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http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

Cape Canaveral Spaceport Symposium addresses vision, plans for future in space

NASA Deputy Administrator Fred Gregory offered words of encouragement to Cape Canaveral Spaceport leaders at the spaceport's seventh annual symposium.

Fred Gregory

"I'm extraordinarily proud of the work of literally thousands of dedicated workers in helping to make certain that Space Shuttle launches and landings are flawless in execution, my three flights included," said Gregory, who served as an astronaut in 1985, 1991 and 1995.

"Roadmap to the Future" was the theme of the Canaveral Spaceport Symposium held Oct. 29-30 at the Radisson Resort at the Port in Cape Canaveral.

The two-day event was sponsored by the Cape Canaveral Spaceport (CCS) — a partnership of the Air Force 45th Space Wing, NASA/Kennedy Space Center, the Florida Space Authority, as well as industry suppliers and partners of the space program.

"The continued operation and upgrading of the Space Shuttle fleet and the building up of the capabilities of the International Space Station are key functions of our Human Exploration and Development of Space Enterprise, and will no doubt keep this facility quite busy into the next decade. And of course, we are developing plans for the launch systems and capabilities that will replace the Space Shuttle," Gregory told the group.

The topics of the symposium's talks included "A Vision of America's Future in Space Access," "Space — The High Ground Defense of America," "America's Exploration of Space — The Next 30 Years," and "Regional Planning for the Future of Central Florida."

Ed Gormel, at the podium, addresses guests at the Cape Canaveral Spaceport Symposium. With him on stage are (center) Brig. Gen. Gregory Pavlovich, commander, 45th Space Wing, and KSC Director Roy Bridges (right).

The featured speakers were some of the top experts in spaceport planning and operations including Dr. Jeremiah Creedon, NASA associate administrator for Aerospace Technology; Maj. Gen. Howard Mitchell, director of operations, Air Force Space Command; Roy Bridges Jr., director, NASA/Kennedy Space Center; Brig. Gen. Gregory Pavlovich, commander, 45th Space Wing; and Edmond Gormel, executive director, Florida Space Authority.

Four panel discussions addressed the "Cape Canaveral Spaceport Master Plan," "Future Business Plans Affecting Spaceport Operations," "Technology Plans for Future Spaceports' Operations and Development," and "Future Partnering Plans for Cape Canaveral Spaceport Development."

For additional information on the symposium, visit **http://www.capecanaveralspaceport.org**.

Inside

STS-113 science waits for rescheduled launch

Following the completion of tanking operations, NASA managers postponed the launch of Endeavour on mission STS-113 due to higher than allowable oxygen levels in the orbiter's mid body. At press time, the launch was being delayed at least until Nov. 18.

In addition to transporting an International Space Station truss segment, STS-113 will deliver and retrieve several exciting research experiments developed by NASA and commercial investigators. These experiments will be flown in the Orbiter middeck.

Two of STS-113's experiments will utilize the Microgravity Science Glovebox (MSG), a facility rack developed by the European Space Agency, located in the U.S. Lab. The first experiment, **Coarsening in**

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TDRS-J to launch in November

TDRS-J is the third in the current series of three Tracking and Data Relay Satellites designed to replenish the existing on-orbit fleet of six spacecraft, the first of which was launched in 1983. At press time, the exact launch date in late November was under review.

TDRS-J is to be launched into geosynchronous-transfer orbit aboard a Lockheed Martin Atlas IIA rocket (AC-144) from Pad 36-A at Cape Canaveral Air Force Station. This is the

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Recognizing Our People


James Jennings and his wife, Yvonne.

Jennings honored for years at KSC

After 22 years of service at Kennedy Space Center, former Deputy Director James Jennings was lauded with a farewell dinner Nov. 2 at the Debus Conference Facility.

Many of his friends and colleagues showered him with praise and presents. The common thread in the tributes was an appreciation of his ability to listen and give good advice.

Jennings, who is now serving as deputy associate administrator for Institutions and Asset Management at NASA Headquarters in Washington, D.C., was obviously touched by the outpouring.

"This is more than I ever would have expected," Jennings said.

Jennings paid tribute to his mother, Roberta, wife, Yvonne, and secretary, June Perez, with flowers, and he proudly mentioned his children, other family members and friends in attendance. He had many words of thanks for his colleagues at KSC.

