

MISSION UPDATE



BACK at KSC—The orbiter Endeavour returned to KSC March 23 following its first Orbiter Maintenance Down Period at the Boeing North American plant in Palmdale, Calif. More than 2,000 parts were removed and reinstalled. Major changes to support International Space Station included installation of an external airlock and new lightweight thermal blankets that yielded a weight savings of more than a ton.

GOES-K

Geostationary Operational Environmental Satellite-K
Target launch date: April 24
ELV: Atlas I
Pad: 36B
Mission: Next-generation weather satellite providing improved weather imagery and atmospheric sounding information.

STS-84

Atlantis (19th flight)
84th Shuttle flight
Target launch date: May 15
Pad: 39A
Mission: 6th Shuttle-Mir Docking; SPACEHAB Double Module
Duration: 9 days
Crew: Precourt, Collins, Foale, Noriega, Lu, Clervoy (ESA), Kondakova (Russia), Linenger (STS-81) and Foale change places on Mir.



STS-84 Mission Specialists Elena Kondakova and Jean-Francois Clervoy stand outside the SPACEHAB Double Module during CEIT activities at the SPACEHAB processing facility at Port Canaveral. Note the technician watching the unassigned crew member, Warner Brothers cartoon character Marvin the Martian, behind them inside the module.

Spaceport News

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John F. Kennedy Space Center



MISSION cut short: The Space Shuttle Columbia roared into orbit on its 22nd flight at 2:20:32 p.m. EST, April 4, from Launch Pad 39A. Just two days later, mission managers decided to bring the seven-member crew back early due to a faulty fuel cell, marking only the third time in program history a mission has been cut short. At press time, Columbia was scheduled to land at KSC on April 8 at 2:33 p.m. EDT. On board for STS-83 mission were Mission Commander James Halsell; Pilot Susan Still; Payload Commander Janice Voss; Mission Specialists Don Thomas and Michael Gernhardt; and Payload Specialists Gregory Bristow and Roger Crouch. The primary payload of the flight was the Microgravity Science Laboratory-1 (MSL-1).

NASA/contractor team completes upgrade of gaseous nitrogen pipeline supporting KSC and Cape

A recent upgrade of the critical gaseous nitrogen (GN2) pipeline system supplying both KSC and Cape Canaveral Air Station will keep the approximately 30-year old system operational well into the next century.

The refurbishment was performed on various portions of the 32-mile pipeline, which originates at the Air Liquide plant outside KSC on State Road 3.

The team of NASA, EG&G Florida and Air Liquide Air America Corp. received a Group Achievement Award for completing the job on-time and under budget, while maintaining the GN2 supply without interruption.

GN2 may not be a topic that

sounds particularly glamorous or compelling, but it plays a vital role in both the Shuttle and expendable launch vehicle programs. The KSC/CCAS pipeline supports Shuttle, payload, Titan and Atlas facilities.

"Gaseous nitrogen creates an inert environment," explained Ralph Roe, director, Process Engineering. "We use it to purge the vehicle when we're fueling it," so it performs a launch-critical function.

GN2 also is used on communication and camera boxes around the pads to prevent condensation and corrosion.

It also protects electrical components that must be rendered explosion-proof by rendering

Daughters Day set for April 24

The fifth annual KSC *Take Our Daughters to Work Day* will be held April 24. Daughters Day is a national effort to make young women more aware of the many career choices available to them, and to enable parents, grandparents and close acquaintances to share their work day with a youngster.

Sponsors may bring more than one child, but only children nine years and older may visit the space center.

Due to limited seating, only NASA sponsors and their children may participate in the following program:

7:30 - 8 a.m., April 24, KSC Visitor Center. Gather in IMAX II Theater.

8 - 9:30 a.m. Program for

(See DAUGHTERS, Page 4)

them inert. In addition, the GN2 is used for pneumatic operation of Ground Support Equipment.

The GN2 pipeline network extends north from the Air Liquide plant, branching out into the KSC Industrial Area and extending north to the Launch Complex 39 area to support all Shuttle operational facilities, from the Orbiter Processing Facilities to the two launch pads. Air Liquide maintains the line as far as the Propellants North site off the Saturn Causeway.

