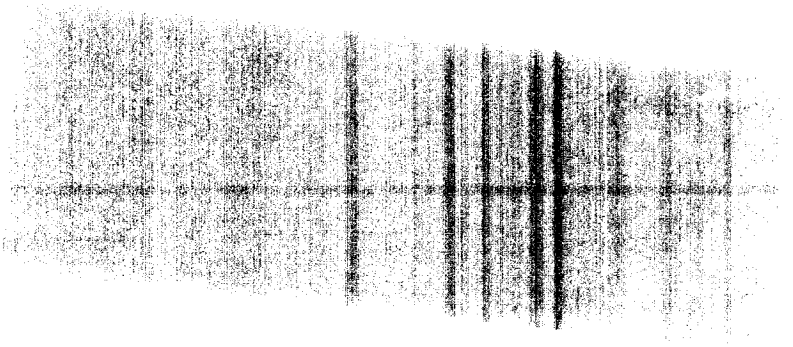

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NASA News

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

For Release:

Barbara Selby
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

November 12, 1987

Barbara Schwartz
Johnson Space Center, Houston
(Phone: 713/483-5111)

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.

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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.

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NOTE TO EDITORS/NEWS DIRECTORS:

Hurricane Mesa, Utah, tractor rocket test video, #VCL-1208, is available at Johnson Space Center, 713 483-8643.

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NASA News

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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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Barbara Selby
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

Barbara Schwartz
Johnson Space Center, Houston, Texas
(Phone: 713/483-5111)

For Release:
December 3, 1987

NOTE TO EDITORS: SHUTTLE ESCAPE SYSTEM BRIEFING

Orbiter Crew Escape Systems Manager William A. Chandler will brief reporters and photographers on the status of NASA's crew escape studies on Dec. 8, 9:30 a.m. PST, at the Naval Weapons Center, China Lake, Calif., prior to a tractor rocket test. Other briefers will be Astronaut Stephen Nagel, Escape System Flight Test Program Manager Robert Rice and Naval Weapons Center Project Manager Rusty Bates. They will discuss tractor rockets and the escape, crew equipment and Phase II studies.

Following the briefings, the C-240 aircraft outfitted with the test equipment, will be on the runway for viewing and photography. A bus will be provided to take news media representatives to the test range for viewing the tractor rocket test where a life-like dummy will be pulled from the C-240 at an altitude of about 12,000 feet.

Those planning to attend the briefing and test should call Barbara Schwartz (713/483-5111) or Nancy Lovato (805/258-8381) no later than Dec. 4. Badging, camera passes and social security numbers are required for access to the Naval Weapons Center.

-end-

IF 6 4/28

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:
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.

# # # # # #

M. Konjevich
SI-SRV-1

IF. 6 #24

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. 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.

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-May 1, 1987

M. Konjevich
SI-SRV-1

IF.6 H2W

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.

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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.

IF. 6 HLV

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. 62 - 87

NOTICE TO EDITORS/NEWS DIRECTORS:

GOVERNOR MARTINEZ TO ATTEND SPACEPORT USA PROGRAM

KENNEDY SPACE CENTER, Fla. - Florida Gov. Robert Martinez will attend the opening of a space colonization symposium to be held at Spaceport USA - KSC's visitors' center - on Thursday, May 28.

The symposium is sponsored jointly by the NASA Kennedy Management Association and the East Central Florida Space Business Roundtable.

The featured speaker will be Dr. Gerard O'Neill, noted physics professor and researcher on space colonization.

The session will open at the IMAX Theater at 6:30 p.m. and be followed at 7:30 p.m. by O'Neill's presentation on space colonization - "Touching the High Frontier" - in the adjacent Galaxy Theater.

Governor Martinez, speaking elsewhere in Brevard County earlier on that date, will make a brief appearance at the IMAX Theater at 6:30 p.m. He is to make a major announcement relating to Florida's efforts to promote space commercialization efforts within the state.

Coverage of the governor's visit and colonization seminar is open to news media representatives and those planning to attend may drive directly to Spaceport USA, which located outside the center's security area. But seating is limited and those planning to attend should contact the News Center at Area Code 305/867-2468 of their intentions no later than Wednesday at 4 p.m.

Personnel from the KSC News Center will be on hand to assist media representatives with their coverage.

# # # # #

May 22, 1987

M. Konjevich
SI-SRV-1

IF 6 #24 ✓

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 NEWS RELEASE NO. 59-87

TITUSVILLE FIRM WINS CONTRACT FOR CONSTRUCTION OF NASA FACILITY

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Holloway Corporation, Titusville, Fla., a $355,149 contract for construction of the Spaceflight Tracking and Data Network (STDN) Facility Support Service Building.

The one-story, pre-engineered metal building will house computer equipment, office space and small shops to support the Goddard S-Band Tracking Data Network Station located just west of Spaceport U.S.A., KSC's visitors information center.

The primary purpose of the tracking station is to provide air-to-ground voice and data communication for launch and landing of the space shuttle. The station is also responsible for the tracking of earth orbiting space science satellites.

The fixed-price contract, one set aside for award to a small business, requires Holloway to complete all work within 180 days after notice to proceed.

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May 22, 1987

1F. 6 #24

NASA News

National Aeronautics and
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For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO. 58-87

VERO BEACH COMPANY WINS PAVING CONTRACT AT KSC

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $353,616 contract to Dennis L. Smith, Inc., a small business firm in Vero Beach, Fla., to repair a 7.5 mile section of westbound lanes on NASA Causeway, starting at the Kennedy Parkway (State Road 3) and extending to Gate #3 near U. S. Highway 1.

Work being performed by the contractor includes surface preparation of the existing road, applying a bituminous tack coat, leveling course, and a one-inch uniform surface course of asphaltic concrete. The contract also includes the painting of traffic stripes.

The fixed-price contract requires Smith, Inc. to complete all work within 90 days after notice to proceed.

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May 22, 1987

M. Konjevich
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IF 6 #24

NASA News

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AC 305 867-2468

For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO. 63-87

COSTELLO CONSTRUCTION COMPANY WINS NASA CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $183,000 contract to Costello Construction Company, Merritt Island, Fla., to install new gaskets on approximately 300 windows overlooking the firing rooms at the Launch Control Center, Complex 39.

The work being performed by the contractor includes removing the four by five foot, three-quarter inch thick laminated glass windows, replacing the gaskets, and reinstalling the windows. The contract also provides for the replacement of any broken windows.

The Launch Control Center, a four-story structure located on the southeast side of the Vehicle Assembly Building, is where the space shuttle checkout, countdown and launch operations are conducted.

The fixed-price contract, one set aside for award to a small business, requires Costello to complete all work within 150 days after notice to proceed.

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May 29, 1987

M. Konjevich
SI-SRV-1

IF.6 #74

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
305-867-2468

KSC Release No. 64-87

MAY WAS NINTH STRAIGHT RECORD-BREAKING MONTH AT SPACEPORT USA

KENNEDY SPACE CENTER, FLA. -- Attendance at Spaceport USA, the Kennedy Space Center's visitors complex, soared to a record high in May when an estimated 176,000 people visited America's spaceport.

The May attendance figure marks the ninth consecutive month that monthly visitor records have been shattered and the eleventh 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 May was in 1986 when about 141,000 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.

# # # # #

June 1, 1987

M. Konjevich
SI-SRV-1

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NASA News

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

For Release:

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Immediate

KSC RELEASE NO. 65-87

NASA AWARDS CONTRACT FOR MUSCLE FUNCTION TESTING MACHINE

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $37,100 contract to Chattecx Corporation, Chattanooga, Tenn., for a muscle function testing machine. The machine will be used by KSC's Biomedical Operations and Research Office in conducting ground-base studies on the prevention of muscle deterioration during prolonged weightlessness.

The hydraulically driven instrument, which is programmed from an IBM computer, has the capability to test, measure and exercise all of the major muscle groups and provide subjects with instant biofeedback during the training and testing.

The instrument has been shipped to the Ames Research Center, Moffett Field, Calif., to support a muscle function study in which KSC is participating, and will arrive here sometime in September.

The machine, which was built for rehabilitation, as well as muscle research, meets NASA's requirements for learning more about muscle deterioration in connection with extended space flights.

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June 8, 1987

M. Konjevich
SI-SRV-1

NASA News

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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. 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.

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July 1, 1987

M. Konjevich
SI-SRV-1

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NASA News

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

Lisa Malone
(305) 867-2468

July 17, 1987

KSC Release No. 69-87

REYES AND LANG PROMOTED AS CO-DIRECTORS IN KSC SAFETY OFFICE

KENNEDY SPACE CENTER, Fla. -- Two veteran KSC employees have been promoted as co-directors in KSC's Safety Reliability and Quality Assurance Office which is headed by James A. "Gene" Thomas.

Raul E. "Ernie" Reyes is designated director, Quality Assurance, and John R. "Bob" Lang is designated director, Safety and Reliability.

Reyes is overseeing the Quality Engineering Office and three divisions: Shuttle Quality Assurance Division, Payload Quality Assurance Division, and Support Quality Assurance Division. In this position, Reyes is responsible for the management and direction of KSC's quality assurance program including quality engineering, inspection, technical guidance and direction to on-site KSC contractors, and off-site quality assurance support at vendor sources and development test facilities.

Reyes said, "This position offers a lot of challenges and I am looking forward to working the opportunities to ensure that KSC's activities are of the highest caliber and quality and the best that can be done."

Lang is also responsible for three divisions: Safety Operations Division, Systems Performance and Trend Analysis Division, and Safety and Reliability Engineering Division. He is responsible for the management and direction of the safety and reliability programs at KSC including safety and reliability engineering, inspection, technical guidance and direction to on-site KSC contractors and evaluation of contractor performance.

Lang said, "Safe and reliable operations at KSC, and particularly in Shuttle processing, are important tasks, especially as we work toward resuming flight. It's quite a responsibility, and I'm excited about it."

"I am pleased to have Ernie and Bob join me in the SR&QA

-more-

Directorate. They both have the experience needed, have demonstrated responsibility and initiative, and possess unique qualities that I think will enhance the SR&QA tasks," said Thomas.

Reyes received a bachelor of science degree in mechanical engineering in 1960 from New Mexico State University, University Park, N.M., and took graduate courses in nuclear engineering at Ohio State University, Columbus, Ohio, from 1961-1962.

Reyes began his federal career in 1960 as a mechanical engineer with the U.S. Air Force at Wright-Patterson AFB, Ohio. He joined NASA's Apollo Spacecraft Project Office two years later, working as an aerospace engineer for flight systems in Houston and then later at White Sands, N.M., prior to transferring to the Kennedy Space Center in 1964.

In 1969, he became chief, Preflight Operations Branch at KSC working on the Lunar Module, the Command/Service Module and the Lunar Rover Vehicle in the Apollo Program.

In 1977, he was made chief, Payloads Processing Branch, responsible for processing Spacelab and other payloads for the Space Shuttle. During the Shuttle era, Reyes has progressed through successively more responsible management positions in the Payload Management and Operations Directorate, including assignments at the division chief level in Upper Stages Processing and Integration, Multi-Mission/Vertical Payloads and Vertical Processing.