"I got my start at Marshall (Space Flight Center), but my growth came at KSC," Jennings said of his 35-year career with NASA.

He said the thing he was most proud of from his career at KSC was the mentoring he had done.

"I'll never forget my time here," he said.

Ramon Lugo III Named Deputy Director, Expendable Launch Vehicles & Payload Carriers

Ramon Lugo III has been appointed deputy director of the Expendable Launch Vehicles (ELV) & Payload Carriers Program at Kennedy Space Center (KSC), effective Nov. 10. Lugo previously served as executive director of the Cape Canaveral Spaceport Management Office (CCSMO). Susan Kroskey, currently serving as deputy director of the CCSMO, will assume the role of acting executive director.

Logo's first role at KSC was as an engineer in the construction and modification branch, responsible for construction modifications to Launch Complex 39A in preparation for the first Space Shuttle launch. He has also served in numerous positions at KSC in Space Shuttle, payloads, ELV and installation operations.

As deputy director, Lugo will serve as the ELV and Payload Carriers Program strategic interface to the Space Transportation System (STS) and the International Space Station (ISS) programs. He will work with the U.S. Air Force, the National Reconnaissance Office (NRO) and other government agencies to establish beneficial partnerships, and will be the contact for strategic contract outsourcing and industrial base issues, and for the assessment of business cases. He will be the program interface to KSC on processing facilities and institutional issues affecting KSC's launch services capabilities.

In 1995, Lugo was selected to attend the Harvard Program for Management Development. He has received numerous awards and recognition, including two NASA Exceptional Achievement Medals for his contributions to the Galileo mission and the Space Station redesign. He also received the NASA Outstanding Leadership Medal for his role in the ELV program transition.

Kroskey served as the Deputy Director of the CCSMO, responsible for assisting the executive director in the contract management and administration of the Joint Base Operations and Support Contract (J-BOSC). She was responsible for the joint program management between NASA KSC and the United States Air Force, 45th Space Wing (CCAFS and PAFB), in support of a safe, efficient and effective environment for providing premier base support to the space launch community. Kroskey was designated deputy director in May 2000, during the KSC 2000 reorganization. Prior to that time, Kroskey served as the deputy director of Installation Operations in 1999 and served as acting deputy director in the same position in 1998.


KSC Director Roy Bridges (center) congratulates Ramon Lugo (left) in his new role as deputy director of ELV and Payload Carriers, and Susan Kroskey, who is now acting executive director of CCSMO.

Kroskey has received numerous awards and honors including the KSC Federal Woman of the Year in 1992, the NASA Exceptional Achievement Medal in 1993, the NASA CFO Special Services Award in 1997, and a nomination for a National Rotary Pace Achievement Stellar Award in 2000.

Freedom To Manage task force at KSC

Freedom to Manage (F2M) is a National and Agency objective to enable managers to respond to new situations or rapidly changing conditions by eliminating obstacles through improving efficiency, performance and accountability. It is important enough for NASA to form a task force to focus on it.

The task force has co-chairs, Courtney Stadd, the chief of staff and White House liaison; and Greg Reck, the deputy chief technologist. In its initial review, the task force found it is worthwhile to divide the efforts into four functions: Financial Resources, Procurement, Human Resources, and Other activities such as External Communications/Intellectual Property.

On Nov. 22 the task force will be here at KSC all day, both to offer and seek information on what needs to be done to provide more freedom to managers at both the Agency and Center levels. The task force has

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KSC employees make a difference in United Way event

Kennedy Space Center employees donated their time and efforts to the community helping to make this year's "You Make A Difference Day" a tremendous success. This year, more than 70 NASA employees participated in the event, which was sponsored by the United Way Oct. 25 - 26.

NASA and contractor employees gathered at several Brevard County locations, including the Central Brevard Sharing Center, Baxley Manor, Meals-on-Wheels, and others. KSC employees typically represent a large percentage of the event's volunteers.

"The smiles and appreciation shown by the care recipients are what makes this effort so rewarding," said Local Legislative Liaison Celene Morgan, who headed up the NASA/KSC Make a Difference effort.

"KSC continues to give back to the community in which we live, work, and play."