The fork through the Industrial Area continues under the Banana River to Cape-side, ex-

(See PIPELINE, Page 3)

KSC gears up for Earth Day April 22

Several environmental awareness activities are planned at KSC the week of April 20 in honor of Earth Day April 22.

Earth Day was first held in 1970, an event that inspired an estimated 20 million Americans to become involved with environmental issues.

On April 22 at the KSC Visitor Center a Buy Recycled Expo '97 will be held from 9 a.m. to 3 p.m. More than 30 vendors who specialize in products incorporating recycled materials will have displays and exhibits.

Displays also will be featured around KSC in prominent locations. Employees can also contact Keep Brevard Beautiful, 639-0666, to find out about state-related activities. Keep Brevard Beautiful helped sponsor the Great Florida Cleanup last year, a volunteer event which netted more than 1,178 tons of trash and saved Florida taxpayers more than \$350,000.



TICKET TIME — KSC Director Roy Bridges snaps up the first KSC All-American Picnic ticket from ticket chairperson Diane Vess (left) and Penny Young. Advance ticket sales begin April 14. Tickets purchased before the April 26 picnic are \$3 for adults and \$2 for children 4-12 years, and include a barbeque luncheon on picnic day. Children under four are admitted free (no meal included). Tickets are \$1 more apiece when purchased at the gate on April 26.

FAREWELL HONORS — KSC Chief Counsel Mike Winchell accepts a commemorative collage April 1 from Native American Intertribal Council outgoing program directors Louise Kleba (left) and Cynthia Lomaquahu (right), as his wife Donna looks on. The KSC chief counsel since 1993, Winchell is departing April 11 to take the same post at Johnson Space Center. The Council presented him with the art in appreciation for his support of the organization over the years.



A crowd of more than 600 wellwishers gathered April 1 in the Apollo/Saturn V Center to honor Jay Honeycutt, who retired March 3 as KSC director following a lengthy civil service career.

NASA Associate Deputy Administrator Mike Mott presented Honeycutt with the Distinguished Service Medal, the highest honor NASA confers on a civil servant. The award recognizes an extraordinary contribution resulting in substantial progress to the mission of NASA in the interests of the United States.

Among the attendees were Congressman Dave Weldon, former Associate Administrator John Yardley, and many current NASA Headquarters officials and center directors.

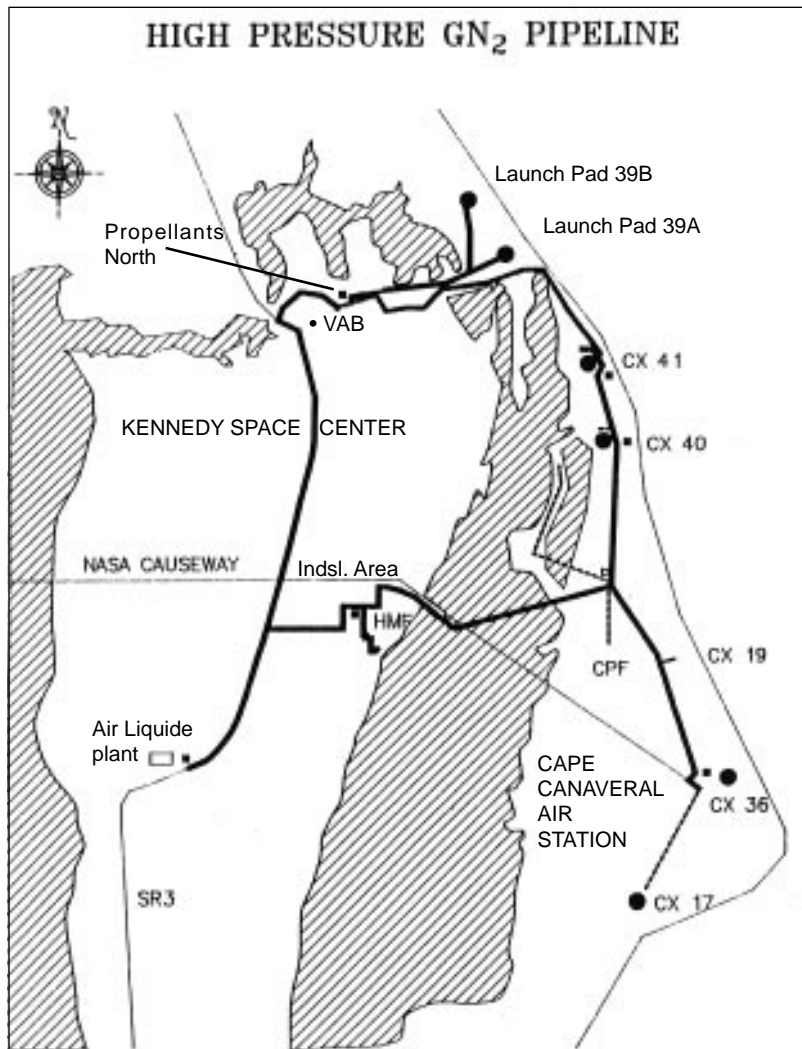
Gifts included a set of state and U.S. flags that have flown in space. There were some fun things as well, including a new set of golf clubs from senior managers and party attendees, and a Harley-Davidson motorcycle that Honeycutt's wife, Peggy, gave him as a retirement present.