From 1984-86, Reyes served as chairman of the Center's Equal Opportunity Action Committee. He served as the deputy director of STS Payload Operations prior to his new assignment.

In designating Reyes to his new position, Center Director Forrest McCartney said, "He has built a solid reputation throughout the aerospace community for his proficiency in operational activities and engineering procedures requiring a thorough understanding and practical application of quality assurance principles and techniques."

Reyes and his wife, Ida, and daughters, Maria and Ana, live in Titusville.

Lang received his associate's degree in 1962 from Orlando Junior College. He received a bachelor of science degree in mechanical engineering in 1967 from Marshall University in Huntington, W.Va. In 1974, Lang received a master's degree in systems management from the Florida Institute of Technology in Melbourne.

Lang joined KSC in 1967 as a systems engineer working on Apollo environmental control system ground support equipment and Apollo spacecraft.

McCartney said, "In his management of hazardous operations, Bob has resolved safety engineering, as well as reliability issues."

Between 1970-77, he served first as the lead engineer responsible for preflight checkout and launch operations associated with the environmental control and life support system and, then for test and checkout of the Space Shuttle's External Tank.

Lang has served as chief at the section and branch levels on both hypergolics and hydraulics systems. Since 1985, he has been chief, Mechanical Systems Division in charge of the engineering branches responsible for the Orbiter, Solid Rocket Boosters and External Tank mechanical and structural systems and associated ground support equipment.

Lang and his wife Theresa, and their children, Scott, Jeff and Wendy, live on Merritt Island.

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M. Konjevich
~~SI-SRV-1~~

SI-SAT-5

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NASA News

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Mitch Varnes
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For Release:
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KSC Release No. 76-87

NASA TO OPEN ART GALLERY AT SPACEPORT USA ON AUGUST 2

KENNEDY SPACE CENTER, FLA. -- More than 150 choice pieces of NASA-commissioned art will go on permanent public display when a newly completed art gallery opens at Spaceport USA, the Kennedy Space Center's visitors complex, on August 2. The unveiling of the world's largest collection of space art coincides with the 20th anniversary of KSC's visitors center, which opened to the public in August 1967.

"The Artist and the Space Shuttle" and other selected works from the NASA art collection will be exhibited in a contemporary two-story gallery located in the east wing of the Galaxy Center.

"The Artist and the Space Shuttle" is an exhibit comprised of a variety of art media, including sculptures and other three-dimensional art forms. The exhibit includes over 70 pieces of art, representing the works of more than 50 of the nation's leading artists. Lamar Dodd, Bob McCall, Andreas Nottebohm and Robert Rauschenberg are a few of the artists who have works in the "Artist and the Space Shuttle."

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

The exhibit depicts all facets of the Space Transportation System, and is an extension of the NASA art program that began in 1962. The program is directed by Robert Schulman, NASA's chief of special services.

Art of some form has always been on display at Spaceport USA, but only now is it all being brought to one area where it can be enjoyed by the public. "Art has been a longtime favorite with visitors to Spaceport USA," said KSC exhibits coordinator Larry Mauk. "The addition of the art gallery will enable us to display 'The Artist and the Space Shuttle' and other pieces in a more effective manner."

Spaceport USA's art gallery was designed by Stottler Stagg & Associates Architects, Engineers, Planners, Inc. of Cape Canaveral. It was built by Frank Kennedy Construction, Inc. of Cape Canaveral. The art display cases were fabricated by Design Concepts Associates of Belleview, Fla. Contracts for construction and design of the art gallery were initiated and managed by TW Recreational Services, Inc., a private firm which operates Spaceport USA under a concession agreement with NASA. TW Recreational Services, Inc. has been the sole concessioned operator of Spaceport USA since its inception.

Spaceport USA is Florida's fourth most popular tourist attraction and draws more than two million visitors annually. 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.

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July 17, 1987

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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:

Diana Boles
305-867-2468

Immediate

KSC RELEASE NO. 77-87

COCOA COMPANY WINS CONTRACT FOR COOLING TOWER AT KSC

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $173,900 contract to Precision Mechanical, Inc., Cocoa, Fla., to construct a 400-ton capacity cooling tower for use at the Vertical Processing Facility (VPF).

The VPF, located in KSC's industrial area, is where final integration and testing of vertical payloads for space flight occurs. Operations in the facility are conducted under environmentally controlled conditions.

The work to be performed by the contractor consists of constructing a new two-cell cooling tower with PVC fill, and removing a single-cell wooden cooling tower, foundation and associated piping.

The fixed-price contract, one reserved for award to a small business, requires Precision Mechanical to complete all work within 140 days after notice to proceed.

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July 17, 1987

M. Konjevich
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SI-SAT-5

IF-6 ✓
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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: IMMEDIATE

Mitch Varnes
KSC Release No. 79-87

NOTE TO EDITORS/NEWS DIRECTORS

NASA TO HOST PRESS SHOWING OF ART GALLERY

A press briefing and showing of the NASA art gallery and its unique collection of space art will be held at 11 a.m. on Friday, July 31.

NASA Art Program Director Robert Schulman will be on hand to brief the media and answer questions. A small number of artists are also expected to be in attendance for the press briefing.

Media wishing to attend should be at Spaceport USA's information counter by 10:45 a.m. The information counter is located inside the Spaceport Central building.

Spaceport USA is located on the NASA Causeway and is accessible from Florida Route 3 on Merritt Island and U.S. Route 1, two miles south of Titusville. It is outside of the security area, and press credentials are not required.

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July 17, 1987

IF.6 4/4

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:
Immediate

Contact: Pat Phillips
(305) 867-2468

KSC Release No. 78-87

REYES APPOINTED TO NATIONAL EQUAL OPPORTUNITY TASK FORCE

KENNEDY SPACE CENTER, Fla. -- Raul E. "Ernie" Reyes, director of NASA Quality Assurance at KSC, is one of four NASA employees appointed by NASA Administrator Dr. James C. Fletcher to a select, national-level Task Force on Women, Minorities, and the Handicapped in Science and Technology. Reyes, who joined NASA in 1962, has previously been active in equal opportunity efforts, serving as chairman of the KSC Equal Opportunity Action Commmittee from 1984 to 1986.

Reyes will participate in two years of voluntary task force work, including an upcoming series of public hearings in key cities across the country. The other NASA appointees include Dr. Frank B. McDonald, chief scientist, Washington, D.C.; Dr. Harriet G. Jenkins, assistant administrator, Equal Opportunity Programs, Washington, D.C.; and Dr. James A. Biaglow, project engineer, Advanced Planning and Analysis Office, Unconventional System Branch, Lewis Research Center, Cleveland, Ohio.

Underscoring the task force's emphasis on education is the selection of Barbara Morgan, now prime candidate for a Teacher in Space mission. Mrs. Morgan will join other key educators serving on the special commission.

President Reagan formed the task force in response to studies that predicted a serious shortfall in engineering and scientific degrees in coming years. Statistics also show a low level of participation in those fields by women, minorities, and the handicapped.

Reyes cited a National Science Foundation report that estimated that the number of young people attracted to engineering or scientific fields may have to increase by as much as 50 percent just to maintain the current support base.

"There's a valid concern about the future technological productivity of our nation, " Reyes said. He explained that the "pipeline," the educational process that produces the future leaders in technology, is "drying up."

(more)

However, a large segment of the population remains untapped for these vital jobs. Reyes said that women constitute only 14 percent of the scientific/engineering workforce, while less than two percent of minorities enter these fields.

"We need to find out what affects the participation of these under-represented resources--women, minority, the disabled--and recommend ways to attract them. The United States needs all her resources," Reyes said.

Reyes plans to involve KSC employees by soliciting written comments. He also will work with equal opportunity groups. Local inputs, he believes, will give KSC an active voice in the task force deliberations, and will also aid the research effort.

The task force will report its findings and recommendations to President Reagan, the Congress, and heads of key federal agencies in 1989. Dr. William Graham, Director of the Office of Science and Technology Policy, will oversee the group. Co-chairmen are Dr. Ann Reynolds, chancellor of the California State University System, and Jaime Oaxaca, president of Wilcox Electric.

A career engineer, Reyes aptly summarized the Task Force goals: "We're going to try to identify problems and suggest fixes."

Reyes and his wife, Ida, and their daughters Maria, Anna, and Patricia live in Titusville.

July 20, 1987

M. Konjevich
~~SI-SRV-1~~
SI-SAT-5

NASA News

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

Dick Young
Area Code 305/867-2468

For Release:
July 24, 1987

KSC NEWS RELEASE NO. 80 - 87

FEDERALLY-OWNED BEACHES PROVIDE SAFE HAVENS FOR NESTING TURTLES

KENNEDY SPACE CENTER, Fla. - Florida beaches are becoming increasingly urbanized and lined with high-rise condominiums, apartments and hotels. The federally-owned coastal strand stretching north from Cape Canaveral Air Force Station to just south of New Smyrna Beach is becoming ever more important as a safe haven for nesting sea turtles.

In 1986, more than 6,000 loggerhead and green sea turtle nests were deposited on the 43-mile-long stretch of undeveloped beaches owned by the federal government. These account for approximately 10 to 15 percent of all nests of these two species in the southeastern U. S. Approximately 55 percent of the nests hatched successfully, a dramatic increase compared with two to three years ago when at least 85 to 90 percent were lost to predators, now increasingly being brought under control.

The gains made last year are continuing during the current nesting season. And while the number of nesting "crawls" is down this year - a cyclical thing - the survival rates are increasing.

The federally-owned coastal areas include 24 miles of National Park Service and NASA-owned beaches operated as the Canaveral National Seashore extending south from near New Smyrna Beach to Playalinda Beach, just north of Space Shuttle Launch Complex 39. An additional six miles of NASA-owned beach extending from the Space Shuttle launch pads south to the northern boundary of Cape Canaveral Air Force Station are controlled by the U. S. Fish & Wildlife Service as part of the Merritt Island National Wildlife Refuge. The stretch of undeveloped dunes is anchored on the south end by the 13.5 miles of beach at Cape Canaveral Air Force Station.

Marine turtles are magnificently efficient creations for life in the world's seas. Strong swimmers with streamlined body shapes capable of "flying" through the water, they are protected from predators at sea by their hard shells and huge size. They are air breathers but they have the ability to dive and stay under water for extended periods. The giant reptiles can live in salt water without having to drink fresh water.

- more -

Standard equipment includes precise guidance systems which enable them to navigate the trackless seas unerringly and make their ways back to the beaches where they - as hatchlings - first entered the water.

The loggerhead, classed as a threatened species, has a shell length averaging 36 inches and weights range from 150 to 400 pounds. It is the most common sea turtle encountered in the southeastern United States. It is frequently observed around wrecks, underwater structures and reefs where it forages on crabs, mollusks and sponges.

The future of the green turtle - an endangered species - may be somewhat more precarious. It has been exploited for its eggs, meat, oil, leather and shells in the Western Hemisphere since Europeans began their exploration and conquest of the New World beginning in the early 1500s. Adult shell length ranges from 36 to 48 inches and weights average 300 pounds or more. Green turtles are unique among sea turtles in being plant eaters; they graze in the vast beds of seagrasses in tropical waters.

