

Spaceport News



John F. Kennedy Space Center - America's gateway to the universe

http://www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html

Explore. Discover. Understand.

Discovery flies when it's safe to fly

Effort to find a fix continues around the clock to make July launch window

At press time, Space Shuttle Program managers have continued work to determine the failure of an engine cut-off sensor problem that delayed Discovery's first launch attempt. At a July 18 news conference, Shuttle Program Manager Bill Parsons said troubleshooting was continuing around the clock.

"This team is persistent and energetic and we will conquer this problem, too," explained Program Deputy Manager Wayne Hale. "Once the problem is resolved, the next opportunity to tank the vehicle would be July 26."

He said the problem could soon be identified, and NASA managers are still optimistic about a launch within the current window, which ends July 31. Parson noted that the launch window may be extended

between two and four days, although that study was in its preliminary stage.

Following the first launch attempt, managers and engineers studied the problem with one of four liquid hydrogen low-level fuel sensors inside the External Tank. The sensor protects the Shuttle's main engines by triggering their shutdown in the event fuel runs unexpectedly low.

The sensor failed a routine prelaunch check during the launch countdown July 13, causing mission managers to postpone Discovery's first launch attempt. A dozen teams, with hundreds of engineers across the country, are working on the issue.

Once the problem is resolved and the countdown can be restarted, it will take about four days to launch. A countdown will be a complete start over at T-43 (time minus 43) hours.

Visit: <http://www.nasa.gov/returntoflight> for information about the STS-114 mission.



DISCOVERY REMAINS on Launch Pad 39B at 3:51 p.m., the scheduled time of liftoff for mission STS-114. The launch was scrubbed due to a faulty sensor reading in the External Tank during the July 13 countdown.

July 16, 2005

Space Shuttle Discovery's STS-114 Commander Eileen Collins

"My crew will maintain our proficiency for this mission. We are keeping in close touch with the troubleshooting plan; we have confidence that the best people are working it. In fact, the plan our engineers have put together is impressive, and we are very proud of the work they are doing!

"While the launch delay is disappointing, we have strong confidence that the mission will launch safely and successfully, and we fully support our NASA leadership for taking the time required to understand the problem. We thank all of you for hanging with us!"



AFTER THEIR July 9 arrival at Kennedy Space Center, the STS-114 crew talked briefly to media. At the microphone is Mission Commander Eileen Collins. Behind her are (left to right) Mission Specialist Andrew Thomas, Pilot James Kelly, and Mission Specialists Soichi Noguchi, Charles Camarda, Wendy Lawrence and Stephen Robinson.



Jim Kennedy
Center Director

The Kennedy Update

Greetings. I know to wait 29 months and to be three hours from liftoff, then have the launch of STS-114 scrubbed was a disappointment, but certainly not a failure of YOU, the team that got us there.

The commitment that NASA vowed after the Columbia accident to only launch when it's safe and to not take any unnecessary risks shined through in spades July 13. Hopefully, by the time you are reading this, our Shuttle experts will have found the problem, fixed it and returned to launch countdown mode.

If you hadn't heard, the

problem was with the Engine Cutoff (ECO) Sensor System that detects how much propellant is left in the External Tank. If not working properly, it could signal the Shuttle's engines to shut down early and the orbiter wouldn't be able to reach its proper orbit after liftoff.

The countdown's launch commit criteria calls for all four ECO sensors to be functioning at time of launch. With one not functioning properly, we scrubbed for the day.

I was extremely proud of the entire team and its performance on launch day. Team members spotted the problem early,

discussed it at great length and made the right call to scrub the launch until they figured out what is taking place.

At a press conference immediately following the scrub, senators Kay Bailey Hutchinson (R-Tex), Bill Nelson (D-Fla) and our own NASA legend John Glenn (D-OH) said they were impressed with the way the team handled the situation and threw their full support behind NASA and the Vision for Space Exploration.

Two days later, the White

"The White House Chief of Staff, Andy Card, phoned Mike Griffin to express the appreciation and support we have from the White House."

