



# Spaceport News

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John F. Kennedy Space Center



O'Keefe examines equipment from the TPSF while touring KSC.

## Administrator praises KSC for hurricane efforts

I want to extend my appreciation to Kennedy Space Center (KSC) Director Jim Kennedy and his outstanding staff for taking the necessary precautions to ensure the Center and its employees were kept as safe as possible in the face of the severe hurricanes that have lately bedeviled the state of Florida. Your dedication to the NASA Family value of Safety, under the most trying of circumstances, has been exemplary.

Last Saturday, Associate Administrator for Space Flight Bill Readdy and I took a helicopter tour of KSC; from this perspective the impact of nature's fury on the Center's buildings and facilities

was stark and dramatic.

In the days ahead, our primary concern remains the safety and well being of the entire NASA Family along the Space Coast. I recognize these storms have disrupted your lives significantly. We will certainly do everything we can to get any employee in need necessary assistance in the coming great rebuilding task ahead of us.

I'm confident that our entire Kennedy Space Center team will take on this challenge with the skill and commitment that you bring to all our mission activities.

*Sean O'Keefe, NASA Administrator*

## KSC recovers, assesses damage from Hurricane Frances

Kennedy Space Center's nearly 14,000 employees returned to work Sept. 13, following an 11-day closure of the Center for Hurricane Frances.

During the closure, the Damage Assessment and Recovery Team (DART) worked on-site to determine the extent of damage from the storm, which brought sustained winds greater than 70 mph for 30 hours and gusts as high as 94 mph.

The DART has completed its initial damage assessments, and a thorough assessment of KSC's 900 facilities and buildings is ongoing. The full assessment could take weeks or months to complete.

"We have a great deal of work in front of us," said KSC Associate Director Jim Hattaway. "We have a tremendous team dedicated to returning the Center and its facilities to a condition to support International Space Station and Expendable Launch Vehicle processing activities, as well as a safe Return to Flight of the Space Shuttle."

NASA's three Space Shuttle orbiters — Discovery, Atlantis and Endeavour — along with the Shuttle launch pads and all of the critical flight hardware for the orbiters and the International

Frances created a "window" in the south side of the VAB, stripping away more than 800 panels.



Space Station, remained well protected and sustained no damage. Also, the SWIFT spacecraft in Hangar AE on Cape Canaveral Air Force Station was placed into its shipping container before the hurricane and was unharmed.

The Vehicle Assembly Building (VAB), the Thermal Protection System Facility (TPSF) and the Processing Control Center (PCC) felt the most effect from the hurricane and received significant damage. Additionally, the Operations and

Checkout Building, Vertical Processing Facility, Hangar AE, Hangar S and Hangar AF Small Parts Facility sustained substantial damage.

The VAB lost nearly 850 aluminum panels (14 feet by 6 feet (See STORM, Page 2)



**Jim Kennedy**  
Center Director

# The Kennedy Update

**H**ello to my fellow hurricane survivors. I don't know about you, but I'm almost ready for a mini-drought. I've had my fill of high winds and pouring rain and dodging newly created sand dunes while driving on A1A. I guess it's the price we pay for living in paradise, but I think we've definitely paid our premium for the next few years.

I can't say enough about how happy I am that everyone came through the storm OK. I hope, by now, everyone has power restored and you are on your way to turning the corner on home and property repairs. I just wish I could say we are out of the woods, but our weather expert, John Madura, keeps reminding me that hurricane

season doesn't officially end until Nov. 30. So along with everything else, if you haven't restocked your hurricane supply kit, please do. As Hurricane Jeanne showed us when we thought it was coming our way, the next storm could be just around the corner.

I know I've addressed the hurricane in many other forums so I won't repeat it all here, but I do want to express that I'm extremely pleased with how fast people are finding "workarounds" for the many problems we've encountered. As an example, the people who moved into the State of Florida's Reusable Launch Vehicle hangar to accomplish TPS soft goods fabrication show a prime example of your professionalism

and creativity to get the job done, no matter what it takes. There are several other examples taking place around the Center. I, and the rest of the NASA and contractor leadership team, appreciate the hard work you're performing under these adverse conditions.