It is during the reproduction period when female turtles leave the water and lumber onto the beaches to lay large clutches of eggs the size of ping pong balls in buried nests that the reptiles are at the most vulnerable point in their life cycles. On unprotected beaches, the turtles, the eggs and the hatchlings are subject to human and animal predation. And on developed beaches, background lighting from human activities may confuse the tiny hatchlings as they emerge from the nest, causing them to crawl into harm's way rather than into the protection of the sea where they will spend their lives.

The nesting season typically begins in May and extends through September. The average number of eggs per nest exceeds 100 and the incubation period is approximately two months. According to Stephen R. Vehrs, refuge manager, the hatching of eggs deposited early in this year's nesting season has already begun. But the nesting process is not without danger even on beaches protected against human interference; raccoons, wild hogs and other wild creatures look upon turtle eggs as gourmet fare and dig into nests with gusto.

"Nest predation on Kennedy Space Center beaches is the lowest in the world," said Vehrs. "We control their major predators - raccoons and wild hogs - and egg loss is kept very low."

According to Vehrs, there were 1,262 loggerhead nests - the highest ever recorded - deposited on his agency's six-mile stretch of beach in 1986. Of those, 1,136 hatched successfully

and hatching failed in 83. Five were dug out by raccoons (.4 of a percent) and 38 (three percent) were lost to wild hogs. Vehrs attributed the low nest loss to the trapping and removal of predators from the beach nesting areas. Prior to initiating predator control, nest loss had run as high as 63 percent.

The heavily-developed coastal communities to the south of the aerospace complex have enacted ordinances controlling night-lighting on beaches during the turtle nesting season. Light impingement on the beaches discourages nesting crawls and also causes the hatchlings to become disoriented and confused during their scramble from the nest to the sea. They become the victims of natural predators, dehydration from the sun or automobiles on nearby highways.

"We recognized this as a problem early," said Vehrs, "and were the first to raise the issue." There are very few lights the refuge-controlled NASA beaches and those have reflectors to preclude their shining on the dunes. The general character of the coastal region at night is "as black as the inside of a mitten."

During 1986, nearly 3,400 nests were deposited on the northern 24 miles of dunes between Playalinda Beach and New Smyrna Beach operated by the Park Service. These included 22 green turtle and three leatherback (rare on KSC beaches, the leatherbacks are the giants among sea turtles and can weigh up to three-quarters of a ton) nests. The rest were deposited by loggerheads.

About 45 percent of the nests were covered by Park Service rangers with four by four foot heavy-gauge screens to control raccoon predation. Ninety five percent of these nests hatched successfully. Of the unscreened nests, only five percent escaped raids by raccoons. Overall nesting success was approximately 46 percent, a drastic improvement over previous years when 80 to 95 percent were lost.

"The number of nesting crawls is down but we expect the percentage of nests saved to go up," said Arthur F. Graham, Canaveral Seashore superintendent. Park rangers now screen the new nests beginning at midnight, rather than 3 a.m. as in 1986, to head off raccoon raids. Some 800 nests have already been screened and Graham predicted that the survival rate will increase to about 65 percent. The number of hatchlings should equal the 145,000 estimated for 1986 despite the decline in turtle nesting activity.

The 1,453 nests deposited on the beaches at Cape Canaveral Air Force Station in 1986 included 10 by green turtles and one by

a leatherback; the remainder were loggerheads. The raccoon trapping in the spring increased nesting success but wild hog raids became a serious problem beginning in mid-June and 646 nests were lost to hogs. Despite the heavy losses, success doubled over that of 1985 to about 38 percent.

As on the remainder of the federal beaches, nesting activity this year is running somewhat below that of 1986 - a record year - but losses are being kept low.

According to Don George, an environmental engineer with Pan American Services charged with overseeing turtle nesting activities on the Air Force Station, removal of raccoons and wild hogs from the beach areas has had significant results.

"We have not lost a single nest to hogs," said George, "and the loss to raccoons is running at about five percent. It's taken a lot of effort and coordination over the past five years to reduce nest loss from almost 100 percent to that low level."

The Cape Canaveral area is more densely built-up than the NASA/Park Service-owned beaches to the north and remedial measures have been taken to prevent light impingement on nesting areas.

The barrier beaches were originally acquired to support the nation's space program. Their ages-old function of launching new generations of the giant turtles which roam the world's seas has been preserved and enhanced.

# # # # #

NOTE TO EDITORS:

Black and white photographs with which to illustrate this story may be obtained by calling the KSC News Room at Area Code 305/867-2468.

NASA News

National Aeronautics and
Space Administration

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

For Release:

July 27, 1987

George H. Diller
Kennedy Space Center
305/867-2468

Release No. 71-87

ROCKET TRIGGERED LIGHTNING PROGRAM RESEARCH ENTERS FIFTH SUMMER

KENNEDY SPACE CENTER, Fla. - The NASA-sponsored Rocket Triggered Lightning Program (RTLP) which operates during the mid-summer months enters its fifth year in 1987.

A space age, high-tech version of Ben Franklin's key on a kite string, the program entails launching three-foot-tall solid fueled rockets into a thunderstorm to an altitude of one kilometer, trailing a wire to ground. Data are collected by lightning investigators at the launch control site and at near-by field locations. There is a capability to launch up to a dozen rockets in a single thunderstorm, depending on the storm's lightning potential.

The principal investigators began installing instrumentation at KSC on July 1 for the summer program, which lasts through September. The launch site is located on the shore of Mosquito Lagoon, about eight miles north of the Vehicle Assembly Building on Complex 39.

This lightning research program was predicated upon NASA's desire to improve lightning protection systems for KSC facilities and space launch vehicles. This objective continues with an additional goal of improving lightning forecasting. Because the nature of this research has a broad range of applications, other federal agencies, leading universities, the private sector, and even other nations are encouraged to participate.

The program has gathered considerable momentum since its inception in Florida in 1983. There are 30 investigators from 12 organizations participating in the 1987 program.

In addition to NASA-KSC, the leading institutions participating this year include the Naval Research Laboratory, the Goddard Spaceflight Center, Florida Power & Light Company, Florida Power Corporation, Colorado Science Corporation, the University of Florida, the University of Arizona, the State University of New York at Albany, the University of Southern California at San Diego, and the University of San Juan in Puerto Rico.

Also, a government-sponsored research group from France will again participate. The French organization CENG (Centre Etudes Nucleaires de Grenoble) has had an ongoing involvement in the program and along with the United States pioneered the first rocket triggered lightning research.

The participants collaborating in the program change from year to year because the objective of each organization usually differs, predicated on distinct areas of direct application.

Eventual civil applications may include earlier and more precise lightning warnings, lightning avoidance by aircraft, and the development of lightning protection systems that would preclude power outages and loss of communications.

This year NASA continues to collect data for evaluating the effectiveness of lightning protection systems used on facilities at the Kennedy Space Center. In addition, a data base is being established to better understand the climatology of the Cape Canaveral area so that more precise weather forecasts can be developed.

There are three objectives for the 1987 program. The first objective is being closely coordinated with the French. Their investigations focus on establishing a data base for determining the probability of a lightning strike to objects on land, on water, and in the air. For the last two years data have been collected at the land-based launch site on the shore of Mosquito Lagoon adjacent to NASA's Atmospheric Science Field Laboratory.

To further support this research, a second raft-like launch pad 12 by 12 feet has been constructed 100 feet offshore, connected with the launch control and instrumentation facility by fiber optics and pneumatics. It is believed that a lightning strike with a more "pure" electrical signature can be generated from a launch over water which will be more characteristic of natural lightning. It is believed that there will be an advantage to analyzing lightning when it is not subject to electrical current distortions that can result from the earth or the presence of pad-associated ground support equipment.

The second objective of the 1987 program involves testing the latest protective devices for electric company power lines under fully energized conditions.

The Electric Power Research Institute will test the effectiveness of lightning current recorders for Florida Power Corporation. These recorders will measure the lightning current wave form with its associated effect throughout the FPC power distribution system. In addition, the effectiveness of protective devices for Florida Power & Light Company will be assessed in real conditions installed on a dedicated normally powered line and subjected to the lightning environment.

Further research is being done this summer to develop lightning location and detection systems.

In 1986, the French research group ONERA (Office National d'Etudes et de Recherches Aerospatiales) completed the first phase of development on the interferometer which measures the growing potential for cloud-to-cloud and cloud-to-ground lightning. By detecting the initial process by which a cloud develops a charge, the device is anticipated to provide forecasters with advance notice as to where and when lightning will occur. Next year the French will also attempt to understand the actual initiation process.

Further research is being done by NASA and the University of Florida this summer to develop a similar lightning location and detection system using an alternative approach termed "time of arrival." Fields of electromagnetic radiation in the 50 to 250 megaHertz region are measured in combination with electric field sensors that will detect currents in that electric field. Like the interferometer, the goal is to gather information which may help determine pre-initiation of cloud-to-cloud and cloud-to-ground lightning approximately 20 minutes in advance of the event.

The University of Arizona research has a similar objective but takes an alternative approach, attempting to measure an air-to-ground current. A sensor buried in the earth detects a ground current which is correlated with the measured negative potential between ground and cloud. The purpose is to locate the generating source of currents in the cloud that are associated with specific cloud development. This creates a tool for mapping lightning within clouds. Potentially, such a system could provide advance notice of the occurance of lightning. Also, aircraft may be able to use such mapping to avoid charged clouds.

University of Arizona researchers are also taping the sound of thunder at various distances from the launch site, hoping to learn how thunder is produced, and how the sound characteristics of thunder change with distance from the lightning.

Three dimensional photographs of the lightning strikes will be correlated with the recorded sound patterns.

The State University of New York at Albany and the University of Arizona are studying the optical properties of lightning. They are analyzing the physics and detailed characteristics of a return lightning stroke, and the return stroke velocity. Using high speed photography and video equipment a three dimensional image of cloud-to-ground lightning can be generated illustrating the visual characteristics of lightning.

The optical equipment can distinguish where the lightning strikes, and by photographic analysis quantify the type and magnitude of the strike. This provides accurate data on which to judge the accuracy and reliability of other lightning instrumentation. Further, this will assist NASA in the field of planetary meteorology, assisting in understanding the lightning processes on other planets.

NASA's Goddard Space Flight Center, the Naval Research Laboratory, and also the University of Arizona are studying the electromagnetic radiation of lightning events. The objective is to seek remote methods of determining lightning current characteristics using radio signals which are generated by lightning current. This radio signal is sometimes called the electromagnetic pulse, or EMP.

The field mill system at KSC, used to detect and locate lightning, will be providing data as a part of most experiments in the program this summer.

As in the past, field mills will be used to study the electric field environment in situations where lightning is being triggered. This will provide a more complete picture of weather conditions conducive to triggering lightning, and will provide data which can assist in developing guidelines that can be extended to larger launch vehicles.

With the gathering at KSC of principal lightning investigators, a third objective of the 1987 program is to plan for the 1988 program. Next year, a third launch site will be constructed. This will achieve the goal of measuring lightning from instrumentation contained in a canister and suspended from a balloon 500 feet in the air. The U.S. Air Force Wright Patterson Aeronautical Laboratory is also represented at KSC this summer to plan for next year's program, along with both French lightning groups - ONERA and CENG.