House Chief of Staff, Andy Card, phoned Mike Griffin to express the appreciation and support we have from the White House.

While the scrub may seem odd since we haven't launched in 29 months, scrubbing a launch for a mission is certainly not out of the ordinary. Even the maiden launch of Columbia for STS-1 was scrubbed the first time.

I have the utmost confidence that our team will figure out a solution for the problem and we will still launch Discovery and her crew during the July window. I ask everyone to hang in there and keep the faith. We have the greatest space team in the world right here at KSC and we are in good hands.

I know along with the Shuttle team, many volunteers from the Center helped out with the many needs on launch day, ranging from escorting VIPs and working at the Press Site, to augmenting security and safety details. It is much appreciated and we simply couldn't do it without you.

Please get some rest, as we will need you again on launch day.

Thanks everyone and please know you are appreciated.

Once again, we are only days away from witnessing a great day for the Space Shuttle Program, KSC, NASA and the United States of America.

GO DISCOVERY!

Shuttle Launch Experience part of Visitor Complex plan

By *Jeff Stuckey*
Editor

When the Kennedy Space Center Visitor Complex opens the 44,000-square-foot Shuttle Launch Experience in early 2007, guests won't have to battle silly looking aliens. Instead, this simulator will take guests on an incredible journey only astronauts have experienced: launching into orbit aboard a Space Shuttle.

"It's not a thrill ride," said Dan LeBlanc, chief operating officer of the Visitor Complex. "You won't be dodging asteroids or battling any aliens. We have worked hard to ensure that it is as close as you can be to simulating the reality of a Space Shuttle launch within the confines of Earth's gravity."

The Shuttle Launch Experience is the first project in a 10-year development plan for the

Visitor Complex. Three veteran Shuttle astronauts, including Rick Searfoss, played a key role in designing the simulator and provided feedback to the rest of the design team.

The new attraction will be located in the northwest corner of the main complex, where construction has already started. The \$60 million project is funded through revenue generated by visitor admission, food and retail sales at no taxpayer expense.

The journey will begin when visitors enter a gantry-styled walkway into a building architecturally inspired by Space Shuttle processing facilities at KSC. Dramatic sound and lighting effects, rumbling floors and fog dramatize the moments before launch. Guests will board the mock-up Space Shuttle and strap in for launch in a unique motion simulator designed to bring the mission alive by



replicating the sights, sounds, G-forces and rattle of liftoff. The sensations of launch continue as they experience Max Q, the zone where enormous forces squeeze the Shuttle, Solid Rocket Booster separation, main engine cut-off and the External Tank separation.

Florida Lt. Gov. Toni Jennings discussed what the new attractions means to the state at the unveiling ceremony.

"It's a pleasure to be here for many reasons, but mostly as someone who was born and

raised in Central Florida, who watched many shots go up in the air," said Jennings. "Florida has earned its reputation as the place for space and if you look at the back of a Florida quarter, you will see it reads, 'Gateway to Discovery.' It wasn't just those Spanish galleons; it was, in fact, those launches right down the road."

The KSC Visitor Complex's decade-long, \$160 million plan will usher in nine new exhibits, plus new and enhanced visitor amenities.

STS-114 Return to Flight crew bravely approaches first launch attempt



CENTER DIRECTOR Jim Kennedy welcomes STS-114 Mission Commander Eileen Collins to the Center four days prior to launch.



THE RETURN to Flight STS-114 crew exits the Operations and Checkout Building for the ride to Launch Pad 39B. On the left column, front to back, are Pilot James Kelly and Mission Specialists Wendy Lawrence, Charles Camarda and Andrew Thomas. On the right column are Mission Commander Eileen Collins and Mission Specialists Soichi Noguchi and Stephen Robison.



AT THE Shuttle Landing Facility, STS-114 Pilot James Kelly and Mission Commander Eileen Collins join support personnel after completing practice runs on the Shuttle Training Aircraft, which is a modified Grumman American Aviation-built Gulf Stream II executive jet that was modified to simulate an orbiter's cockpit, motion and visual cues, and handling qualities.



