Boeing Processes Large Payload for Launch on Shuttle Mission STS-128

CAPE CANAVERAL, Fla., Aug. 21, 2009 -- When Space Shuttle Discovery takes off from the Kennedy Space Center for the International Space Station on Aug. 25, it will be carrying 31,694 pounds of life support and science equipment -- a complex payload that was prepared and processed by employees of The Boeing Company [NYSE: BA].

Boeing provides NASA with payload processing services for the shuttle and the space station under the Checkout, Assembly and Payload Processing Services (CAPPS) contract. For the upcoming STS-128 mission, Boeing employees prepared the Leonardo Multi-Purpose Logistics Module (MPLM), a pressurized "moving van" that will be temporarily installed to the station.

"The CAPPS team takes great pride in the work we perform for our NASA customer," said Mark Jager, CAPPS program manager. "Preparing the module for launch and the safe delivery of the MPLM are critical steps toward completing assembly of the Space Station."

Discovery will also carry the Lightweight Multi-Purpose Experiment Support Structure Carrier, which holds a new Ammonia Tank Assembly provided by Boeing. The 1,800-pound tank is part of the station's cooling system; it contains about 600 pounds of ammonia, which is circulated in closed loops to remove excess heat from inside the station to radiators located outside. The current tank will return to Earth on Discovery and be refurbished by Boeing.

"At nearly 32,000 pounds, this is one of the heaviest payload missions flown to date," said Ken Koby, a Boeing systems engineer on the CAPPS program. "The size and number of MPLM racks we had to install required us to carefully choreograph this task. As always, we had to pay attention not only to how we would install them in Earth's gravity, but also to how the crew would unload them on orbit."

The Boeing team also assisted with the preflight checkout of the racks. The two 1,600-pound research racks on the MPLM are the Fluid Integrated Rack and the Materials Science Research Rack. The four ISS system racks are the Crew Quarters (CQ), Minus Eighty-Degree Laboratory Freezer for ISS (MELFI), Node 3 Air Revitalization System (ARS) rack and Treadmill 2, which NASA recently renamed the Combined Operational Load-Bearing External Resistance Treadmill (COLBERT).

Boeing built the 1,200-pound ARS in Huntsville, Ala. The rack provides a carbon dioxide removal assembly and a trace contaminant control subassembly that remove potentially hazardous particles from the cabin's atmosphere. The rack also includes a major constituent analyzer, which monitors cabin atmosphere for adequate levels of nitrogen, oxygen, water vapor, and other components. Discovery's crew will install the ARS in the station's Japanese Experiment Module, where it will remain temporarily until it can be transferred to Node 3, a connecting module that will arrive on a later shuttle mission.

"The items being taken up to the space station are needed to continue to support the six-person crew on orbit and to ensure they have sufficient spare parts," said Joy Bryant, Boeing vice president and International Space Station program manager. "They also allow NASA and its international partners to expand the science experiments performed on station."

The services and support that Boeing provides under the CAPPS contract include planning for and receiving payloads, maintaining associated ground support systems, integrating payloads with the space shuttle, launch support, and space shuttle post-landing payload activities.

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