To the men and women of the recovery team who continue to labor out in the hot sun, swatting mosquitoes while helping to repair our facilities: **THANK YOU!** Returning to flight next year will not be possible without the super work you're doing right now. That is an undisputable fact that will be your legacy, and you should be very proud of your contributions.

Many people have asked what effect Hurricane Frances will have, if any, on the Space Shuttle launch date next spring. Bill Parsons, the Space Shuttle program manager, and his team are analyzing the impact now, along with anything that may have occurred at Stennis

or Marshall due to Hurricane Ivan. All of this will be discussed at the next Spaceflight Leadership Council meeting, and if the date needs to change, it'll be announced then. So in the meantime, at KSC, we need to keep plugging ahead with our RTF work to ensure

we're doing everything possible to return our Space Shuttles safely to flight next spring.

I hope you'll join me for the CFC

kick-off all hands at 10 a.m. Sept. 30 in the Training Auditorium. This year's theme is a salute to our military and I'm encouraging all of our military guardsmen and reservists to wear their flight suits or battle dress uniforms that day, so your fellow workers know you serve your country outside of the NASA family. I'm proud of each and every one of you and I would appreciate seeing you in uniform that day at the all hands, so I can fully recognize you for the

(See UPDATE, Page 3)

## STORM...(Continued from Page 1)

each) on the exterior of the building, leaving approximately 20 percent of the interior open to outside conditions. The roof of the VAB also saw considerable damage. There was no damage to the two External Tanks stored inside, or to the Columbia debris which is housed on the 16th floor of the A Tower. A thorough inspection of the damaged area is under way.

### VAB Recovery Efforts

- \* Netting was placed above flight hardware to ensure no additional debris would fall and cause damage.

- \* Roof was inspected and is safe for contractors to begin the repairs.

- \* High-crew rigging was moved to the south side for workers to begin inspection, panel replacement and repair.

The TPSF, where all of the orbiter Thermal Protection System tiles and blankets are manufac-

ured, saw nearly 35 percent of its roof removed by the high winds experienced during the hurricane. This caused significant water damage, making the second floor where the blankets are sewn unusable for processing activities and uninhabitable. Critical equipment has been temporarily relocated from the TPSF to a hangar at the Shuttle Landing Facility so processing can resume as soon as possible. The first floor of the TPSF saw some water intrusion, but none of the critical manufacturing elements, such as the ovens, were damaged. Tile manufacturing should resume as early as next week.

### TPSF Recovery Efforts

- \* Workers are currently installing a temporary roof.

- \* Clean-up and water removal activities are well under way.

- \* Grid is complete at the hangar so that workers can begin

to process TPS blankets.

- \* The equipment from the second floor, as well as the raw materials needed to manufacture the blankets, was moved to the hangar.

Another facility that saw extensive damage was the PCC. The PCC processes the Space Shuttle software, and houses numerous computers and networks for the Center. Although the facility lost a significant part of its roof and saw extensive water damage, the hurricane preparations that workers completed included plastic sheeting that helped minimize damage to electronic equipment located inside. Many employees were relocated until their offices can be returned to a safe and restored condition.

### PCC Recovery Efforts

- \* Temporary roof installed.

- \* Clean-up and water removal activities are well under way.

- \* Wet tiles are being removed

from the facility so that work stations and offices can be cleaned.

Hurricane preparations began on Aug. 30 to protect KSC facilities and flight hardware for the storm that arrived Labor Day weekend. Center Director Jim Kennedy closed KSC Sept. 2 to all but essential personnel, allowing employees to prepare their own homes and evacuate with their families if necessary. The Center remained closed until Sept. 13.

Once the hurricane had passed, DART personnel entered the Center on Sept. 6. They toured the hardest-hit facilities to make initial damage assessments and determine the steps needed to immediately secure the buildings most impacted by Hurricane Frances.

Significant work remains to fully assess the extent of damage to the total compliment of facilities, equipment and supporting infrastructure.