This approach probably comes closest to recreating Ben Franklin's original experiment using "high-tech" methods. Hopefully it will lead to discoveries as significant as Franklin's original studies. The goal is to measure the lightning pre-attachment characteristics to the canister and also to determine the distance lightning will travel to a near-by object during a strike. This data may have a significant application for the safety of aerospace vehicles during flight in the troposphere.

A separate program, but one that provides direct support to the Rocket Triggered Lightning Program research during the summer months, is a NASA-KSC sponsored study which collaborates with the National Oceanic and Atmospheric Administration, or NOAA.

The program is called Total Area Divergence. This study focuses on measuring the pattern of the wind slightly above ground level. When a pattern of converging wind flows is identifed, the probability of a thunderstorm is increased. The program objective is to define the wind conditions that will predict when and where a thunderstorm will develop, ultimately from 30 minutes to two hours in advance.

To assist in this research is the meso-network, a system of 50-foot wind towers instrumented with anemometers at various levels. The size of the meso-network in the Cape Canaveral area has been doubled in the past year to 50 towers, and the radius has been extended to 15 miles, reaching as far inland as the St. Johns River. Establishing the complete field of meso-network anemometers has been a collaborative effort between NASA, NOAA, and the Air Force.

The Technology Utilization Office of NASA is supporting the Rocket Triggered Lightning Program by attempting to transfer technology generated by the program to private industry, other federal agencies, and the general public. In addition NASA is promoting the attributes of the Cape Canaveral area for lightning research, hoping to demonstrate the feasibility of establishing a permanent atmospheric science research laboratory at the Kennedy Space Center, attracting other private sector participants.

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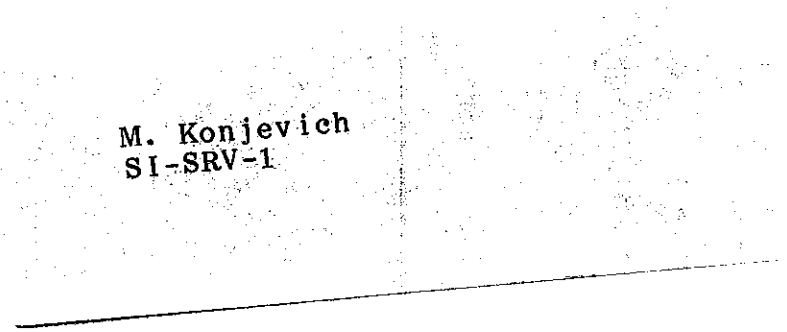
M. Konjevich
SI-SRV-1

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:

Diana Boles
(305) 867-2468

Immediate

VIC LANE CONSTRUCTION, INC. WINS NASA CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $342,345 contract to Vic Lane Construction, Inc., Merritt Island, Fla., to provide four 350-horsepower air compressors for use at the Complex 39 Utility Annex.

The two existing compressors will be disassembled and replaced with four smaller units of equal capacity, allowing more latitude for interchange during maintenance.

The Annex, located adjacent to the Vehicle Assembly Building (VAB), supplies compressed air to the VAB, Orbiting Processing Facility (OPF), Launch Control Center (LCC), and other major facilities at Complex 39. In addition, the Annex supplies air-conditioning and hot water, for both heating and domestic use.

The fixed-priced contract, one set aside for award to a small business, requires the contractor to complete all work within 280 days after notice to proceed.

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July 28, 1987

JF.6 #14

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:
IMMEDIATE

Mitch Varnes
Area Code 305-867-2363

KSC Release No. 81-87

NOTE TO EDITORS/NEWS DIRECTORS

MEDIA INVITED TO COVER OPENING OF NASA ART GALLERY

KENNEDY SPACE CENTER, FLA. -- Members of the press are invited to attend a private ceremony commemorating the 20th anniversary of Spaceport USA, the Kennedy Space Center's visitors complex, and the opening of NASA's first permanent art gallery. The event will be held at 6 p.m. on Saturday, Aug. 1.

Former Apollo and Skylab astronaut Alan Bean will be the ceremony's keynote speaker. Other dignitaries scheduled to speak include U.S. Congressman Bill Nelson, National Gallery of Art 20th-Century-Art Curator Jack Cowart and Trans World Recreational Services, Inc. President George Toney. Kennedy Space Center Director Forrest McCartney will serve as the master of ceremonies.

Media wishing to attend should be at Spaceport USA's information counter by 5:30 p.m. The information counter is located inside the Spaceport Central building.

Spaceport USA is located on the NASA Causeway and is accessible from Florida Route 3 on Merritt Island and U.S. Route 1, two miles south of Titusville. It is outside of the security area, and press credentials are not required.

# # # # #

July 28, 1987

Harriett Brown
SI-SAT-5

1F.6 H4

NASA News

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For Release:
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Dick Young
Area Code 305/867-2468

KSC RELEASE NO. 84 - 87

NOTICE TO EDITORS/NEWS DIRECTORS

PRESS BRIEFING ON DISCOVERY PROCESSING STATUS SET FOR AUG. 3

KENNEDY SPACE CENTER, Fla. - A press briefing on the processing of Discovery for the STS-26 mission targeted for launch in June 1988 will be held at the KSC News Center at 10:30 a.m. EDT on Monday, Aug. 3.

The briefing is keyed to the "powering-up" of Discovery - scheduled for the week of Aug. 3 - to begin the testing of modified systems and prepare for the launch processing flow to begin in September.

The briefers will be Robert B. Sieck, KSC launch director; John J. Talone, Discovery flow director, and John A. Hallmark, Discovery lead project engineer.

There will be a two-way question and answer capability for media representatives covering from NASA Headquarters and other NASA centers.

The briefing will be broadcast on NASA Select TV, carried on RCA Satcom F2R, transponder 13 (located at 72 degrees west longitude). It may also be monitored by calling KSC's V-2 circuit at Area Code 305/867-1220, 1240 or 1260. The latter is an automatic system and there will be a brief delay before callers are connected with the circuit.

News media representatives lacking the permanent credentials to cover the briefing from the KSC Press Site should call Area Code 305/867-2468 to make access arrangements.

# # # # #

July 30, 1987

Harriett Brown
SI-SAT-5

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:

Diana Boles
305-867-2468

Immediate

KSC RELEASE NO. 83-87

EBON RESEARCH SYSTEMS WINS CONTRACT FROM NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded EBON Research Systems, a small business in Altamonte Springs, Fla., a $199,977 contract to generate a database and drawing digitization system. The new system will replace engineering drawings that contain specifications required for buying various components used on shuttle ground support equipment.

Each line and point on the two-dimensional flat drawings will be digitized into computer language, given a file number and stored in the computer memory for easy reference. About 4,000 sheets of component specification drawings will be involved in this process.

The database will design the characteristics of the components to permit easy sorting by picking out a single characteristic.

The basic contract, which covers the period from July 1-Dec. 31, 1987, contains four one-year option periods that would make the total value of the award worth $1,216,217.

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July 30, 1987

Harriett Brown
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1F.6 HL4

NASA News

National Aeronautics and
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For Release:
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KSC Release No. 85-87

SPACEPORT USA HAS BUSIEST MONTH IN HISTORY

KENNEDY SPACE CENTER, FLA. -- Monthly attendance at Spaceport USA, the Kennedy Space Center's visitors complex, reached an all-time high in July when about 302,000 people visited America's Spaceport.

The July attendance figure is the highest single monthly mark recorded at Spaceport USA since public tours of America's Spaceport began in 1966. The previous monthly attendance record was set in July 1986 when an estimated 260,000 people visited the space center.

July's record-breaking attendance extends Spaceport USA's string of all-time individual monthly highs to 10 consecutive months.

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 eight months of 1987 now stands at about 1.6 million, which is about 12 percent higher than the same period in 1986 when approximately 1.4 million people 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.

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Aug. 4, 1987

Harriett Brown
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IF.6 #24 ✓

NASA News

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AC 305 867-2468

For Release:
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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

Harriett Brown
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IF.6 #2

NASA News

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

Mitch Varnes
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For Release:
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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.

# # # # #

Sept. 1, 1987

IF. 6 #4

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:

Sept. 10, 1987

Bruce Buckingham
(305) 867-2468

KSC Release No. 99-87

1987 KSC INDUSTRY BRIEFING SCHEDULED FOR SEPT. 22

KENNEDY SPACE CENTER, Fla., -- Preparations are being made for the fifth annual NASA Industry Briefing to be held Sept. 22 at Spaceport U.S.A.'s Galaxy Theater.

Representatives from Kennedy Space Center, Eastern Space and Missile Command/Patrick Air Force Base and prime contractors will brief industry members and other interested attendees on opportunities for doing business with the government through fiscal year 1988.

This is an opportunity for businesses of all sizes to come see government agencies and large aerospace contractors lay out their shopping lists during the one-day briefing. Interested companies and individuals are invited to come discover what contractual work will be taking place over the next couple of years.

Presentations at the briefing will be made by NASA Security, Engineering and Development, Biomedical, Advanced Projects Office, PAFB Procurement Office, EG&G, McDonnell Douglas, Lockheed, and USBI.

During the next fiscal year, NASA and Patrick AFB are preparing to spend over one billion dollars. NASA/KSC alone spent $70 million on new awards last year and prime contractors awarded another $167 million.

Admission to the briefing is free. The morning session is scheduled to last from 9 a.m. - 12 noon and the afternoon session from 1 p.m. - 4:30 p.m.

Over 450 individuals from companies in the U.S. and Canada attended the briefing last year.

Seating is limited to 500 and a full house is expected this year. Those interested in attending should write the NASA/KSC, Industry Assistance Office, Mail Code SI-PRO-4, KSC, Fla., 32899, or call (305) 867-7353 by close of business Monday, Sept. 21, 1987.

News media representatives wishing to cover the event should make arrangements by calling the KSC News Center at (305) 867-2468.

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Harriett Brown
SI-SAT-5

NASA News

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For Release:

Lisa Malone
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IMMEDIATE

KSC Release No. 98-87

KSC LIFE SCIENTISTS EXAMINE WAYS TO KEEP ASTRONAUTS FIT ON LONG SPACE MISSIONS

KENNEDY SPACE CENTER, Fla. -- While space agency managers are planning America's future in space, NASA's space life scientists are studying ways to keep astronauts healthy and fit during long-duration missions.

Because moving around in zero-gravity doesn't require as much exertion as it does on Earth, research indicates the lack of gravity can adversely affect muscle strength, particularly in the lower body. Because of long-duration space missions now being planned for the Space Station, and considerations of a lunar base and a mission to Mars, life scientists are eager to try to solve some of these problems on Earth.

One of their goals is to prevent or reduce the loss of muscle tissue or muscle atrophy, explained Dr. Paul Buchanan, director of KSC's Biomedical Office. Buchanan and Dr. Victor Convertino of The Bionetics Corp., a KSC contractor, are two of the principal investigators of a just completed bed-rest study at NASA's Ames Research Center in Mountain View, Calif. One of the objectives of the study was to find ways to prevent muscles from wasting away in zero-gravity. Preventing severe muscle atrophy would help alleviate a need for a rehabilitation period after long stays in space.