The Center Director sent out a letter to all NASA employees asking for their support of this worthwhile community project. To answer the call, some people organized teams and "adopted" a project, while other individuals contacted United Way directly, offering to help out wherever they were needed.

One such group was the former members of the NASA Checkout, Assembly, and Payload Processing Services (CAPPS) Source Evaluation Board who pooled their talents to paint the exterior of a small building at the Central Brevard Sharing Center in Cocoa.

The Central Brevard Sharing Center provides essentials such as food, clothing, household goods, furniture, and medicine to those needy members of our community. They provide a free lunch onsite daily. Their main funding source is the generosity of local churches and the individual contributions.

"I was amazed at the tremendous response I received from my initial e-mail asking for CAPPS volunteers. Everyone was very enthusiastic to join in," said Integration Engineering Branch Chief, ISS/Payload Processing Directorate, Tom Pentrack, who organized the Cocoa project.

NASA employees help paint a building at the Central Brevard Sharing Center, Cocoa, during "Make A Difference Day."

Other KSC employees also supported the painting project in Cocoa. One such volunteer was Bob Mott who commented "It's great when the KSC family can reach outside of our gates and help out the community."

Carol Thompson of the Central Brevard Sharing Center noted the KSC efforts: "We were so pleased with the painting. We really appreciate NASA and the community helping us out. It's that spirit of giving that enables us to help all the people that we do."

Perhaps the day was best summed up by Jane Eitel, a Safety Health and Independent Assessment directorate secretary, "It was great fun and I wasn't even sore the next day!"

Business Expo honors KSC contractors in awards ceremony

The Kennedy Space Center Business Opportunities Expo 2002 held Oct. 22 drew a number of purchasing leaders and vendors, to Cruise Terminal No. 5 at Port Canaveral. The annual trade show – sponsored by the NASA/Kennedy Space Center Small Business Council, 45th Space Wing and Canaveral Port Authority – featured 175 business and government exhibitors, including KSC (left), from Brevard and across the country. To kick off the Expo, NASA/KSC and the 45th Space Wing held a Contractor Awards Ceremony, honoring seven NASA/KSC Awardees for 2002:

- Large Business Prime Contractor: Flad & Associates and Space Gateway Support
- Small Disadvantaged Business Prime Contractor: Sierra Lobo Inc.
- Women-Owned Small Business Prime Contractor: V.A. Paving Inc.
- Small Business Prime Contractor: GeoSyntec Consultants
- Small Disadvantaged Business Subcontractor: Launch Coast Services Inc.
- Women-Owned Small Business Subcontractor: Central Data Computers
- Small Business Subcontractor: Nelson Engineering

Education Outpost dedicated to former KSC manager, space pioneer

Representatives from the Merritt Island National Wildlife Refuge (MINWR) and KSC unveil a plaque dedicating the Sendler Education Outpost, located at Dummit Cove on the refuge. Representing KSC is Acting Deputy Director JoAnn Morgan, fourth from right. The outpost is a resource for environmental education students in the Central Florida area. It is named for Karl Sendler, a space pioneer and manager under Dr. Kurt Debus, KSC's first center director. Funding for the facility was provided by the Merritt Island Wildlife Association with assistance from MINWR and Kennedy Space Center.

Super Safety and Health Day showcases

These photos taken around the Center show some of the displays and activities that attracted KSC workers during Super Safety and Health Day: from the racing auto at right to ReHabWorks below and the featured speaker John Drebinger Jr. on page 5, top right.

Workers at Kennedy Space Center and the 45th Space Wing at Cape Canaveral Air Force Station participated in the Cape Canaveral Spaceport Super Safety and Health Day, Oct. 23. The annual event is held to increase safety and health awareness among the government and contractor workforce.

The day's activities began with presentations in the Training Auditorium that were also televised.

KSC Director Roy Bridges Jr. welcomed employees with an invitation to participate in the day's events and vendor displays. Brigadier General Greg Pavlovich, commander of the 45th Space Wing, and Bryan O'Connor, NASA associate administrator, Safety and Mission Assurance, also spoke during the event.

"The safety and health of our workforce is our number one guiding principle," said Bridges. "This year's Super Safety and Health Day is a day to reinvigorate and refresh everyone at the Center with important information to enhance our safety and health program."