# USA workers save \$10 million of irreplaceable computers in Processing Control Center from Frances

By Linda Herridge  
Staff Writer

Thanks to the quick-thinking and diligent work of the Launch Processing System (LPS) workers inside the Processing Control Center (PCC), millions of dollars worth of critical LPS equipment survived the wrath of Hurricane Frances undamaged.

The PCC roof was significantly damaged. Rain poured into the building, making its way from the third floor down to the second floor, damaging ceilings, walls and floors in offices and equipment storage areas.

Several sets of LPS equipment and approximately 440 USA workers from Human Resources, Security, Information Management, Integrated Logistics and LPS reside inside the three-story PCC located in the Launch Complex 39 area.

Prior to Hurricane Frances, LPS workers powered down irreplaceable equipment, including 15 consoles and 50 racks of program-unique LPS electronic equipment, securing and covering it with plastic.

The equipment is the same type used in the Launch Control Center Firing Rooms to execute application programs for processing and launching the Space Shuttle.

After a post-hurricane review by the Damage Assessment and Recovery Team, USA facilities and



Workers on the roof of the PCC.

LPS workers quickly began removing soggy ceiling tiles and vacuuming debris-laden wet floor tiles. Power and air conditioning was quickly restored. Within 48 hours, USA had contacted the catastrophic division of First Restoration Services, an organization that specializes in water extraction and building restoration.

First Restoration Services personnel and three semi-trailers of equipment were onsite to start the process of extracting water, controlling the environment and

drying out the building. The use of desiccant dehumidification; hot, low humidity air pumped throughout the building; fans, chillers, and HEPA hospital grade air scrubbers brought the building's temperature, humidity and indoor air quality to an ideal level within a day so that restoration work could begin.

Ralph Esposito, USA director, Integrated Data Systems, said: "The USA team did a truly exceptional job of acting quickly under emergency conditions to mobilize the needed resources to

ensure preservation of the critical LPS equipment and restore the building for its residents."

Space Gateway Support made temporary repairs to the PCC roof and contracted for roof replacement. Once water intrusion is halted, the drying out process can finish and displaced personnel can be relocated to the facility. Currently, only those on the first floor have returned to the building. Second and third floor residents are temporarily relocated to LCC Firing Room 4 and the Operations Support Building.

## UPDATE...(Continued from Page 2)

tremendous service and sacrifice you give to our nation.

Additionally, Col. Susan Helms, 45th Space Wing vice commander and ex-NASA Astronaut will join us for the kickoff.

I hope everyone has seen the new Vision for Space Exploration posters going up around the Center. I encourage everyone to get a mini-poster of your own for your work area. The vision is NASA's future and the more we learn about it and make it a part of our everyday work environment, the faster we'll make it happen.

Admiral Craig Steidle, director, Office of Exploration Systems, is coming to KSC in early November to brief us on the program in detail. I eagerly await his visit and hope you will take the time to

listen to his presentation. I know it'll be enlightening for us all.

I appreciate everyone who attended the Hispanic Heritage lunch Wednesday. It was a super event with a sold-out crowd.

Our diversity at KSC is our strength; we simply wouldn't be as great as we are without everyone and their various backgrounds coming together to achieve a common goal. It was great to take the time to honor the achievements of Hispanic Americans which benefit our Agency and nation.

Keep up the great work. Please don't forget to laugh and keep your sense of humor through this difficult time. Together, as the NASA Family, we shall endure. Have a great week!

# Hurricane Frances topples KSC sites, but not spirit



**GROUND LEVEL DAMAGE:** At top, a clock lies in pieces in the TPSF. Above, the viewing stands at the SLF are upended. Below, the Florida map shows the paths of Hurricanes Charley and Frances as they crossed the state in late August and Labor Day, respectively.



### DAMAGE AND CLEANUP

At top, the DART team looks at the damage to the roof of the...  
 Above, USA workers move undamaged TPS equipment into...  
 Above right, workers clean up debris at the railroad yard.

# as workers clear debris



TPSF.

the RLV hangar, the temporary home of the tile shop.

## Kennedy Space Center's Hurricane History

### \* August and September 1964: Hurricanes Cleo and Dora keep damage to minimum

Both hurricanes caused an estimated \$360,000 worth of damage, including Launch Complex 39A, KSC Headquarters and Hangar AF on the Cape. This delayed launch of a Gemini-Titan II launch.