One possibility involves electrical stimulation of the muscles through surface electrodes, or electromyostimulation (EMS). EMS was effectively used during the bed-rest study which began in June and ended last month.

The bed-rest study is one of a series of studies being conducted by Buchanan and Convertino's group in hopes of understanding the loss of muscle strength that occurs in space and how to overcome it. "We know very little about the atrophy of

-more -

muscles in space. We know that it occurs, but we have a scant understanding of what happens at the cellular and biochemical levels," said Buchanan.

Research indicates that two and a half hours of conventional type exercising in microgravity daily did not entirely protect the Skylab astronauts nor has it apparently helped the Soviet cosmonauts aboard the Space Station Mir.

That two and a half hours astronauts might spend exercising in space amounts to a large and expensive chunk of otherwise productive time. "If we can devise a way to prevent muscle atrophy in space without imposing on the crew's time, then we will have accomplished a major part of our goal," Buchanan said.

Muscle atrophy probably doesn't hinder performance in space, but when astronauts return to Earth after a month or more in microgravity, the loss of muscle mass occurring in the lower extremities -- the calves, buttocks and the lower back muscles -- severely compromises performance. Limited data now available indicate that most muscles shrink except those in the shoulders and the upper arms. During spaceflight, these upper portions of the body are used more to perform on-orbit activities.

Trying to understand just how the body's 650 muscles work together is an area that needs much more research, some of which is being done at KSC. "We are just now acquiring and developing equipment that will allow us to study in some detail the functions of the body's muscles," said Dr. Buchanan. He was speaking about the new Kincom machine KSC recently purchased. "This state-of-the-art machine assesses strength, endurance and rate of contraction and relaxation abilities of individual muscle groups," said Buchanan. The hydraulically driven machine can be programmed from a computer and gives instant biofeedback data. The machine was used in the Ames study.

At Ames this summer, muscle atrophy was induced in the volunteers through a six-degree head-down position during the entire bed-rest study. Eleven volunteers laid in bed 24 hours per day for 30 consecutive days -- a technique that simulates the effects of microgravity because of the minimal use of muscles and the re-distribution of body fluids, particularly the blood. In zero gravity, there is nothing to pull body fluids down to the lower extremities, so everthing tends to circularize around the pump - the heart - and when fluids leave the lower extremities they don't return.

Before and after the study, muscle biopsies (removal of tissue for analysis) from the thighs and calves were performed and CAT scans were performed on the leg to reveal any changes. An

assessment of the individual's muscle strength and endurance was also made before and after the bed-rest period using the Kincom machine. EMS was used on three of the volunteers. The subjects who did not receive muscle stimulation were used as controls.

"If it turns out that EMS helps prevent muscle atrophy, we would like to apply this stimulation using surface electrodes at times when the crew is sleeping, eating, reading or doing some productive work," said Buchanan. He added that EMS has also been used in rehabilitation programs for injured athletes.

EMS was used to stimulate the muscles in two pilot studies recently conducted at KSC to prepare for the Ames bed-rest study. Researchers obtained favorable data about EMS, but were not convinced it was the answer. "We hope to have more information after analyzing the results of the bed-rest study this summer," said Convertino.

KSC biomedical engineers built their own equipment to obtain and monitor data during the bed-rest study, including apparatus to stimulate the volunteers' muscles.

KSC biomedical scientists are aggressively planning to get a handle on a way to overcome muscle atrophy in space. A second "casted" study, where a cast is placed on the volunteer's dominant leg to limit muscle activity, is planned for this winter and another bed-rest study is planned for next summer. And in about two years, if all these studies bring positive results, scientists hope to have something to say about the probable long-term use of EMS in preventing muscle atrophy on long-duration space missions.

Life scientists need time in space to conduct many experiments to figure out exactly how the body adapts to weightlessness. Exercise "prescriptions" may be tried out on future Space Shuttle missions to determine if the astronauts come back with greater muscle strength or less loss of strength. Testing procedures to detect early signs of muscle atrophy may also be tried in the future on the longer shuttle missions.

Co-investigators of this research are Don Doerr, chief, KSC's Biomedical Engineering Office; Marc Duvoisin, KSC biomedical engineer; and Dr. Wyckliffe Hoffler, deputy director, KSC's Biomedical Operations and Research Office. NASA bioengineers Sandy Reed and Art Maples and biotechnicians Roy Crane and Dick Triandafils also took part in the study. Bionetics Corp. employees participating in the study include: Dr. G. Dudley; registered nurses Karen Mathes and Mary Lasley; and medical technologists Marion Merz, Deborah Holley and Vicci Hall.

# # # #

Sept. 11, 1987

Harriett Brown
SI-SAT-5

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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

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

IF.6424 ✓

NASA News

National Aeronautics and
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KSC Release No. 103-87

NASA TO SALUTE MINORITY BUSINESS EFFORTS AT KSC

KENNEDY SPACE CENTER, Fla. -- NASA will honor area minority businesses by co-hosting a breakfast Friday, Oct. 2, marking National Minority Enterprise Development Week, Oct. 4-10.

Hugh Brown, President of BAMSI, Inc., the 1987 KSC Minority Business of the Year, will receive an achievement certificate from Wesley Dean, KSC Procurement Officer. Brown will be the keynote speaker for the event, scheduled for 8 a.m. at the Melbourne Hilton Rialto Place.

Representatives from NASA and KSC contractors will attend the breakfast, which will be followed by a one-on-one counseling session with Brevard Small Business Assistance Council (BSBAC) members. Among the industry leaders on hand to provide insight into KSC business opportunities will be Norm Perry, NASA Industry Assistance Officer and BSBAC president.

"We want to show minority firms that not only do opportunities exist, but also that we're here to help minority businesses compete for these procurements," Perry said.

The theme of this year's National Minority Enterprise Development Week is "We the People, a Legacy of Minority Businesses: 1787-1987." Reservations for the breakfast may be made by calling 305/631-3368.

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Sept. 28, 1987

1F.6 #24

NASA News

National Aeronautics and
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For Release:

Diana Boles
305-867-2468

Immediate

KSC RELEASE NO. 104-87

TITUSVILLE COMPANY WINS CONTRACT FROM NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Holloway Corporation, Titusville, Fla., a $192,888 contract for construction of a protective enclosure for an electrical switching station located at Launch Pad A, Complex 39.

The pre-cast concrete enclosure, measuring approximately 71 ft. by 67 ft., will protect the switching gear that supports electrical panels inside the launch pad from exposure to ocean spray and other elements.

The fixed-price contract, one set aside for award to a small business, requires Holloway to complete all work within 90 days after notice to proceed.

# # #

Sept. 29, 1987

IF.6 #29

NASA News

National Aeronautics and
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John F. Kennedy Space Center
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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.

# # # # #

Oct. 1, 1987

NASA News

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For Release:

Diana Boles
305/867-2468

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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.

# # # # #

Oct. 5, 1987

Harriett Brown
SI-SAT-5

IF.6 #24 ✓

NASA News

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For Release:

Diana Boles
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Immediate

KSC RELEASE NO. 108-87

INTERNATIONAL STEEL INDUSTRIES, INC. WINS CONSTRUCTION CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $423,300 contract to International Steel Industries, Inc., Orlando, Fla., to perform modifications on the Launch Equipment Shop located at Complex 39.

Work being performed by the contractor includes the construction of a weather-protective enclosure on an existing storage shed that houses heavy duty machinery equipment, constructing a new storage shed for additional materials used by painters and welders, and extending the length of the track that is used for an overhead bridge crane.

The firm-fixed-price contract, one set aside for award to a small business, requires International Steel to complete all work within 180 days after notice to proceed.

Oct. 7, 1987

Harriett Brown
SI-SAT-5

IF.6 P24

NASA News

National Aeronautics and
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KSC RELEASE NO. 108-87

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Oct. 7, 1987

NASA News

National Aeronautics and
Space Administration

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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

IF 6 Hc4 √

NASA News

National Aeronautics and
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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 -

IF. 6 Hex

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For Release:

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Pat Phillips
(305) 867-2468

KSC Release No. 115-87

NASA/KSC SPONSORS INDUSTRIAL OUTREACH SEMINAR NOV. 17

KENNEDY SPACE CENTER, Fla. -- Jeb Bush, Florida Secretary of Commerce, will discuss the impact of the newly-formed Florida Commission on Space during a one-day NASA Industrial Outreach Seminar in Miami Nov. 17. Bush, chairman of the commission, will highlight plans to create a viable Florida market for expanding space business opportunities.

The day-long seminar, sponsored by NASA/KSC, is open to the public and is designed to inform businesses of ways to receive grants for NASA research in numerous fields. A variety of topics will be highlighted, including funding opportunities for small high-technology firms through both the Federal Small Business Innovation Research program and the Florida High Technology Innovation R&D Board Seed Capital Program.

The conference will also focus on biomedical research opportunities for NASA. Participants will learn how NASA technology can be transferred to the private health-care sector.

Dr. Andrea Mastro, Associate Director of the NASA Center for Commercial Development of Space at Pennsylvania State University, will discuss microgravity-related physiological changes in cells. Research in this area is a key field as NASA prepares for long-duration missions onboard the space station of the 1990's.

NASA and the Southern Technology Applications Center (STAC), are co-hosts for the meeting, with support from the College of Engineering, Florida International University, and STATUS, Inc. of Miami. The seminar is one of a continuing series that seeks to help business, especially small business, learn about NASA opportunities.

(more)

KSC NASA speakers will include George Mosakowski, manager of the Projects Management Office of the KSC Advanced Projects, Technology and Commercialization Office; Jim Aliberti, manager of mechanical systems technology, of the Advanced Projects Office, and Bob Butterfield, manager of technology integration of the Advanced Projects Office.

They will address the seminar and will also be available for one-on-one consultations during the day. Other speakers include Dr. Andriana Cantillo, director of the FIU NASA/STAC program, and Ray Monteleone, chairman of the Florida High Technology Innovation R&D Board.

The seminar is scheduled for 8:30 a.m. to 4:30 p.m. at the Radisson Mart Plaza Hotel. A registration fee of $15 includes continental breakfast, lunch buffet, and snacks.

For furthur information, call Dr. the FIU STAC offices at 554-3039 in Miami or 776-1257 in Ft. Lauderdale, or contact STAC at 1-800-354-4832.

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Nov. 9, 1987

NASA News

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For Release:

Diana Boles
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Immediate

KSC RELEASE NO. 116-87

ORLANDO FIRM WINS KSC STORAGE BUILDING CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $214,990 contract to H. W. Davis Construction, Inc., Orlando, Fla., to construct a storage building for housing ground support equipment used in hypergolic operations.

The storage building will be constructed at the Hypergolic Maintenance Facility (HMF), which is located approximately eight miles southeast of the Vehicle Assembly Building. The HMF provides the facilities required to process the hypergolic-fueled modules that make up the Space Shuttle's reaction control system (RCS), orbital maneuvering system (OMS), and the auxiliary power units (APU). Hypergolic propellants ignite on contact and do not require ignition system.

The new, one-story pre-engineered building is needed in order to store the ground support equipment together in a single facility within that area.

The fixed-price contract, one set aside for award to a small business, requires Davis Construction to complete all work within 180 days after notice to proceed.