Nationally known safety and health communication expert John Drebinger Jr. was the keynote speaker during the morning presentation. Drebinger has helped people take personal responsibility for their own safety and health for more than 15 years. Through his use of magic and dynamic speaking, Drebinger delivered a creative presentation that kept the audience interested as well as informed about safety and health on the job and at home.

Following the morning program, space workers participated in their company's organizational training and planned activities. They were invited to visit more than 120 safety and health-related vendor displays located at the Operations and Checkout building parking lot, the Vehicle Assembly Building parking lot and Hangar T in the CCAFS.

"The Spaceport Super Safety and Health Day demonstrates the tremendous commitment to employee safety that every Spaceport organization has. This day allowed us to hear a dynamic safety speaker that had a profound impact on our safety behavior, recognized outstanding safety performance, trained employees in sound safety practices, and educated us on a multitude of safety and health topics from exhibitors," said Humberto Garrido, associate director, Safety and Mission Assurance, in the Safety, Health and Independent Assessment Directorate and this year's event chairperson.

KSC RehabWorks Supervisor Mary Kirkland (left) instructs Sheila Lyons on the use of the Shuttle 2000-1 low inertia leg press.

vendor displays, recognition for safety

The event committee also published and distributed KSC's first Safety and Health Pocket Guide that provides information about the OSHA (Occupational Safety and Health Administration) Voluntary Protection Program (VPP).

Throughout the day individuals were awarded the Super Safety and Health Day Gold Dollar Award presented by Bridges. Individual award recipients were Suzanne Stuckey, Cassandra Black, Robert Gerron, Thomas Pino, Wayne Kee, Michael B. Stevens, Rita Long, Larry Tucci, Brent Seale, Ramon Mejias, Michael Payne and Richard Carrillo.

Several contractors received Accident Prevention Awards for their exemplary safety records for no lost-time accidents. Astronauts presented the awards to Wiltech of Florida, Corp. Inc., Dynacs Inc., Dynamac, Research Planning Inc., Science Applications International Corp., Northrop Grumman IT, Troutman Technical Services Inc., and Launch Coast Services Inc.

Speaker John Drebinger Jr. (left) spoke to a standing-room-only crowd in the Training Auditorium.

Crime Prevention Presentation Yields Helpful Information

When it comes to personal safety, we all know to be aware of our surroundings, to keep our cars and homes locked even when we're inside, and to remember that an attacker can easily put on dress pants and a tie. But there are many other steps we can take to protect ourselves from violent crimes.

Bill Cain, a Gang Intelligence specialist with the National Crime Prevention Task Force, gave an informative presentation aimed at helping us avoid becoming victims. Here are some of the important but little-known tips he provided.

♦ Give attackers what they want, and get away quickly. Don't speak or fight unless they try to remove you from the first point of attack. Never go with them. "If someone threatens to harm you or your child, let them do it in the open," said Cain. "If you leave the scene, you are unlikely to survive."

♦ In public, look alert. Make brief but direct eye contact with anyone watching you. Don't enter public restrooms alone, and leave as quickly as possible.

♦ At home, change the security code on your automatic garage door opener, and keep your remote opener hidden. Install deadbolts on exterior doors, and use four-inch screws to attach the locks' strike plates. Instruct children never to tell callers or visitors when they are home alone.

♦ While traveling, never stay in a motel with doors opening out to the parking lot, or in a room on the ground floor. Be cautious – don't be lured into opening your door or leaving your room unnecessarily. Use a portable door lock on hotel room doors.

♦ If you're broken down on the highway, stay in the car, lock your doors and turn on your dome light. Call police or highway patrol first, and hang a "Call Police" sign in your *rear* window instead of the larger "Call Police" shades that may obstruct your vision. If someone offers help, stay in the car and request through the window that they call the police or highway patrol.

Exhibits, mentoring help employees understand disability issues on and off the job

Kennedy Space Center's Disability Awareness and Action Working Group (DAAWG) held a series of awareness events during the month of October with the final event held Oct. 30 in the Headquarters Building lobby from 10 a.m. to 1 p.m.

KSC workers were invited to browse the exhibits from the Space Coast Center for Independent Living and Accessible Structures to gain useful information on resources and accessibility. Other awareness exhibits were featured in the Space Station Processing Facility on Oct. 2, and in the Operations and Support Building and Logistics Building on Oct. 9.