### \* September 1979: Hurricane David spoils Labor Day

Causing an estimated \$100,000 in damage at KSC, Hurricane David roared through Sept. 4 with estimated winds of 80 mph. A small tornado was spotted near the VAB, causing damage to its roof. Minor water damage was reported in various processing facilities.

### \* August 1999: VAB begins two-year Safe Haven project

A renovation project on the Vehicle Assembly Building's high bays 2 and 4 and the crawlerway that carries a Space Shuttle to and from the launch pad began. Contractors extended the crawler transporter pathway from the VAB's east side into high bay 2 on the building's west side. The 1,250-foot extension was topped with approximately 3,000 tons of river rock. In August 2000, while preparing Atlantis for its launch the following month, Space Shuttle managers orchestrated a move of the orbiter to the renovated west side of the VAB for a successful fit check.

### \* September 1999: Hurricane Floyd passes 121 miles east of Spaceport

With peak winds of 91 mph from the north/northwest and sustained winds of 66 mph, Hurricane Floyd caused minor damage around the Spaceport, including some VAB siding panels that were blown off of the east and west sides of the building. Pad 39B suffered damage to the weather protection that encloses the primary pad electrical system.

### \* August 2004: Hurricane Charley brushes Center

Peak winds of 87 mph hit the Center at approximately 11 p.m. and the total rainfall recorded was 2.58 inches when Hurricane Charley hit the Center Aug. 13. An iAll Clear! was declared the following morning. Center Director Jim Kennedy quickly established a Hurricane Charley Assistance Hotline to help employees who suffered hardships because of the storm. "Together, we worked our way through this challenge," Kennedy said.

# 'Walking history book' retires after 40 years

By Corey Schubert  
Copy Editor

Thomas Morrison has a tough time choosing his fondest memory during the 40 years he spent jovially greeting workers at security stations across Kennedy Space Center.

"I can't recall one memory being better than another," the security police officer said at his post at KSC Security Gate 4 on Aug. 19 with only four hours left until his retirement. "They've all been great memories."

Smiling in spite of the midday heat, Morrison didn't even glance at his wristwatch to count the short time remaining on his shift. As he shook hands with each employee who stopped to show him their badge, Morrison's favorite part of the job was obvious.

"I've made some great friends out here and I'm going to keep them," he said.

The well-tanned face of Morrison, who most employees know only as "Mo," still beams with the same love for the Space

Program he had on his first day here in September 1964. He was 27 years old and enamored with the Apollo Program, with no idea he'd be meeting most of NASA's astronauts over the next four decades.

"Mo's a walking history book," said KSC Security Officer Robert Baldree. "He's probably forgotten more than I'll ever know."

Over the years, the Space Gateway Support employee has guarded Gates 2B and 2C, which are no longer used, as well as gates to the Vehicle Assembly Building and Launch Pads A and B.

Now Morrison is looking forward to being able to sleep later than 4 a.m. during the week and spending more time with Anna, his wife of nearly 45 years. He also plans on visiting out-of-state relatives more often.

"It's going to be a great adjustment period for me," Morrison said. "I've been working ever since I was knee-high to a grasshopper."



ABOVE, KSC Security Officer Thomas Morrison checks badges on his last day at the Center after 40 years of service. At left, Morrison is pictured during his first week on the job in 1964 when he was 27 years old.

## Melendez, Potter complete NASA's leadership program

Kennedy Space Center's Dr. Orlando Melendez and Kathleen Potter are among 19 members of NASA's Leadership Development Program (LDP) who celebrated the completion of their developmental year with a ceremony at NASA Headquarters.

The program participants, who represent nine Centers, were the first graduates of the new program.

The LDP replaces NASA's Professional Development Program in support of the Agency's emphasis on improving leadership skills.

In his address to the graduates, Deputy Administrator Frederick Gregory thanked the participants for the contributions they made to the Agency as part of their developmental assignments.