THE STS-114 crew sits for the traditional launch day breakfast in the Operations and Checkout Building. Seated left to right are Mission Specialist Wendy Lawrence, Pilot James Kelly, Mission Specialist Soichi Noguchi, Mission Commander Eileen Collins, and Mission Specialists Andrew Thomas, Stephen Robison and Charles Camarda.

With the world watching, NASA scrubs



DURING SUNRISE at Kennedy Space Center, Miles O'Brien (left), co-anchor on CNN's *American Morning*, talks on air with NASA Administrator Mike Griffin about the pending launch of Space Shuttle Discovery on the historic Return to Flight mission. Above, O'Brien interviews Patrick Young, husband of STS-114 Commander Eileen Collins.



MATTLAUER (left), co-anchor of NBC News' *Today*, talks with NASA astronaut Pam Melroy about the scheduled launch of Space Shuttle Discovery. The interview was held on the set of the NBC News Building located at the KSC Press Site. Melroy has flown on two missions, STS-92 and STS-112.



LLOYD PIERCE, a NASA test engineer, checks electronic components related to the faulty sensor readings in the liquid hydrogen tank low-level fuel cut-off sensor. The sensor failed a routine prelaunch check during the launch attempt July 13.



NASA SPOKESMEN prepare to answer questions from news media gathered in the NASA Newsroom to cover the countdown for the launch of Space Shuttle Discovery. More than a thousand media representatives from 36 states, the District of Columbia and 32 countries converged on the news center.



GARY KING helps test electronic components related to the faulty sensor readings in the liquid hydrogen tank low-level fuel cut-off sensor.



Scrubs first STS-114 launch attempt



...), co-anchor on CNN's...
...ffin about the pending...
...t mission. Above,
...der Eileen Collins.

...LOYD PIERCE,
...NASA test
...engineer, checks
...electronic
...components
...related to the
...duity sensor
...readings in the
...fluid hydrogen
...tank low-level
...level cut-off
...sensor. The
...sensor failed a
...routine prelaunch
...check during the
...launch attempt
...July 13.



SONIA TUBIOLO (above right) and Karen Symons stand next to a small memorial to fallen astronauts near the Operations and Support Building. The display was put together by workers from United Space Alliance and InDyne after the Columbia disaster in 2003. A new sign was also erected (left) supporting the astronauts of the STS-114 mission.



Columbia families show support for Return to Flight



DON BROWN (left), brother of STS-107 member Dave Brown, and Jon Clark, husband of STS-107's Laurel Clark, at the NASA News Center.

As NASA prepares to launch the Shuttle Discovery, we, the Columbia Families, would like to show our support for the STS-114 crew and all the dedication and talent of those who supported this Return to Flight effort. We have had two and one half years to reflect daily on the loss of our loved ones as the Shuttle Columbia (STS 107) broke apart over Texas on February 1, 2003.

In the aftermath of the Columbia tragedy, we saw our nation's space program reinvent itself. The extraordinary efforts of local, state and national organizations involved in the recovery effort, the Columbia Accident Investigation Board, the Return to Flight Task Group and all the NASA and aerospace industry work force implementing the Return to Flight effort have clearly done an exemplary job in defining and reducing the technical risk as much as possible.

As the families of Apollo 1 and Challenger before us, we grieve deeply but know the exploration of space must go on. We hope we have learned, and will continue to learn, from each of these accidents, so that we will be as safe as we can be in this high-risk endeavor.

As important as solving the technical risk is, we must be vigilant to ensure the organizational and cultural issues that contributed to Apollo, Challenger, and Columbia are forever remembered. Under the leadership of the new NASA Administrator, we have every confidence that the sacrifice of our loved ones and those that preceded them will be realized for the benefit of all humankind.

Godspeed Discovery.



THE ASTROVAN (on the road at the bottom center of photo), carrying the STS-114 crew, drives back from Launch Pad 39B after the scrub of the Return to Flight mission. The center of the photo shows the NASA News Center surrounded by trailers, satellite trucks and vehicles of the media.