"During the month, we provided informational brochures, pamphlets, lists of who to contact with concerns, frequently asked questions and answers and had our well-informed members available to respond to questions," said Marvin Jones, Associate Center Director and chairperson of DAAWG. "From the response we received from the workforce, this was very valuable to our employees."

The group also participated in a special event on Oct. 16, National Disability Mentoring Day. Members of the DAAWG, Nicole Del Vesco, Ed Tugg and Gabe Gabrielle, served as mentors for the day to a group of five disabled high school students at the KSC Visitor Complex. They fielded questions from the students and offered advice and insight into educational and employment opportunities for those with disabilities.

"The DAAWG is an advocacy group for KSC to eliminate barriers on the Center for workers with a disability or for visitors that have a disability. October is our month to promote awareness among KSC personnel about disabilities and what the DAAWG does for Kennedy Space Center," said event chairperson and DAAWG co-chairperson, Nicole Del Vesco.

Exhibits on Disability Awareness Day provide information on resources and accessibility.

In addition to the awareness events at KSC, several members of the DAAWG attended the World Congress and Exposition on Disabilities held at the Orange County Convention Center in Orlando, Oct. 3-5.

Their purpose was to make attendees aware of the opportunities available to them at KSC as well as to attend the many seminars and events and bring the information back to their fellow DAAWG members, space workers and directors.

The DAAWG is an advisory group to the Center Director on matters relating to employees with disabilities and a resource to the Equal Opportunity Office, Workforce Diversity and Management Office and other directorates.

For more information on the DAAWG including contact information, accomplishments and more, visit their Web site at **http://www.ksc.nasa.gov/groups/daawg/.**

Science...

Continued from Page 1

Solid-Liquid Mixtures (CSLM), will obtain growth behavior data of solid solutions in microgravity.

The second experiment using the MSG, **Investigating the Structure of Paramagnetic Aggregates from Colloidal Emulsions (InSPACE)**, will study the final, fine structure of a suspension of magnetizable particles in a pulsed magnetic field. InSPACE will help develop "smart fluids" for feedback-controlled electrical devices and mechanical components such as airplane landing gear, that require quick response times.

Some components of the **Protein Crystal Growth-Single Thermal Enclosure System (PCG-STES)** will be launched and other components returned during STS-113. They include the **Diffusion Controlled Crystallization Apparatus for Microgravity (DCAM)**, being delivered to the Station, and the **Protein Crystallization Apparatus for Microgravity (PCAM),** being returned.

Located in an Expedite the Processing of Experiments to ISS (EXPRESS) rack, these PCG-STES units provide a controlled-temperature to grow large, well-ordered protein crystals in microgravity. The objective is to grow biological macromolecular crystals to deter-mine their structure and biological processes. Understanding these structures may impact medical, environmental and other bioscience studies.

Structural studies of microgravity-grown protein crystals may provide information for the development of new drugs. For example, X-ray diffraction studies have led to more effective treatments for diabetes. Previous PCG-STES experiments focused on health issues, including virus structure and therapeutic development, the biochemistry of sickle-cell anemia, liver cell regeneration, and vaccine development.

The clear autoclaves for the **Zeolite Crystal Growth Experiment** will be flown to the ISS and samples from the experiment will be returned. Zeolites have rigid crystalline structures with honeycomb-like networks of interconnected tunnels and cages. They form the backbone of chemical processes producing or upgrading virtually all the world's gasoline. Improving zeolite crystals could increase the gasoline produced from oil. Past flights have shown larger, higher quality zeolites can grow in microgravity.

Plant Generic Bioprocessing Apparatus (PGBA) and **Commercial Generic Bioprocessing Apparatus (CGBA)** samples will return on this flight. Plants have evolved to withstand gravity's force by developing a cell wall and by producing associated structural compounds such as lignin — a natural binder. Cultivating plants in a gravity-free environment, such as the Station's, may decrease plant production of lignin and increase production of compounds with significant commercial and medicinal value.

Further comparisons of space- and Earth-grown plants could maximize various beneficial genetic traits in commercial plant species on Earth. Seeds will be germinated in space, and mature plants will be harvested from the PGBA, processed and placed in the CGBA. The CGBA will act as a refrigerator to stabilize plant material for post-flight analyses.

