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NEW SPACE SHUTTLE EXTERNAL TANK
READY TO LAUNCH SPACE STATION ERA

A significant achievement toward the first launch of the International Space Station will be unveiled Friday. The Space Shuttle's first new, super lightweight external fuel tank will roll out during ceremonies at NASA's Michoud Assembly Facility in New Orleans, LA.

In order to launch the Space Station to its on-orbit location, "the Space Shuttle system needed additional performance Ñ either through more power or less weight," said Parker Counts, manager of the External Tank Project at NASA's Marshall Space Flight Center, Huntsville, AL.

"Since each pound removed from the external tank equals a pound of payload that can be carried into space," Counts said, "NASA developed the super lightweight tank." The new external tank is the same size as the one currently used on the Space Shuttle --but about 7,500 pounds lighter.

The largest single component of the Space Shuttle, the 154-foot-long external tank stands taller than a 15-story building and is as wide as a silo with a diameter of about 27 feet. The external tank holds the liquid hydrogen and liquid oxygen propellants in two separate tanks for the Shuttle's three main engines.

The two major changes to the external tank involved materials and design. Both the liquid hydrogen tank and the liquid oxygen tank are constructed of aluminum lithium Ñ a lighter, stronger material than the metal alloy used for the Shuttle's current external tank.

The tank's structural design also has been improved. The walls of the redesigned hydrogen tank are machined in an orthogonal waffle-like pattern, providing more strength and stability than the previous design.

Following Friday's rollout, the tank will be shipped by barge from Louisiana to Kennedy Space Center, FL, for its first launch scheduled in May on STS-91. The new design will not affect the assembly process when the orbiter is mated to the external tank and solid rocket boosters.

The Shuttle's current external tank and the new, super lightweight tank are manufactured by Lockheed Martin at the

Michoud Assembly Facility. Marshall provides the external tank, main engines and solid rocket boosters, including the reusable solid rocket motors, for every Shuttle flight.

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Editor's note: Photos and video supporting this release are available to media representatives by contacting June Malone, Media Services Office, Marshall Space Flight Center, 205/544-0034.