# # #

Nov. 10, 1987

IF.6 #24 J

NASA News

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For Release:

Diana Boles
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Immediate

KSC RELEASE NO. 117-87

ROCKLEDGE FIRM WINS CONSTRUCTION CONTRACT FROM NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded an $82,700 contract to Butler Construction Company, Rockledge, Fla., for modifications to an area in the Operations and Checkout (O&C) Building.

The O&C is a five-story building in the Industrial Area where horizontally integrated payloads are received, assembled and integrated prior to mating with the space shuttle at the Orbiter Processing Facility Launch Complex 39.

The modifications to an existing room will provide approximately 580 square feet for payload checkout equipment and will include the installation of raised floor panels, an 8-ton air-conditioning unit, a fire protection halon system, electrical panel, and fluorescent lights. The contract also provides for painting and repairs.

The fixed-price contract, one set aside for award to a small business, requires the contractor to complete all work within 90 days after notice to proceed.

# # #

Nov. 18, 1987

Harriett Brown
SI-SAT-5

IF, 6 #24 ✓

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:
Immediate

Lisa Malone/George Diller
Area Code 305/867-2468

KSC Release No. 129 - 87

PAST YEAR'S ACTIVITIES SET STAGE FOR A BUSY 1988

KENNEDY SPACE CENTER, Fla. - The Kennedy Space Center's Silver Anniversary year was filled with painstaking preparations for 1988 - a year that promises to be the beginning of the most challenging era yet for the space agency.

Early in 1987, KSC's Expendable Vehicles Directorate had a "full house" at all of its launch facilities on Cape Canaveral Air Force Station.

And even though 1987 was the first year without a manned launch in six years, the busy schedule of accomplishments and pre-launch activities for Space Shuttle mission STS-26 has energized the entire center.

The electricity is obvious. "At the year's end, I'm usually amazed when I look back over what the KSC shuttle team has accomplished and 1987 is no exception," observed Deputy Director Tom Utsman.

"There has been a massive amount of hard work performed which has resulted in significant progress in our drive to return to flight," said Utsman.

With determination and skill, the team is helping to return America's space program to the sky. One of the big chores has been making changes and improvements to the three space shuttle orbiters - Discovery, Atlantis and Columbia.

Discovery - a six-time space traveler - is scheduled to fly the first post-Challenger mission. Because they want no shadow of a doubt about the return to flight, NASA officials decided to treat Discovery as if STS-26 will be its first voyage. That means that every component on the orbiter had to be brand-new - or as close to it as possible.

-more-

Between February and August, Discovery was powered down while many of its components were removed and shipped to their manufacturers for inspections and tune-ups. Among the parts receiving special attention was the orbiter's hatch assembly. Rockwell International in California was adding explosive bolts for a new crew-escape device.

Also improved were the 17-inch external tank disconnect valves which permit propellant flow between the tank and the orbiter main engines. Latches have been added to keep the valves open during powered flight.

"The first milestone in the process of returning to flight," as Launch Director Bob Sieck described Discovery's power-up, was reached Aug. 3. Meeting a deadline set so far in advance - the date had been circled seven months earlier, in January - was an important accomplishment for the team, Sieck noted.

Discovery may have have been the star but Orbiter Columbia shared the spotlight. Columbia's curtain call came in September when NASA's first shuttle was rolled into the new Orbiter Modification and Refurbishment Facility for improvements leading to its return to flight a year from now.

Amid the charged atmosphere surrounding Discovery and Columbia, Atlantis was powered up Dec. 9 so crews could begin preparing for its scheduled return to flight on STS-27 next fall.

Another important entree on KSC's 1987 menu was the first involvement with the redesigned solid rocket motors, in a stacking exercise using the Assembly Test Article (ATA). The practice session began before Thanksgiving and was concluded in late December. Two pieces, the aft and aft center segments of one redesigned booster, were assembled and disassembled to test new tools and procedures.

Practice sessions - including simulated launch countdowns and emergency drills - were regular occurrences during 1987. Computer programs with built-in problems were run periodically to keep launch team members in practice and to build the experience of firing room console operators.

Perhaps the most tedious task for space shuttle engineers this year has been the revision of the huge Operational

Maintenance Instructions (OMI) manuals and the smaller job cards. Both documents tell how to do space shuttle jobs which range from the simple to the complex - from cleaning the Orbiter Processing Facility, to installing and testing orbiter parts, to launching the vehicle.

NASA established guidelines governing "the way we do business" in the aftermath of the Challenger accident, said Larry Ellis, chief of KSC's Space Shuttle Project Engineering Office, who heads the OMI reviews. Ellis emphasized that the goal of his special assignment is to make sure the OMIs are technically correct and to create a safe atmosphere for both workers and flight hardware.

The OMI review team isn't satisfied with just one look. They read some of the more complex books as many as three times before signing the papers making the manuals official, Ellis said.

"We feel confident that as a result of these reviews, the OMIs are consistent with other documentation and contain procedures for more testing of orbiter systems that will give engineers an extra margin of confidence," he said.

About 140 facility and equipment modifications are adding another margin - this one for "safety in operations with the ground system or in processing the vehicle," according to Homer Brown, chief of Engineering Development's Shuttle Management Office. He said enginers hunted for critical items and single failure points that should be corrected, and found a variety of them at Pad 39-B and on the Mobile Launcher Platforms (MLPs).

For instance, workers are adding two slidewire baskets baskets for a total of seven. These are located 195 feet up on Pad 39 B's Fixed Service Structure, at the point where a flight crew enters an orbiter's cockpit. The baskets are one of several crew escape enhancements being made. New armored personnel carriers for fire and rescue crews are another.

On the mobile launch platforms, the hold-down posts were improved to keep them from slipping. The improvements to space shuttle ground and flight equipment, the OMI revisions, and the pre-launch processing all demonstrate "the KSC can-do attitude and team professionalism," declared Deputy Director Utsman.

As the new year began, NASA had just completed the successful launch of AC-66 at Complex 36. Delta rockets were on both pads at Launch Complex 17 and another Atlas Centaur was being erected on Pad 36-B.

In Hangar AE, the GOES-H weather satellite was being prepared for transfer to Launch Complex 17 for mating with the Delta 179 booster on Pad A. Nearby, at Titusville's Astrotech, a Palapa communications satellite was being checked for later mating with Delta 182 on Complex 17's Pad B.

The liftoff of GOES-H on Feb. 25 and Palapa on March 20 marked successful back-to-back missions for the NASA/McDonnell Douglas launch team. However, the loss of Atlas-Centaur 67 in March due to lightning and a tank accident on AC-68 in July again demonstrated the unforgiving nature of the complex launch environment.

With a strong understanding of "lessons learned," NASA used the information gained from those incidents to strengthen launch systems and human knowledge. Heading into 1988, NASA completed a major review on the upcoming Delta 181 mission.

With the hiatus in space shuttle flights, many areas of launch support had a chance to catch up on needed maintenance, modifications and improvements, and to prepare for new facilities which were under construction.

The antenna at the Ponce de Leon tracking station on the shore of the Atlantic Ocean near New Smyrna Beach was refurbished and covered with a fiberglass radome to protect it from corrosive salt air.

Telemetry from Ponce de Leon Inlet is now microwaved to MILA, the Spaceflight Tracking and Data Network station on KSC. New equipment was installed at MILA this year, some of it replacing hardware dating from the Skylab era.

"We've made over 150 engineering changes to the tracking equipment since the Challenger accident," noted Station Director George Jenkins.

The Payload Hazardous Servicing Facility, the last stop for many space shuttle payloads, was completed in 1987. The PHSF is where necessary propellants - such as attitude control fuels - can be loaded aboard payloads such as the Gamma Ray

Observatory, the Upper Atmospheric Research Satellite, and flight elements for the Hubble Space Telescope.

"We needed a much larger facility than we had available for some of the bigger payloads," said Gene McDilda, chief of the Payload Site Management Branch.

The 18,800-square-foot central servicing building is environmentally controlled for cleanliness, low humidity and moderate temperature. Two sets of louvered doors measuring 35 feet by 75 feet separate the outside world from an airlock, and the airlock from the spacecraft servicing high bay.

The PHSF is managed under McDonnell Douglas Astronautics Company's payload ground operations contract, which completed its first full year in 1987. The contract consolidated a number of space shuttle payload processing contracts into a single, long-term agreement.

"The transition has gone extremely well," said John Conway, KSC's director of payload management and operations. "McDonnell Douglas is doing an excellent job for us and the payload effort toward the flight of STS-26 is right on track."

The principal payload for STS-26 is a Tracking and Data Relay Satellite with an Inertial Upper Stage.

Another major structure - the Orbiter Modification and Refurbishment Facility - became operational at Space Shuttle Launch Complex 39 during the past year.

Offering a third bay for space shuttle orbiters where inspections, repair work, storage and off-line modifications can be performed, the OMRF offers a high bay area of 197 feet long, 150 feet wide, and 95 feet high, duplicating bay dimensions in the Orbiter Processing Facility. During its initial operational stages, the OMRF will handle only non-hazardous work until planned upgrades are completed.

As the year ends, KSC employment is up, morale is high and plans for resumption of shuttle flights during the coming year are on schedule.

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Dec. 28, 1987

IF.6 #28/J

NASA News

National Aeronautics and
Space Administration

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)

May 28, 1987

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

RELEASE: 87-85

NASA ISSUES RFP FOR LIQUID-FUELED ROCKET BOOSTER STUDIES

NASA's Marshall Space Flight Center, Huntsville, Ala., today issued a request for proposals for system studies and design concepts of liquid-fueled rocket boosters for possible use on the Space Shuttle and other future vehicles.

L.T. Spears and Michael R. Moore of Marshall's advanced projects office indicate 9-month-long multiple studies of both pressure-fed and pump-fed liquid-fueled rocket boosters could begin as early as this summer.

The overall liquid rocket booster study also involves several other NASA centers, including Johnson Space Center, Houston; Kennedy Space Center, Fla.; and Langley Research Center, Hampton, Va. Johnson will evaluate the effects of liquid rocket boosters on the overall flight characteristics of the Space Shuttle. Kennedy will analyze the integration requirements of liquid rocket boosters on launch facilities. Langley will assist in aerodynamic analyses and evaluation of wind tunnel tests of Space Transportation System/liquid rocket booster concepts.

-end-

M. Konjevich
SI-SRV-1

NASA News

National Aeronautics and
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John F. Kennedy Space Center
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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 -

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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:

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 -

1F.6 H28 ✓

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:

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

November 5, 1987
12 Noon

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

RELEASE: 87-167

SHUTTLE SOLID ROCKET MOTOR JOINT TEST SCHEDULED NOVEMBER 9

Morton Thiokol, NASA's prime contractor for the Space Shuttle solid rocket motor, will conduct the sixth in a series of joint environment simulator (JES) tests on Nov. 9 at its Wasatch Operations in Utah. The test is part of the Space Shuttle solid rocket motor redesign program.

The test, scheduled for 3 p.m. EST, will be the second test in the JES series to use full-size hardware with the capture feature and third O-ring design.

The JES test article consists of a forward dome with igniter, two cylindrical segments, an external tank attach segment and an aft dome with a nozzle port. The test assembly contains two field joints of the capture feature and third O-ring design that are heavily instrumented.

