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Forty hours before Space Shuttle Columbia lifts off on Jan. 16, a Boeing [NYSE: BA] engineering team will power up the SPACEHAB Research Double Module, or RDM, in the orbiter's payload bay and perform the delicate pre-launch operation of stowing time-critical experiment hardware on board.

Delivery and stowage starts when Boeing personnel enter Columbia's middeck and set up winch motors for lowering a technician and experiment hardware into the SPACEHAB module. Lights, communications and environmental support equipment will already be in place when the technician, in a parachute harness and carrying an oxygen monitoring safety device, is hooked to one of the winches and lowered through Columbia's aft bulkhead hatch behind the commander and pilot seats.

"We always tell ourselves to take our time. We don't want anything broken or anyone hurt," said Dana Meredith, one of the technicians who received special training to take part in the middeck operation.

With the technician in place in SPACEHAB, Boeing engineers will carefully lower 21 packages of time-critical hardware - consisting of live specimens and life science experiments - into the module where they will be stowed in racks and lockers specifically designed for that purpose.

"We've been planning and rehearsing this complex operation over the past nine months to ensure total success," said Mike Kinslow, Boeing flow manager.

The pressurized SPACEHAB Research Double Module will make its maiden voyage into space aboard Columbia. SPACEHAB single and double modules outfitted for research or logistics have flown on 15 space shuttle missions to date.

Once Columbia returns to Earth, Boeing technicians will once again enter the module, retrieve the experiments and deliver them to scientists waiting to study the effects of spending more than two weeks in micro gravity.

The Boeing SPACEHAB program, headquartered in Huntsville, Ala., is responsible for building and maintaining the fleet of modules for SPACEHAB, Inc. Boeing personnel train the astronauts and provide round-the-clock real time mission support in the Mission Control Center at the Johnson Space Center.

Under its Checkout, Assembly & Payload Processing Services, or CAPPS, contract with NASA, Boeing NASA Systems in Florida performs the final integration and operation of the SPACEHAB module with the Orbiter.

Boeing NASA Systems is a unit of Boeing Integrated Defense Systems, one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$23 billion business. It provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in launch services.

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