JAY Honeycutt (left) and wife Peggy check out his new Harley-Davidson.

Honeycutt retirement gala draws huge crowd



JOHNSON Space Center Director George Abbey (right) was on hand to bid farewell to a former JSC coworker. Acting KSC Deputy Director Jim Jennings (center) looks on.



KSC begins transition to liquid helium conversion system

KSC — the largest federal consumer of helium — has begun a transition from receiving helium in gaseous form to receiving in a liquid state and converting it to gas on-site.

KSC uses more than 75 million standard cubic feet of helium per year, primarily to safe the Shuttle and expendable launch vehicles. At present, the helium is delivered in gaseous form via high-pressure railcars coming from a federal supplier in Texas.

A new law mandates that the government must obtain its helium from private industry, prompting the space center to

establish a new way to process it. Commercial suppliers can meet KSC's large requirement more cost-effectively by transporting it in liquid form rather than gaseous.

Sauer Inc., Jacksonville, has been awarded a contract to modify the Converter/Compressor Facility (Propellants North).

The modifications will provide the capability to accept liquid helium delivered in tankers, convert the liquid to gas and compress the gas to interface with the existing high-pressure compressor system.

On-site liquid helium storage capability will be added later.

PIGGING the pipeline (right) — The device used to clean out the GN2 pipeline is called a pig. There is no other, more official name. One possible explanation might be that the pigs root their way through the pipes, scavenging debris along the way. Here, H.T. Everett (left) and Chuck Davis of NASA Logistics hold two types of pigs, a wire brush pig (left) and a used and a clean foam pig (right). There's a pig launcher to propel the device at 25 miles per hour through the pipeline, and a pig catcher at the other end to catch it. Some 200 foam pigs and 10 wire brush pigs total — all numbered to keep track of them — were hurtled through the pipeline like little cannon balls, taking 20 minutes to complete the trip.

Pipeline...

(Continued from Page 1)

tending north to Launch Complexes 40 and 41, and south to LC 36. The LC 40/41 span extends to the Propellants North terminal, creating a complete loop. It is typically maintained as a one-directional leg, but offers vital contingency capability in the event the pipeline to the west is rendered inoperative.

In 1996, the Air Liquide plant supplied 1.6 billion standard feet of GN2 to KSC and CCAS.

The gas flows at a rate of 16,000 standard cubic feet per minute (SCFM) at a pressure of about 6,000 psi during Shuttle launch countdown.

The pipeline had not undergone major maintenance since it was installed in 1966, and it was showing signs of significant corrosion, said NASA System Engineer Chuck Davis.

One of the biggest challenges of the project was maintaining the GN2 supply while the pipeline was being repaired.

Base Operations Contractor EG&G Florida set up mobile converter/compressor units on

KSC and the Cape and during the 62-hour-long outage to repair a major portion of the KSC pipeline, and supplied 19 tanker-loads of liquid nitrogen, or about 11.7 million cubic feet of gas.

The outage also served as a useful contingency exercise in the event the nitrogen plant were to go off-line for any length of time.

Besides cleaning and repairing the pipeline, the team installed new meter station buildings, added isolation valves to relief valve headers to allow calibration without shutting down the system, and replaced nitrogen purity analyzers with state-of-the-art equipment.