Microgravity's effect on lignin biosynthesis and the effect on production of related compounds will also be studied. Using the Station's unique environment to identify the genetic control mechanism involved in lignin metabolism has broad application in the pharmaceutical, timber and pulp and paper industries, and represents significant environmental and monetary value.

Crew members will also serve as research subjects. The effects of long-duration space flights on locomotor functions, and eye movements and perception will be examined.

For more information visit: **http://spaceresearch.nasa.gov/research_projects/ros/ros.html**.

NASA ships aid reef study off Florida coast

NASA and the National Oceanic and Atmospheric Administration (NOAA) and other ocean scientists worked together to study and map deep-sea corals off Cape Canaveral Oct. 15-23.

A multi-beam sonar system was used to provide the first high-resolution, three-dimensional map of the Oculina Banks. The mapping is expected to help lead to better protection of the reef banks.

Kennedy Space Center's Shuttle Rocket Booster retrieval ship, the Liberty Star, and its United Space Alliance crew and divers supported the mission.

The ship and its counterpart, the Freedom Star, are used for a variety of tasks. Marshall Space Flight Center manages the ship.

"We were more than happy to lend our assistance," said Joe Chaput, captain of the Liberty Star and manager of USA Marine Operations. "We were glad we were able to fit the mission in with our schedule, which in addition to SRB retrieval includes transporting the External Tank from Louisiana and maintaining the NOAA weather buoy."

With funding support from NOAA's National Marine Fisheries Service, the University of North Carolina at Wilmington's National Undersea Research Center (NURC/UNCW) led the eight-day expedition to map the Oculina Banks marine protected area.

The Oculina Banks deep coral reefs are unique and occur no where else on Earth, according to John Reed, co-investigator from Harbor Branch Oceanographic Institution in Fort Pierce. They are formed by a single species of coral, the Ivory Tree Coral, Oculina varicosa.

Like their shallow coral reef cousins, the reefs are a critical habitat for a wide diversity of fish and invertebrates. Popular food fish, including several species of grouper, breed on the reefs.

"Meeting the Fisheries Service's management objectives for the Oculina reserve area requires more scientific data and information about the health of the Banks, and probable causes for the loss of coral habitat," said Andrew Shepard, expedition coordinator from the Undersea Center at UNCW. "The sonar mission was an important step in gathering more information," he said.

Sonar equipment sits on deck of the Liberty Star.

The Oculina Bank survey results will be used to guide another expedition in the spring of 2003, when the reef fish spawn, again using the NASA ship, plus their underwater robot and an acoustic hydrophone system for listening to fish and vessel noise. New exploration and discoveries will be guided by the new charts.

"The Liberty Star folks were of invaluable assistance in the survey mission," Shepard said. "We are looking forward to working with them again in the spring."

In addition to operating the ship during the mission, the USA group built and installed the attachment for the sonar provided by Seafloor Systems Inc. of Oregon.

Workers on the deck of the Liberty Star, as well as divers in the water, help lower sonar mapping equipment alongside the ship. The equipment was attached to the ship's hull for an eight-day expedition surveying deep-water coral reefs on the Oculina Banks off eastern Florida. Liberty Star is one of NASA's solid rocket booster retrieval ships.

F2M. . . Continued from Page 2

scheduled three events for that day. It will start with a Town Hall meeting, which will also be televised and open to e-mail questions. This will be followed by a luncheon with NASA senior management. Then, in the afternoon, there will be workshops in each of the four functional areas.

The task force stressed that they are really looking for dialogue. This is a great opportunity for us to get some of our major issues on the table and get some help in solving them.

So be proactive. Get out and participate. This is a good opportunity, and we should make the most of it.

KSC Fitness Centers' Intercenter Walk/Run draws crowd of athletes

Scores of employees showed up Oct. 29 for the annual Intercenter 2-mile walk/run, and 5K and 10K runs at the Shuttle Landing Facility.

Remembering Our Heritage

The Shuttle goes to work for the nation and the world

Twenty years ago, a milestone was reached on STS-5, the first operational mission in the Space Shuttle Program. Columbia arrived for its first day of work right on time, launching Nov. 11, 1982, at 7:19 a.m. EST with no delays.