He also praised the graduates for completing their class



KSC's DR. ORLANDO MELENDEZ (LEFT) AND KATHLEEN POTTER receive certificates from NASA Deputy Administrator Frederick Gregory commemorating their completion of the Leadership Development Program (LDP).

project, "Achieving Mission Success in the 21<sup>st</sup> Century Through Collaboration."

Gregory was particularly impressed the class did not recommend the Agency take on a

collaboration initiative, but instead chose to infuse what its members learned about collaboration into existing initiatives and efforts, such as One NASA.

As a result of the project, the

class identified 75 best practices for successful collaboration. A link to the full report of their findings and recommendations can be found on the Leadership Development Program home page at <http://ldp.nasa.gov>.

The goal of the LDP is to create powerful leaders who align with NASA's vision, mission and values, and who create results that matter to the American public.

Program elements include developmental assignments, a class project, individual coaching and training by NASA and outside leaders.

Participants must be grades 13-15 and are competitively selected at the Agency level.

# Stilson briefs Agency on Discovery's progress

O'Keefe appreciates Center's extraordinary efforts.

By Jeff Stuckey  
Editor

Stephanie Stilson, NASA vehicle manager for Discovery, detailed the orbiter's progress for Return to Flight during an Aug. 30 NASA Update with Administrator Sean O'Keefe.

With a live television link to NASA Headquarters that was broadcast on NASA TV, Stilson stood under the belly of the orbiter as she explained the advancements made during the spacecraft's ongoing maintenance and modification period.

Her team has installed the nose cap and forward reaction control system, removed all of the Reinforced Carbon-Carbon panels and made structural and wiring inspections throughout the entire vehicle.

"In addition to these inspections, we have performed more than 100 modifications to Discovery," Stilson said. "This ranges from something as simple as swapping out a parts tag on a wiring harness, to our most complicated modification, which is installation of the Multifunction Electronic Display System, or the 'glass cockpit.'"

Another modification provides the ability to add cooling to the International Space Station payloads while they are on the orbiter, she said.

Based on the Columbia Accident Investigation Board

(CAIB) Report recommendations, Stilson's team is also implementing Return to Flight modifications.

"We're going to install temperature and impact sensors to the wing leading edges," she said. "We're also installing a new digital External Tank separation camera that will allow the crew to downlink still images of the separation to Mission Control from orbit."

"I'm happy to say at this time that we have all of the major components back on the vehicle and we are currently in our power-up systems testing portion of the flow."

That means checking out each system to ensure it is functioning properly. "As you can imagine we have a lot of work ahead of us," Stilson said. "However, the team is focused and dedicated to safely and successfully returning Discovery to flight."

O'Keefe praised the Kennedy Space Center team for Discovery's progress.

"Every week I get an update of all the issues you are dealing with and working through in this very challenging time, but keep up the fantastic work because I know there are a lot of employees dedicated to making sure this is done right and diligently," O'Keefe said. "The extraordinary effort that I see every time I visit KSC has just been fantastic and I appreciate the effort."

View the latest version of "NASA's Implementation Plan for Space Shuttle Return to Flight and Beyond," including the status of closed-out CAIB recommendations for Return to Flight, at <http://www.nasa.gov/returntoflight>.



STEPHANIE STILSON, NASA vehicle manager for Discovery, stands under the belly of the orbiter as she explained the advancements made during the spacecraft's ongoing maintenance period. Below, workers in the Orbiter Processing Facility complete the installation of the Reinforced Carbon-Carbon panel on Discovery. The chin panel is the smile-shaped section of RCC directly below the nose cap.



## Spaceport Super Safety and Health Day scheduled

The Cape Canaveral Spaceport will participate in a full day of activities Oct. 28 as part of Spaceport Super Safety and Health Day. Initiated in 1998 to increase awareness of the importance of safety and health among the workforce, this year's theme is "Safety and Health: A Winning Combination."

"As you all know, safety and health is integral to our mission here at KSC," said Center Director Jim Kennedy. "Our number one priority

this year is to return the Space Shuttle safely to flight, and what will ensure our success is to live and breathe the safety core value. The Safety and Health Day planning committee has planned an interesting and exciting day, so enjoy, learn and most of all, think safety and health."