Higginbotham's favorite memories happen after launch

By Jeff Stuckey
Editor

One of Scott Higginbotham's favorite moments takes place long after launch.

Sure, everybody loves the sights and sounds of a Space Shuttle launching from the pad, but Kennedy Space Center's International Space Station manager enjoys relaxing on his couch at home and watching the payloads he processes as they exit the payload bay doors.

"When I go home after launch, and I'm exhausted and drained, I sit down on the couch and turn on NASA Television," Higginbotham said. "Usually the timing's about right, when the payload bay doors come open, and there it is. There's that spaceship I helped build, and it's now circling the Earth - 17,500 miles an hour. You know, it just gives me goosebumps talking about it."

Higginbotham leads the team of engineers and technicians that assembled and tested all of the International Space Station hardware that Discovery will take to the Space Station. He works with some interesting and

talented people, including his wife, Bridgit.

"I have two passions in my life," he said. "One is my family, and the second is my work. And so I'm really blessed in that regard, because I have the best of both worlds."

His first job at KSC was as an External Tank mechanical systems engineer. For several missions, Higginbotham helped build, manage and operate a series of infrared cameras that were used to take measurements on the External Tank while it was fueled for launch.

He also was part of the team that analyzed all of the videos and films taken during launch and landing.

Although each mission contains special memories, two moments stand out as Higginbotham's favorites. The first was the STS-99 mission, the first Shuttle mission after the turn of the century.

That was the Shuttle Radar Topography mission which, in the span of 11 days, mapped the majority of the Earth's land mass. "The outcome from that mission will be used by generations and generations to come," Higginbotham said. "I feel so



SCOTT HIGGINBOTHAM (third from left), the STS-114 payload manager, takes part in a Space Shuttle countdown status briefing along with, from left, Bruce Buckingham, NASA news chief; Jeff Spaulding, NASA test director; and Kathy Winters, Space Shuttle weather officer.

proud of that, because it will touch lives now and in the future."

But from a sentimental point of view, his favorite was STS-90, which was space life sciences mission Neurolab. Higginbotham was the payload manager for the mission and Bridgit was the launch site support manager.

"We worked side by side on that flight," he said. "During the processing for that mission, she

became pregnant with our twins. I announced their pending arrival for the first time as part of my final readiness poll before launch over the headset.

"Getting to sit there in the firing room with your best friend and hold her hand, and to watch something that you've worked on together for so long rise into space was a really special day."

Closing the hatch: Arriëns one of last to see astronauts

By Anna Heiney
Staff Writer

René Arriëns knows the mix of excitement and tension the STS-114 astronauts will feel as they make their way to the Space Shuttle Discovery on launch day.

He's stood at the base of the launch pad and looked up to see the Shuttle looming above. He's navigated through the shroud of cool mist hovering above the "yellow brick road," the egress route painted on the walkway leading to the White Room, where the astronauts board the Shuttle. He's grown accustomed to the strange sound effects made by the pad's metal structure as it comes into contact with chilled air, cooled by the super-cold propellants within the Shuttle's



IN THE White Room on Launch Pad 39B, STS-114 Mission Specialist Stephen Robinson has completed adjustments to his launch suit with the help of the Closeout Crew around him, including from left, René Arriëns, Dennis Sparks, Tim Seymour and Travis Thompson.

massive External Tank.

Arriëns isn't an astronaut. But as a Shuttle Closeout Crew

member with United Space Alliance (USA), he is one of the last people the STS-114 crew will

see before they leave Earth for the International Space Station.

On launch day, the seven members of the Closeout Crew help the astronauts strap into the Space Shuttle's crew module and take care of any other last-minute needs that arise. Ultimately, they close and seal the crew access hatch and leave the astronauts behind.

This elite team comprises two USA suit technicians from Johnson Space Center in Houston, along with an astronaut support person, an active astronaut who is not on the flight crew. There are three additional USA employees from Kennedy, as well as a NASA quality inspector.

Along with his teammates, Arriëns begins work long before **(See CLOSEOUT, Page 7)**

Helpful public affairs team shares the NASA story with guests

By *Charlie Plain*
Staff Writer

When Space Shuttle Discovery roars to life for its Return to Flight mission, more than 14,000 awestruck spectators are expected to watch the launch from within Kennedy Space Center.

