NASA Space Shuttle Atlantis to Continue Assembly of International Space Station on 10-day Mission

A new "glass cockpit" that increases Shuttle safety by improving the display of key information about ascent and entry mission performance is one of more than 100 significant improvements Space Shuttle Atlantis will debut during its upcoming mission to the International Space Station (ISS). The Shuttle is set to lift off from NASA's Kennedy Space Center at 4:15 p.m. EDT today.

STS-101/2A.2a is a 10-day trip and the first ISS mission this year. More than 3,000 pounds of hardware and supplies will accompany Atlantis when it begins its ISS journey to make final preparations for the arrival of the Russian service module, Zvezda. One priority of the astronaut crew will be to address power system issues on ISS. The crew will replace batteries and related components in Zarya, the current orbiting Russian module's electrical power system, bringing the system back to full capacity and putting ISS in optimum operational condition.

This will be Atlantis' first mission since September 1997, following a major maintenance and upgrade overhaul performed during a 10-month stay at the Boeing Assembly, Integration and Test Center at Palmdale, Calif.

The most obvious change to Atlantis is the replacement of the old cockpit -- 32 gauges and electromechanical displays and 4 cathode-ray tube displays -- with a glass cockpit, known as the Multifunction Electronic Display Subsystem (MEDS). The new cockpit has 11 full-color, flat-panel display screens, which display color-coded systems data in compact two- and three-dimensional formats. It's also 75 pounds lighter than the old cockpit and uses less power.

Stan Albrecht, Boeing vice president and Shuttle program director, points out that "MEDS is a much more efficient way to present flight data and provides an improved capability for astronauts to quickly recognize problem areas and take necessary actions."

Each Shuttle is scheduled to receive a glass cockpit by 2003 (Columbia is in Palmdale now, having one installed, along with other improvements). MEDS is the predecessor for a "smart cockpit," which will reduce pilot workload during critical periods and is scheduled for installation in all Shuttles in the future.

Other improvements in Atlantis include an update to the communications system; enhancements to the cooling system; strengthening of the crew cabin floor; and a relocation of the airlock to the payload bay to prepare for ISS assembly flights.

"These modifications are part of a continuing set of enhancements to improve the safety and reliability of the Shuttle fleet as we move into a new decade of operations," Albrecht said. Since 1992, improvements in the Space Shuttle Main Engines and other systems have reduced the estimated risks during launch by more than 80 percent, and the annual cost of operating each Shuttle has decreased by 40 percent. In addition, the Shuttle's cargo capacity has increased by eight tons.

The seven-member crew for this mission includes Commander James D. Halsell, Pilot Scott J. Horowitz, and Mission Specialists Mary Ellen Weber, Jeffrey N. Williams, James S. Voss, Susan J. Helms and Yuri V. Usachev, Russian Space Agency.

Pending an on-time launch, Atlantis is scheduled to land at 12:44 p.m. EDT on May 4 at the Kennedy Space Center.

Boeing Shuttle Web Site

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