Each of the two joints in this test will have an intentional defect through the J-seal, which is intended to permit hot gas flow to the capture feature O-ring. In addition, one of the joints will have a further defect through the capture feature O-ring, which is intended to permit gas flow to the primary O-ring. The defects will allow engineers to compare the effects of hot gas erosion on the various parts of the joints.

About 370 pounds of propellant will provide hot gas to duplicate the ignition pressure buildup of a full-size motor. For this test, hot gas and pressure will be retained inside the test article and not allowed to vent until about T+122 seconds. This will allow the test joints to be exposed to hot gas and pressure for much longer than in previous JES tests.

-more-

A total of 10 tests of the JES are scheduled prior to the planned June 1988 launch of the next Space Shuttle. The tests are designed to evaluate the performance of redesigned case-joint hardware and the associated insulation joint. Design features evaluated in JES and other short-duration test articles will be verified in full-scale static test motors. The next full-scale motor test will be Development Motor-9 (DM-9), scheduled for testing in mid-to-late December.

The Marshall Space Flight Center in Huntsville, Ala., manages the solid rocket motor program for NASA.

- end -

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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:
December 2, 1987

Sarah Keegan
NASA Headquarters, Washington, DC
(Phone: 202/453-8536)

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

RELEASE: 87-178

NASA TO CONDUCT TESTS OF REDESIGNED SHUTTLE BOOSTER ELEMENTS

NASA's Marshall Space Flight Center, Huntsville, Ala., is scheduled to begin a series of structural tests this week on the Space Shuttle solid rocket booster. The tests, to be performed on hardware referred to as Structural Test Article-3, will be conducted over a 3-month period in Marshall's East Test Area.

This solid rocket booster test series will verify the structural integrity of the Shuttle booster's redesigned motor case, redesigned external tank attach ring and redesigned aft skirt. During testing, maximum loads and internal motor case pressures, simulating those expected during prelaunch and flight of the Space Shuttle, will be applied to the test article.

The test article to be used is a shortened version of the Shuttle booster using full scale hardware. The test article consists of a forward dome with igniter plate, two capture feature segments, modified external tank attach cylinder, two 120-inch stiffener segments, aft dome, nozzle closure, external tank attach ring, dummy forward skirt and aft skirt.

Morton Thiokol supplied the motor case and hardware, and United Space Boosters, Inc./Booster Production Company supplied the 360-degree external tank attach ring and booster aft skirt.

The testing is part of a series of solid rocket booster tests being conducted at the Marshall Center as part of NASA's overall effort to return the Space Shuttle to flight.

- end -

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NASA News

National Aeronautics and
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For Release: December 3, 1987

RELEASE: 87-179

ACCEPTANCE TESTS COMPLETED FOR TWO SPACE SHUTTLE ORBITER ENGINES

Full mission-duration tests of Space Shuttle main engines 2022 and 2019 have been successfully conducted, completing the acceptance testing of the first two engines to fly on the next Shuttle mission.

The 520-second tests were conducted Nov. 21 on engine 2022 and Nov. 28 on engine 2019 at NASA's National Space Technology Laboratories, Bay St. Louis, Miss. The tests were followed by complete engine examinations and test data analysis which showed that the engines performed within established standards.

"This is a major milestone and keeps us on course to deliver three engines within Kennedy Space Center's requirement for a June Shuttle flight," said Jerry Smelser, deputy engine project manager at Marshall Space Flight Center, Huntsville, Ala.

At each test sequence stage, engine physical examination included oxidizer heat exchanger leak checks. It was leakage in that component which appeared in engine 2027 after its full-duration firing Oct. 10 which resulted in pulling that engine from the lineup for the STS-26 mission. There has been no sign of leakage in engine 2022 and inspection of 2019 is in progress.

The third engine slated for the STS-26 mission is being prepared for its three test firings. It has been installed on the test stand from which engine 2022 was just removed.

Officials expect acceptance of the three flight engines for the STS-26 mission to be completed in time for delivery to the Kennedy Space Center, Fla., prior to the first week of January.

- end -

IF.6 #24 ✓

NASA News

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For Release:

Diana Boles
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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

M. Konjevich
SI-SRV-1

1F.6 Hd)

NASA News

National Aeronautics and
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John F. Kennedy Space Center
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KSC RELEASE NO. 8-87
NOTE TO EDITORS/NEWS DIRECTORS

GOES-H PRESS BRIEFING AND SATELLITE SHOWING SET

KENNEDY SPACE CENTER, Fla. -- A press briefing and display of the GOES-H weather satellite will be held on Thursday, Jan. 29.

A program manager from NASA's meteorological satellite project office at the Goddard Spaceflight Center and a spacecraft engineer from the satellite's manufacturer, Hughes Aircraft, will brief the press and respond to questions. After the briefing media will be escorted to the cleanroom where the satellite is under checkout.

The briefing is scheduled to begin at 11 a.m. on Thursday, Jan. 29. Media wishing to attend should be at the KSC News Center by 10:30 a.m. for transportation and escort to the Hangar AE Spacecraft Checkout Facility on Cape Canaveral Air Force Station.

Those with permanent badges may proceed directly to the press site. Those requiring accreditation should contact the NASA News Center by the close of business Wednesday, Jan. 28.

GOES-H is being launched by NASA for the National Oceanic and Atmospheric Administration (NOAA).

Liftoff of Delta 179 from Pad A on Launch Complex 17 is scheduled for Feb. 19 at the opening of a launch window that extends from 5:48 to 6:20 p.m. EST.

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Jan. 23, 1987

1f. 6 #24

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Mitch Varnes
305-867-2468

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.

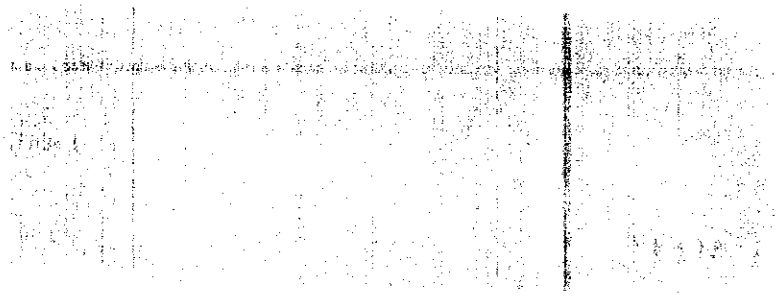
The January attendance figure marks the eighth time in the past 12 months that monthly visitor records have been toppled, and is the highest of any January since the space center opened for public tours in 1966. The previous high for January was in 1981 when about 135,000 people visited Spaceport USA.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

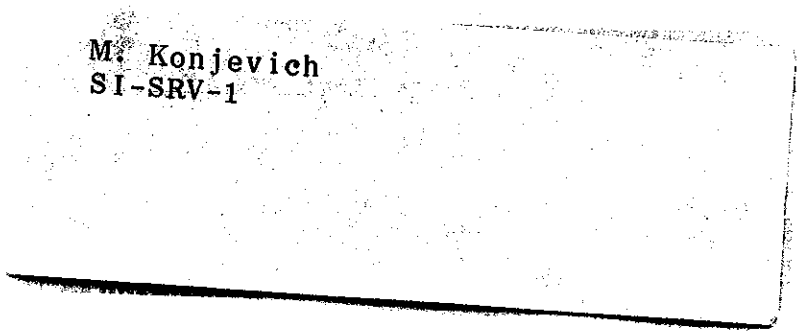
The heaviest attended year in Spaceport USA's history was in 1986 when more than 2.1 million people visited the space center. Seven record breaking months helped boost Spaceport USA attendance to unparalleled records in 1986.

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




M. Konjevich
SI-SRV-1

17.6 # 24

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KSC RELEASE NO. 24-87

KSC SALUTES 25TH ANNIVERSARY OF JOHN GLENN'S FLIGHT

KENNEDY SPACE CENTER, Fla. -- A tiny, bell-shaped spacecraft with about as much room as a telephone booth served as John Glenn's magic carpet into the history books when he became the first American to orbit the globe on Feb. 20, 1962.

That significant event, now a quarter-century into the past, was an early step on the road that would lead the United States to the accomplishment of the national goal spelled out by President Kennedy in 1961, of landing a man on the Moon before the end of the decade and returning him safely to Earth.

Alan Shepard and Gus Grissom boldly made the first two U.S. manned suborbital flights, each lasting only minutes, on May 5 and July 21 of 1961.

After proving that man could safely survive the 15-minute flights, NASA decided to cancel the next four suborbital flights on Redstone, and proceed right away with launching a man into orbit on an Atlas.

There was a challenge involved because the Soviets had successfully launched Yuri Gagarin, the first man in orbit, 10 months before Glenn's flight.

Proof that the Atlas could make orbital flight came in September 1961 with the successful flight of Mercury/Atlas 4. "We had been preparing for manned flights," recalled George Page, who was then General Dynamics Convair assistant test conductor for the Atlas.

"We launched Mercury spacecraft on the Atlas - some with chimpanzees and some with just instrumentation," said Page. Enos, the last Mercury support chimpanzee to fly, was aboard MA-5 and survived two complete orbits in November 1961.

The time was right for the U.S. to achieve a manned orbital mission, and John Glenn was selected for the flight - MA-6.

"Booster" or Atlas, operations were conducted by the General Dynamics Convair group. Teams from Langley and Lewis performed "spacecraft" operations with the McDonnell Aircraft workers.

The Mercury/Atlas vehicle was 95 feet tall. The 71-foot-tall Atlas launch vehicle and the spacecraft adapter were erected at Complex 14, and ground tests were conducted to verify that the vehicle was ready for flight.

"We went through many countdowns because of weather or parts," recalled Page. "I used a different color pen in my countdown book each time we attempted to launch. Then I had to start double checking the items as they were accomplished," said Page, noting that he still has the countdown book.

"It was an exciting time. After so many countdowns, when we finally did launch, it was unbelievable," said Page.

Mike Wedding, now chief of KSC's Payloads Projects Branch in Shuttle Engineering, was a member of the MA-6 launch team. "I was with the Lewis group which was called the 'Space Task Group,'" he recalled.

"I'll always remember the final polling of the launch team that day to make sure all systems were go. Paul Donnelly, the spacecraft test conductor, conducted the poll. Right at main engine ignition, Capsule Communicator Scott Carpenter, said 'God speed John Glenn.' And I'll always remember that, too," Wedding said.

Launch finally came at 9:47 a.m. Feb. 20, 1962, and minutes later John Glenn became the first American to orbit Earth.

It was a tense time for the members of the Convair team as they waited for the Atlas stage to separate from the spacecraft. Major milestones in the flight were abbreviated by "Mark 1, 2, 3" etc., and were called out as they occurred. Members of the team knew them all by heart.

Page reminisced that after the last mark, their job was done and Glenn was in orbit: "There was a lot of euphoria and a loud cheer in the blockhouse then." Page later joined NASA and played a major role in Apollo spacecraft operations. He served as director of expendable vehicles and as shuttle launch director prior to his retirement in 1984. Page is now chief technical consultant to the president of Lockheed Space Operations Co.