Feeling the ground shake with them will be members of the Center's specially trained hosting group, the Public Affairs Tiger Team. It's the job of the Tiger Team to offer help and hospitality to guests visiting the Center to watch Space Shuttle and rocket launches.

"They act as hosts and hostesses. In a lot of cases, they are the first and only NASA people that some of these spectators ever come in contact with," said Laurel Lichtenberger, launch viewing sites manager and the team's coordinator.

Team members are easily recognized by their sunny smiles and patriotic red, white and blue shirts. During launches, they assist guests watching from the Center's Banana Creek, NASA Causeway and employee viewing sites. The volunteers provide safety oversight, crowd control



NANCY BRAY (left) and Vickie Hall are two members of the Kennedy Space Center Public Affairs Tiger Team, who act as hosts to launch-viewing guests.

and launch information for the thousands of people who turn out on launch day.

The team is made up of employees from throughout the Center. Lichtenberger said although their professional jobs differ, team members share a common reason for volunteering.

"These folks love to do this because they love the space program and, for some, it's a change from their everyday job." Lichtenberger maintains a list of

about 100 employees willing to chip in and offer their time for launches.

"More than half of my volunteers will be helping with Return to Flight." Two volunteers welcoming spectators for the historic flight are Vickie Hall and Nancy Bray. Both women work in the Center's information technology department - a virtual world away from the Space Shuttle launch pads.

Hall serves as the backup

manager for the launch viewing sites, working at Banana Creek on launch day and at the orbiter runway during landings. She's also a longtime veteran of the group. "I've been doing this since Skylab in 1972. For Shuttle missions, I think I've missed one launch and one landing," Hall said.

Bray joined the hosting team at Hall's urging. "I've been doing this since 1999, when Vickie called me because they were short on people. I said, 'Sure, why not,' " said Bray.

For Bray, mixing with guests makes her launch day. "I enjoy watching others see a launch for the first time" she said. "I meet people from everywhere, and it reminds me that the Shuttle Program reaches out all over our country and other countries."

As experienced as the Tiger Team is, the group never seems to lose its enthusiasm for a launch. Perhaps it's the continual thrill of witnessing America's bold reach into space.

Whatever the reason, being there for liftoff always leaves volunteers like Bray ready for more. "It doesn't matter how often you see a launch, it's still exciting."

CLOSEOUT ...

(Continued from Page 6)

the day of liftoff. As a spacecraft technician and operator, the busiest time begins when the orbiter is mated to the External Tank and twin Solid Rocket Boosters, and the pace picks up when the assembly reaches the launch pad.

"When there's a Shuttle on the pad, the orbiter forward crew module is my work area," Arriëns explains.

He and his colleagues spend so much time at the pad that they've become intimately familiar with the pad's structure, the various pad facilities that support the orbiter, and even the orbiter itself. This expert knowledge serves the Closeout Crew well when launch day arrives.

They gather about three hours before they're due at the launch site to prepare their emergency air rescue packs and make sure their communications equipment is working properly. During the T-3 hour built-in hold, they ride to the pad in a van specially equipped to meet virtually any need.

After the elevator ride up to the 195-foot level, they arrive in the White Room, an environmentally controlled chamber that provides access to the crew module.

Due to the White Room's small size, there's only room for one or two astronauts at a time. With assistance, each member of the flight crew dons a parachute pack and crawls through the open hatch and into the Shuttle.

It's important to Arriëns and

his colleagues that they make each astronaut as comfortable as possible, from keeping them cool inside their bulky suits to braiding their hair to keep it from getting stuck in the suit collar.

Once the crew is safely inside, the Launch Control Center gives the Closeout Crew a "go" to close the hatch. They'll check the hatch seal for leaks and wait about 20 minutes to ensure the pressure remains at the proper level.

Then it's time to retract the White Room, leaving the astronauts on their own as the countdown clock marches toward liftoff. The Closeout Crew members depart the pad for a fallback area about three miles away, where they listen in on the countdown and watch the launch.