In recognition of their efforts, Operations Support Branch Chief H.T. Everett selected the team for a Group Achievement Award. Recipients included Chuck Davis and Daniel Diolosa, NASA; EG&G Florida workers from Propellants North (Richard Campbell, supervisor) and Fluids Management (Glenn Ellison, supervisor); and Air Liquide employees from Merritt Island and Houston.

ACTING Logistics Director Ann Montgomery (right) presents Air Liquide Plant Manager Rudi Strickland with a Group Achievement Award for his and the company's contribution to the GN2 upgrade.



Daughters . . .

(Continued from Page 1)

NASA daughters featuring Jenny Lyons, NASA vehicle manager for the orbiter Discovery, a video featuring astronaut Shannon Lucid that was specially prepared for the event, and Misty Gentle from Nickelodeon who will discuss film industry careers.

Contractor employees should check with their public affairs office to determine what Daughters Day programs are available to them.

All contractor and NASA sponsors and daughters may attend the second program at the Visitor Center:

9:30 a.m. – Robotics demonstration by Steve Van Meter, NASA Hazardous Duty robotics specialist. The demonstration will take place between the Galaxy Theater and the pond by the Astronauts Memorial. The KSC Visitor Center spaceman also will be available in this location for a photo opportunity.

All NASA and contractor employees and their daughters are invited to take a trip to the new Apollo/Saturn V Center.

Tickets must be purchased in person April 21, 22 or 23 at Group Sales (adjacent to charter bus parking) at the Visitor Center, between 9 a.m. and 5 p.m.

Tickets for adult are \$8 and a special ticket price of \$3 is being offered for children.

Sponsors may take as many children as they wish on the tour, but no unaccompanied children will be allowed.

Visitors may stay at the new Apollo/Saturn V facility for as

long as they wish. Return buses are available every 15 minutes throughout the day.

Special Daughters Day badges will be distributed to the youngsters. Contractor workers should contact their own representatives to obtain the badges.

NASA employees can pick up their badges on April 21, 22 and 23 between 10 a.m. and 2 p.m. in Headquarters, Room 2331.

The following instructions apply to all attendees:

- Only children nine years and older are eligible to participate in KSC Daughters Day.
- Children must wear their badge and be with a badged employee at all times while on the center.
- The sponsor is responsible for the children they bring — the child may go with another person to another work site, but ultimate responsibility remains with the sponsor.
- Children may not enter any controlled access area which requires a controlled access badge. Personnel working in these areas, which include the Vehicle Assembly Building, Orbiter Processing Facilities and Operations and Checkout Building high bay, may arrange for another person to take their child to an approved area. It is important to keep in mind that Daughters Day is not the same as an employee open house.
- All KSC gates and Cape Canaveral Air Station gate 1 will honor Daughters Day badges.

A *Take Our Sons to Work Day* is planned for June 5, with details to come in a later issue.

Community Gathering

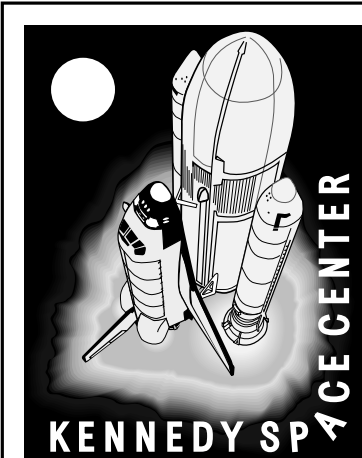


CENTER Director Roy Bridges briefs spacecoast community leaders March 26. In his first formal address as KSC director, he previewed upcoming Shuttle and expendable launch vehicle missions, described the test and checkout of International Space Station elements scheduled at KSC later this year and identified major challenges ahead. Pointing to global competition for launch and payload business, Bridges stressed the importance of KSC efforts to deliver high value to customers. He also assured the local leaders of continued KSC support for educational and community outreach efforts.

Inquiring Minds



OAKPARK Elementary School students use computer equipment donated by KSC. Oakpark, located in Titusville, is just one of the area schools that has benefitted from the surplus computer equipment program. Since the program began in 1994 under the Stevenson-Wydler Act, the space center has donated more than 14,000 items valued at \$38 million to the schools.



TAKE OUR DAUGHTER'S TO WORK DAY

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