Glenn's flight was relatively smooth except for minor discrepancies. The automatic stabilization and control system did not react properly during the first orbit and, after experimenting, Glenn controlled spaceceraft attitude manually through much of the remainder of the flight.

An indicator in Mercury Control showed the spacecraft heat shield and compressed landing bag out of locked position. Despite indications in the Cape's Mercury Control, Glenn reported that his capsule's landing-bag switch was in the off position and had not deployed.

Everyone involved in that flight remembers that event as being one of great concern. After much discussion in Mercury Control, it was decided that Glenn was not to jettison the assembly around the heat shield to assure that it would remain in place.

Glenn followed instructions from Carpenter, and the Friendship 7 spacecraft splashed down safely in the Atlantic Ocean, some 800 miles southwest of Bermuda, 4 hours, 55 minutes and 23 seconds after liftoff. Glenn had completed three orbits.

Later a faulty switch that gave a false signal was identified as having caused the concern over the landing-bag.

"It was a very important first and I think we all felt a lot of pride in being a part of the team," said Page. "We all felt it was a beginning."

Over the years, rust and other environmental factors took their toll on the Complex 14 Launch tower, and in 1976 the tower was disassembled and the pieces were sold.

A marble memorial, etched with the Atlas tower and liftoff, now stands on the ramp at Complex 14 honoring John Glenn and the other astronauts who were launched on Mercury/Atlas vehicles from that site: Scott Carpenter, Wally Schirra and Gordon Cooper. The memorial was dedicated in 1980 on the 18th anniversary of Glenn's flight.

# # # #

February 17, 1987

M. Konjevich
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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

IF.6 #24 ✓

NASA News

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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."

- more -

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

M. Konjevich
SI-SRV-1

IF.6 #22 ✓

NASA News

National Aeronautics and
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KSC RELEASE NO. 28-87
NOTE TO EDITORS/NEWS DIRECTORS

PALAPA PRESS BRIEFING AND SATELLITE SHOWING SET

KENNEDY SPACE CENTER, Fla. -- A press briefing and display of the Palapa communications satellite will be held on Thursday, Feb. 26.

A Palapa program manager and a spacecraft engineer from Hughes Aircraft will brief the press and answer questions. After the briefing, media will be escorted to the cleanroom where the satellite is under checkout.

The event is scheduled to begin at 11 a.m. on Thursday, Feb. 26. Media wishing to attend should be at the Gate 3 Pass & Identification Building on SR 405 south of Titusville by 10:30 a.m. Transportation and escort to the Astrotech facility where the satellite is undergoing prelaunch processing will be provided. No advance accreditation is required.

Palapa is being launched by NASA for the government of Indonesia. It is the first payload originally manifested for the Space Shuttle that will be launched on a Delta as a back-up to the Shuttle program. The Payload Assist Module (PAM) provides this flexibility.

Liftoff of Delta 182 from Pad B on Launch Complex 17 is scheduled for Mar. 19 at the opening of a launch window that extends from 5:22 to 6:47 p.m. EST.

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Feb. 20, 1987

M. Konjevich
SI-SRV-1

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Dick Young
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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

M. Konjevich
SI-SRV-1

IF.6 HLV

NASA News

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

Dick Young
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March 2, 1987

KSC RELEASE NO. 35 - 87

KSC HOMECOMING CELEBRATION SCHEDULED FOR SATURDAY, MARCH 7

KENNEDY SPACE CENTER, Fla. - A homecoming celebration to mark the 25th anniversary of the creation of KSC as an autonomous NASA center will be held at Spaceport USA on Saturday, March 7, beginning at 9 a.m.

Thousands of former and current Kennedy Space Center employees are expected to attend the homecoming to reminisce about the past and speculate on the future at the first of several events to be held this year to mark the center's establishment in 1962.

It was on March 7, 1962 - only 15 days after John Glenn became the first American to orbit the Earth - that NASA announced the establishment of a launch center at Cape Canaveral. Prior to that time, launch functions here were conducted by the Marshall Space Flight Center's Launch Operations Directorate.

Among the scheduled speakers at the 9 a.m. program are U S. Sen. John Glenn; U. S. Rep. Bill Nelson, who flew as a payload specialist aboard the Space Shuttle 61-C mission in January, 1986; KSC Director Forrest McCartney; Dick Smith, KSC's third director; Miles Ross, former deputy director, and Mrs. Gay Debus, widow of the late Dr. Kurt H. Debus, KSC's first director.

Following the formal program, there will be an opportunity for attendees to swap stories, munch on refreshments and listen to the Florida Space Coast Philharmonic under the direction of Maria Tunicka perform a musical salute to KSC.

Registration of NASA and contractor employees will be held at Spaceport USA from 7 until 8:30 a.m. A group photograph of the "old-timers" whose employment dates back to 1962 will be taken following the program.

- more -

The event is open to all former and current civil service and contractor employees of KSC and their families.

Those with questions may contact KSC's Visitors Services Branch at Area Code 305/867-2363.

# # # # #

NOTE TO EDITORS/NEWS DIRECTORS:

This 25th anniversary homecoming celebration is open to coverage by the press and we hope you will take the opportunity to drop by and celebrate the occasion with us. Those needing additional information may call the KSC News Center at Area Code 305/867-2468.

M. Konjevich
SI-SRV-1

IF.6 H24 ✓

NASA News

National Aeronautics and
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For Release:
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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

M. Konjevich
SI-SRV-1

IF. 6 #24

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Immediate

KSC RELEASE NO. 38-87

TITUSVILLE COMPANY WINS KSC CONTRACT

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Britt's Air Conditioning, Inc., Titusville, Fla., a $30,639 contract to install an air conditioning unit in the Thrust Vector Control Deservicing Facility located on the Cape Canaveral Air Force Station.

The facility, occupied by USBI Booster Production Company, Inc. and Morton Thiokol personnel, has the capability of servicing and de-servicing the thrust vector control system which is located in the aft skirt of the solid rocket booster. This is the system that gimbals the solid rocket motor nozzle and helps to steer the entire shuttle vehicle during the first two minutes of flight.

The fixed-price contract, one set aside for award to a small business, requires the contractor to complete all work within 110 days after notice to proceed.

# # #

March 5, 1987

M. Konjevich
SI-SRV-1

IF.6 #24

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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.

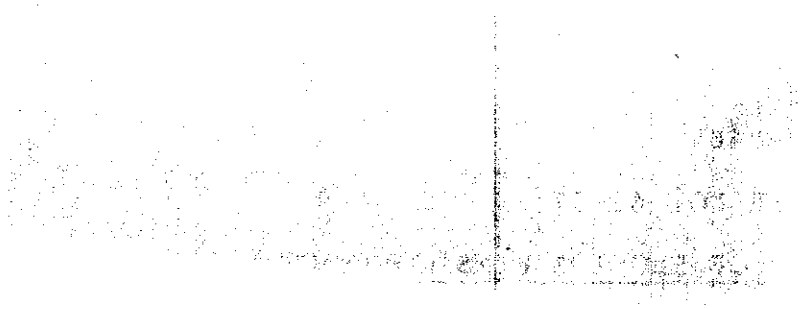
The series of seminars, which will be conducted by NASA personnel from Kennedy Space Center, are divided into two types. One type will focus on the three elements mentioned, and the second type will involve the NASA Industrial Affairs Office, which will familiarize companies on correct procedures for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



IF.6 #24

NASA News

National Aeronautics and
Space Administration

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

For Release:
March 20, 1987

George H. Diller
Kennedy Space Center
Telephone: (305) 867-2468

Release No. 44-87

NOTE TO EDITORS/NEWS DIRECTORS

FLTSATCOM PRELAUNCH NEWS CONFERENCE SET FOR MARCH 25

KENNEDY SPACE CENTER, FLA. -- The prelaunch news conference for the FltSatCom F-6 Department of Defense communications satellite will be held 2 p.m. on Wednesday, March 25 in the KSC News Center Auditorium.

The satellite will be launched by NASA aboard Atlas Centaur 67 from Pad B on Launch Complex 36 on March 26. Liftoff is scheduled at the opening of a launch window that extends from 4:08 p.m. to 4:38 p.m. EST.

Participating in the news conference will be:

James L. Womack, Director, Expendable Vehicles Operations, John F. Kennedy Space Center, NASA

John W. Gibb, Manager, Atlas Centaur Project Office, NASA Lewis Research Center, Cleveland

Colonel John W. Allsbrook, Deputy for Fleet Satellite Communications System, Air Force Space Division.

News media representatives needing accreditation should contact the News Center by the close of business on Tuesday, March 24. Badges will be issued at the Gate 3 Pass & Identification Building, located on the NASA Causeway immediately east of U.S. Route 1 at the entrance to the John F. Kennedy Space Center, two miles south of Titusville. These badges will also be valid for the launch.

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KSC FORM 2-160A (3/80)

The event will be available on the NASA Select TV satellite distribution system, RCA Satcom F2R, Transponder 13. Audio will also be provided on the V-2 cirucits which may be accessed directly by dialing 867-1220, 867-1240, 867-1260.

ON LAUNCH DAY, THURSDAY MARCH 26: Those not permanently or previously accredited may obtain press badges starting at 2:30 p.m. at the Gate 1 Pass & Identification Building. This is located just off the Bee Line Expressway on SR 401 at the entrance to Cape Canaveral Air Force Station. A convoy with an Air Force Public Affairs escort will be provided to Press Site 1.

Photographers wishing to go to the advance photo site established at Complex 15 should remain in the convoy after arrival at the press site.

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M. Konjevich
SI-SRV-1

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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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305-867-2363

For Release:
IMMEDIATE

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.

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April 1, 1987

M. Konjevich
SI-SRV-1

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NASA News

National Aeronautics and
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Immediate

KSC RELEASE NO. 49-87

MAITLAND COMPANY WINS CONTRACT FROM NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a $299,299 contract to the S. I. Goldman Company, Maitland, Fla., to provide and install a high temperature hot water generator.

The new equipment will replace the oldest of the three generators that are used to provide hot water for heating, and domestic use, in the Vehicle Assembly Building, the Orbiter Processing Facility, and Launch Control Center in the Complex 39 area. The generators are located in the VAB Annex.

The firm-fixed-price contract, one awarded to a small business, requires Goldman to complete all work within 240 days after notice to proceed.

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April 17, 1987

M. Konjevych
SI-SRV-1

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NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
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Immediate

KSC RELEASE NO. 52-87

NASA RENEWS WASHINGTON STATE UNIVERSITY GRANT TO CONTINUE STUDY

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has renewed a grant to Washington State University valued at $45,000 to investigate how calcium is affected during plant growth in space. The grant covers a 12-month period.

The study is being done at Washington State University, Pullman, Wash., in the Department of Horticulture and is entitled, "Calcium Messenger System in Gravitropic Response in Plants."

By conducting these experiments, NASA is learning more about how calcium interacts with certain enzymes in plants and the way this interaction is influenced by gravity. Understanding more about how gravity affects plants is important to studies of plant growth in space.

This effort is funded under the Space Biology Program, which is part of a life sciences program that studies the way living systems, such as plants and animals, respond to gravity.

Kennedy Space Center is managing eight of the many grants in the agency-wide Space Biology Program.

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April 27, 1987

M. Konjevich
SI-SRV-1