As the launch of Space Shuttle Discovery draws near,

Arriëns looks forward to the emotional release of finally seeing the liftoff - especially after two years of hard work and personal sacrifice on the part of the entire Space Shuttle team.

"It's one team and one mission, contractor and NASA alike, and everybody's focused on getting it right and flying it right and doing it right the first time."

View the color edition of *Spaceport News* at http://www.nasa.gov/centers/kennedy/news/news/spnews_toc.html

New control tower ready for historic Space Shuttle landing

By Jeff Stuckey
Editor

Rising 110 feet over the midpoint of the Shuttle Landing Facility (SLF) runway, the new NASA control tower will be a focal point for the world when Space Shuttle Discovery lands at the completion of mission STS-114.

The new tower and SLF Media Operations Facility were formally unveiled in a ribbon-cutting ceremony July 8 by members of NASA management and contractors.

The tower will manage all landings and departures from the SLF, including air traffic within Kennedy Space Center and Cape Canaveral Air Force Station restricted air space. A 24-hour weather observing facility at the tower provides official hourly weather statistics for the SLF and Cape Canaveral spaceport, including special observations for all launches and landings.

Tower personnel can also control access to the SLF runway, ground traffic, runway lighting, navigational aids and the gate. In addition, the Media Operations Facility, complete with private conference rooms and offices, are located on the ground level of the new building.

"We're here to celebrate the opening of this tower as we prepare to utilize this facility for the upcoming launch of STS-114," Center Director Jim Kennedy said. "This tower represents a significant upgrade, not only for the airfield, but for the airspace in which our people fly. I see three of our NASA core values at work today.

"Safety, particularly aviation

safety, will be enhanced by this facility and the people who operate it," he said. "Next, the NASA Family will operate this facility for us, and it is a demonstration of how to treat your people right by giving them a first-class facility in which to do their work."

The third value being demonstrated through the facility is Excellence, Kennedy said.

"An awful lot of excellence went into designing this facility and upgrading to the latest state-of-the-art technologies. What

a great day it will be when we see the Space Shuttle land at this wonderful new facility."

Also taking part in the ribbon cutting were: Albert Taff, KSC safety aviation officer; Lisa Malone, director of External Relations; Scott Kerr, director of Center Operations; and Bill Sample, president of Space Gateway Support.

In addition to being the primary landing site for NASA's Space Transportation System, the SLF serves as the focal point for Shuttle Training Aircraft activities and is used by the astronauts when flying their T-38 jet trainers. It is also used for payload and flight hardware deliveries and by executive aircraft for NASA management and VIPs visiting KSC.



THE NEW Air Traffic Control Tower at the Shuttle Landing Facility rises 110 feet over the midpoint of the runway. Below, dedicating the new NASA Air Traffic Control Tower at the Shuttle Landing Facility, from left, are: James Jones, Space Gateway Support President William Sample, Center Director Jim Kennedy, External Relations Director Lisa Malone, Center Operations Director Scott Kerr, and KSC Safety Aviation Officer Albert Taff.



NASA solicits landing facility requests

NASA recently issued a formal request for expressions of interest by non-NASA organizations, including commercial space companies, to use the Shuttle Landing Facility (SLF). The announcement is the first step in considering how and when NASA can expand access to available capacity at the SLF by government, commercial and academic organizations. The request is a part of NASA's ongoing efforts to support the President's Management Agenda and the U.S. Space Transportation Policy. Organizations have until Aug. 30 to respond with detailed expressions of interest. Visit <http://prod.nais.nasa.gov> for information.



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 in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, IDI-011. E-mail submissions can be sent to Jeffery.Stuckey@ksc.nasa.gov

Managing editor..... Bruce Buckingham
Editor..... Jeff Stuckey
Copy editor..... Corey Schubert

Editorial support provided by InDyne, Inc. Writers Group.
NASA at KSC is located on the Internet at <http://www.nasa.gov/centers/kennedy>
USGPO: 733-049/60086