The event will kick off at 8 a.m. in the KSC Training Auditorium with a presentation by nationally known speaker Dr. Robert Shaw, often referred to as "Dr. Humor." For information, visit <http://safetyandhealth.ksc.nasa.gov>.



# Combat hero, KSC military reservist kick off Combined Federal Campaign

This year's Combined Federal Campaign will feature an exciting kickoff event at 10 a.m. Sept. 30 in the KSC Training Auditorium. Featured speakers are retired Army Col. Danny McKnight, whose combat duty was the basis for the book and movie "Black Hawk Down," and Army Reserve Col. Charles Gambaro, a KSC employee who recently completed a one-year tour of duty in Iraq.

Gambaro will address teamwork, which was vital to the success of his unit's mission and to the Combined Federal Campaign. A flag ceremony will be conducted by the Korean War Veterans of Brevard, Chapter 210. Other speakers include Center Director Jim Kennedy and Rob Rains, president of United Way of Brevard.

The kick off will be broadcast on NASA TV (Channel 7) and on

the KSC Internal Home Page. This year's campaign slogan, "YOU Become The Hero . . . By Caring, Sharing and Giving," was submitted by Elizabeth Valentine (UB). The CFC committee has set this year's goal at \$294,000.

In anticipation of this year's campaign, a Training Session/New Employee Orientation/Ice Cream Social will be held from 12:30 to 3:30 p.m. Sept. 22 in the O&C Building Mission Briefing Room.

During the session, Combined Federal Campaign unit coordinators and key solicitors will receive practical information needed to conduct the campaign.

The New Employee Orientation is for NASA employees (with two years of service or less) who will be briefed on the merits of the campaign, which also includes weekly incentive prize drawings, including gift certificates to the NASA Exchange.

Unit coordinators and solici-



FEATURED SPEAKERS at this year's Combined Federal Campaign kick off include retired Army Col. Danny McKnight, whose combat duty was the basis for the book and movie "Black Hawk Down," and Army Reserve Col. Charles Gambaro, a KSC employee who recently completed a one-year tour of duty in Iraq.

tors will contact employees to explain the program and offer opportunities to contribute. All

contributions will be made beginning Oct. 1 at the Web site <http://cfc.ksc.nasa.gov>.

**The annual Combined Federal Campaign contributes to worthwhile causes - locally, nationally and internationally. Employees can select up to five charities .**

## Sign language classes teach communication, deaf culture

By Linda Herridge  
Staff Writer

Kennedy Space Center's Disability Awareness Action Working Group's (DAAWG) top priorities include communication, education and awareness. In an effort to encourage communication between hearing and deaf employees at KSC, the DAAWG recently offered a series of introductory American sign language and deaf culture classes for three weeks in August.

"Many of DAAWG's objectives revolve around removing barriers that prevent employees from reaching their full potential," said Lisa Arnold of the Shuttle Processing branch. "DAAWG's education and awareness efforts help to eliminate these barriers."

The classes, offered at Headquarters and Operations Support buildings, were led by DAAWG member Arnold, with assistance from Ed Tugg in Launch Site Integration and DAAWG co-

chairperson Nicole Del Vesco of the Chief Financial Office.

Each participant received printed handouts to help as they learned the alphabet, numbers, common words, phrases and greetings in sign language.


Questions about different phrases, words and deaf culture were answered in sign language by Tugg and Del Vesco, and interpreted verbally by Arnold.

Andrew Bundy, chief of Shuttle Processing's Digital Guidance and Control Systems Branch, was among the participants. He attended the classes because one of his young sons has significant hearing loss and his wife encouraged him to attend.

Gabe Gabrielle, a project programmer with Space Gateway Support Engineering Services, has been involved with DAAWG for about three years. "I've been around people who sign to communicate and I really felt bad that I couldn't communicate with them," Gabrielle said.



PICTURED AT a recent Disability Awareness Action Working Group sign language class, from left, are Ed Tugg, Lisa Arnold, Jim Sargeant, Victor Alvarez and Tim Barth.



John F. Kennedy Space Center

## Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by External Relations and Business Development in the interest of KSC civil service and contractor employees.

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