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NASA Takes Delivery of 100th Space Shuttle External Tank

It's been the backbone of the Space Shuttle for 18 years, and now the 100th Space Shuttle external fuel tank has been delivered to NASA.

NASA and Lockheed Martin Michoud Space Systems in New Orleans, builder of the Shuttle external tanks, will commemorate delivery of the tank in a ceremony this week at Michoud Space Systems. NASA's Marshall Space Flight Center in Huntsville, Ala., manages the tank program.

"Delivery of the 100th external tank is a major milestone for NASA's Space Transportation System," said Parker Counts, manager of the External Tank Project Office at Marshall. "Flying safely is the top priority of NASA and the Shuttle program. Not only has the external tank successfully performed as designed on every launch, but our government and industry team has been able to help enhance the Shuttle's performance by lowering the weight of the tank."

In two separate pressurized sections inside, the external tank holds 535,000 gallons of liquid hydrogen and liquid oxygen propellants for the Shuttle's three Main Engines — enough to fill more than 16 20-by-40-foot backyard swimming pools. The propellants are consumed in about 8.5 minutes. The Shuttle jettisons the tank at an altitude of about 70 miles. The tank falls back to Earth, disintegrating in the atmosphere over the ocean.

The giant cylinder is taller than a 15-story building, with a length of 154 feet (47 meters) and as wide as a silo with a diameter of 27.5 feet (8.4 meters). The largest single piece of the Space Shuttle, it must carry

the stresses of the Shuttle and the solid-rocket boosters attached to it during launch. Machined from aluminum alloys, the tank is the only part of the Shuttle that is not reused.

The tank has gone through major changes since it was designed in the early 1980s. The most apparent is the color. After the initial two Shuttle flights, NASA determined 600 pounds could be shaved from the tank's launch weight by no longer coating the tank in white latex paint. Instead, the orange spray-on foam used to insulate the super cold propellants is left bare.

In 1983 on the sixth Shuttle launch, NASA introduced the first Lightweight Tank -- 10,000 pounds lighter than the first tank. In June 1998, NASA launched the first Super Lightweight Tank — an additional 7,000 pounds lighter than the Lightweight Tank.

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