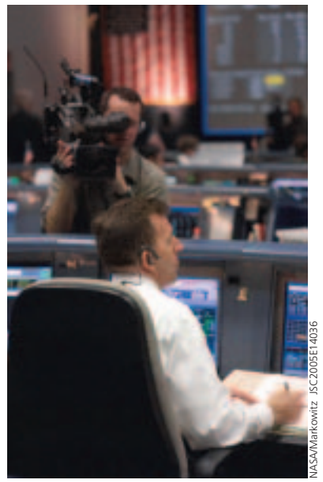
Media day

NASA/Blair JSC2005E14219



NASA/Markowitz JSC2005E14036

NASA/Blair JSC2005E13836

Dozens of reporters, photographers and videographers descended upon Johnson Space Center during the week of April 4 for a series of STS-114 media briefings. The events included press conferences, crew interviews, exhibits and training demonstrations, all designed to help the media relay the Return to Flight story to the public.

Space Center Roundup

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First we crawl, then we fly

Space Shuttle *Discovery* approaches the Rotating and Fixed Service Structures on Launch Pad 39B after rollout from the Vehicle Assembly Building. First motion began at 2:04 p.m. EDT April 6, and the Shuttle was hard down on the pad at 1:20 a.m. EDT April 7. The Shuttle sits atop the Mobile Launcher Platform and is transported by the Crawler-Transporter underneath. Launch of *Discovery* on its Return to Flight mission, STS-114, is targeted for May 15 with a launch window that extends to June 3. During its 12-day mission, *Discovery*'s seven-member crew will test new hardware and techniques to improve Shuttle safety, as well as deliver supplies to the International Space Station.

Explore. Discover. Understand.

May 2005
Houston, Texas

Beak sends...

A MESSAGE FROM CENTER DIRECTOR LT. GEN. JEFFERSON D. HOWELL JR.

Coping with stress

JSC has always been a place of high energy, high stakes and high stress. It's the nature of the beast. Giving people the ability to go into space, operate there and then return safely demands the highest in performance by all involved with little tolerance for error. That's the way it has to be and that causes stress for all involved.

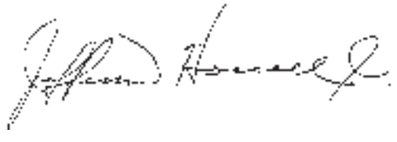
Add the *Columbia* tragedy, the following investigation and recovery, the Return to Flight activities, the uncertainties associated with the Exploration initiative, a change in Administrators and the hurdle of getting everything done for launch. Total all that up and the stress meter is definitely pegged to the right!

It's obvious that stress is and will remain a significant part of our environment. All of us need to acknowledge this fact and then learn to deal with it. If you don't, it can destroy your health. Hypertension, irregular heartbeat, inability to sleep, loss of appetite and depression are just a few examples of the unhealthy ramifications of not coping with stress.

There are many ways to reduce the negative aspects of stress. I have personally found that regular exercise, a brisk walk each morning accompanied by calisthenics, is a great way to clear the cobwebs in my brain and relieve personal pressure. Meditation, group activities, volunteer work, playing sports, seeking counseling and proper diet are just a few examples of how one can counter the negative aspects of stress. We have a great team of medical, physical fitness and counseling professionals here at JSC who are ready to help you find your own special way to relieve some of the stress in your life. Please seek their assistance.

We all owe it to ourselves, our families and our colleagues to maintain our good health. To do so we must first admit that we are being affected by our stressful environment and then take the necessary measures, including setting aside the necessary time each day, to cope with it. Let's go for it!

IT'S GREAT TO BE ALIVE AND IN HOUSTON!



For information on managing stress and taking care of your health and family, contact:

Employee Assistance Program, 281/483-6130
Wellness Coordinator, Jennifer Blok, 281/483-0317
Stress Management Resources: http://ks.jsc.nasa.gov/thh/stress.htm

Shuttle Training Aircraft preps astronauts for landing

Test drive

by Kendra Phipps

NASA S97-15611

The Shuttle Training Aircraft is used to teach astronauts to land the Space Shuttle.

How do you help astronauts feel like they've landed the Space Shuttle hundreds of times without actually using a Shuttle?

That is one task given to research pilots at Johnson Space Center. They take the sleek Shuttle Training Aircraft (STA) and use it to train astronauts to land the massive-by-comparison Space Shuttle.

"Astronauts only get one try to land the Shuttle; it lands as a glider," said Research Pilot "Triple" Nickel. "We use the very slick, sports car-like feel of the STA to simulate the 'falling brick' of the Space Shuttle."

According to astronauts who have flown both, the STA gives a remarkably good simulation of a landing Shuttle.

"The STA is great! It flies very closely to the actual orbiter," said STS-114 Commander Eileen Collins. "The handling qualities are close enough that we have no problems transitioning from training to the real thing."

The STA is a "highly modified Gulfstream-2 aircraft," Nickel said. The plane's cockpit has been adapted to closely resemble a Shuttle flight deck; the left-hand seat features the same hand controls that a Shuttle commander uses during a mission. Several passenger seats in the back of the aircraft have been replaced by a bank of Shuttle-simulating computers.

"When a pilot flies the aircraft, he's actually flying a computer model of the Shuttle," Nickel said. NASA has four of these customized aircraft, most of which are kept at the NASA Forward Operating Location in El Paso, Texas. The fleet is rotated through Ellington Field for maintenance as needed.

Most of the STA training takes place at the White Sands Space Harbor, a part of the White Sands Test Facility in New Mexico. The location is ideal because it not only has an actual Shuttle landing strip – an STA training requirement – but it provides more remote, undisturbed airspace than its counterparts at Kennedy Space Center in Florida and Edwards Air Force Base in California.

Astronauts are shuttled to El Paso on another NASA training aircraft, the T-38. Each STA training session includes 10 approaches and landings. After a session, the training crew refuels the aircraft, picks up a different astronaut and begins again.

"STA training is all about producing a familiar path through the sky for the astronauts," Nickel said. "No matter the height of the astronaut, we put their eyes at a consistent height so when they fly the Shuttle, the view looks familiar. We even mask off the windows to match the view from a Shuttle."

The STA flies at the same speeds, dive angle and approach trajectory as the Shuttle. But simulating that "falling brick" feeling is a delicate maneuver.

"To accomplish that, we lower the main gear of the STA and put the engines in reverse thrust," he said. "You know when a commercial plane lands and you're thrown forward after the wheels touch down? We do that at 30,000 feet."

Prior to a Shuttle mission, a commander has to complete 1,000 STA landings. The STS-114 Commander and Pilot, Eileen Collins and Jim Kelly, will continue STA training on a weekly basis until launch. Such thorough practice leads to confident astronauts and successful Shuttle landings – not to mention great feedback for the STA teams.

"Shuttle astronauts come back and tell us it felt like they had done it a thousand times before," Nickel said.

"It is some of the best training we have," Collins said.