Columbia's previous four missions had been development flights, designed primarily to prove the Shuttle's systems.

The crew of four was the largest to launch together, as well as the first to be assigned a task for which the Shuttle was designed — the deployment of two commercial communications satellites.

Both of the satellites, the SBS-C for Satellite Business Systems and the ANIK C-3 for TELESAT Canada, had previously flown on Delta expendable launch vehicles. Taking the customers through the more complicated experience of a manned vehicle operation was quite a job.

Bill Fletcher, a lead KSC Launch Site Support manager in 1982, recalls, "The customers were used to having more time and access to their satellites when they launched on expendable vehicles. The satellites had to be ready to be transported to the pad about a month before launch, rather than a week, and once at the pad, access to them was very limited."

Also for the first time on STS-5, multiple satellites were installed into the orbiter vertically from the Payload Changeout Room.

"One of the challenges was that the satellites, on their J-hook support structure, had to be aligned mechanically with the payload bay, without the aid of the hydraulic adjustment system in use today."

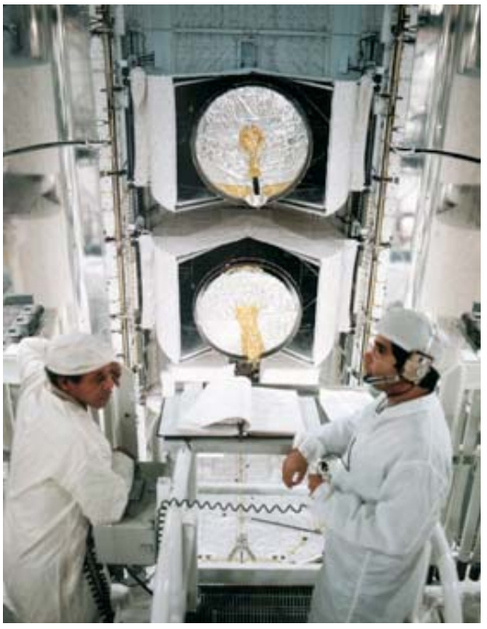
Mission Specialists Joseph Allen and William Lenoir released the SBS-C and the Canadian ANIK C-3, while Commander Vance Brand and Pilot Robert Overmyer positioned Columbia to avoid havings its windows smeared with exhaust from the satellite's engine.

Each satellite was equipped with its own Payload Assist Module-D (PAM-D) solid rocket motor, which fired about 45 minutes after deployment, placing it into the proper orbit.

In a telephone conversation with the crew, then President Ronald Reagan commented, "If more of us could see (the Earth) from that angle we might realize that there must be a way to make it as united in reality here on Earth as it looks from outer space."

Commander Brand replied, "We're in total agreement on that one."

Columbia performed like a veteran during the five-day mission and landed at Edwards Air Force Base Nov. 16. Although an inboard tire on the left side was shredded and flattened on landing by a brake jamming against it, one problem experienced on earlier flights did not reappear. Only four of the 33,000 protective tiles were damaged or came loose during reentry.



The two commercial communications satellites scheduled for launch into Earth orbit aboard the Space Shuttle on Nov. 11, 1982, are pictured in the payload bay of Orbiter Columbia, as seen from the pay-load changeout room at Launch Pad 39A. In the first use of the Shuttle to carry satellites as cargo, the Satellite Business System (SBS)-C and Telesat Canada's ANIK-C-3 rode into space inside the bay, were ejected and propelled into higher elliptical

Satellite. . .

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24th and final Lock-heed Martin Atlas IIA model launch vehicle. The on-orbit TDRS network will transmit data on the second Centaur.

The Tracking and Data Relay Satellite System is the primary source of space-to-ground voice, data and telemetry for the Space Shuttle. It also provides communications with the International Space Station and scientific spacecraft in low-earth orbit such as the Hubble Space Telescope, and launch support for some expendable vehicles. This new advanced series of satellites will extend the availability of TDRS communications services until approximately 2017.

This generation of TDRS satellites adds Ka-band capability to the TDRS fleet allowing for higher data rates using a more favorable and less heavily used frequency band. The first satellite in the current series, TDRS-H, was launched in June 2000.

John F. Kennedy Space

Spaceport News

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