

Vehicle Assembly Building High Bay 3 Work Platforms

NASA's Space Launch System (SLS) rocket will be the most powerful rocket ever built. The Orion spacecraft will launch atop the SLS on its first integrated test flight, Artemis I, from Launch Pad 39B at the agency's Kennedy Space Center in Florida. SLS will be capable of launching crewed missions to deep space destinations.

The massive SLS rocket and its twin solid rocket boosters will require a large high bay from which to process and prepare them for launch. Exploration Ground Systems recently completed many upgrades and modifications to High Bay 3 in the iconic Vehicle Assembly Building (VAB) at Kennedy where the SLS and Orion will be stacked, processed and tested atop the new mobile launcher.

Ten levels of new work platforms were installed in High Bay 3, Towers E and F, to accommodate the rocket. A total of 20 platform halves altogether will surround the SLS and Orion spacecraft and provide access for testing and processing before they are transported to the launch pad.

Each of the giant steel platforms measures about 38 feet long and close to 62 feet wide. Each weighs between 300,000 and 325,000 pounds. The platforms are attached to rail beams which provide structural support and contain the drive mechanisms to retract and extend them. Each platform rides on four Hillman roller systems that are located two on each side – much like a kitchen drawer glides in and out. A mechanical articulated tray also moves in and out with each platform.

Platform A is installed 346 feet above the VAB floor. It will provide access to the Orion spacecraft's Launch Abort System (LAS) for Orion Lifting Sling removal and installation of the closeout panels. LAS Antenna Testing (Antenna Hat installation for testing) is also performed on this level.

Platform B is located 311 feet above the VAB floor. It provides access to the Orion Service Module Umbilical for Mate. Platform B also has emergency egress stairs from the Crew Access Arm White Room.

Platform C is located 280 feet above the VAB floor. It will provide access to the Multi-Purpose Crew Vehicle Stage Adapter and the Interim Cryogenic Propulsion Stage (ICPS) for mate activities. ICPS Mate to the Launch Vehicle Stage Adapter (LVSA) operations occur on Platform C. ICPS Umbilical (ICPSU) Mate operations are also performed on this level. LVSA upper access doors are located on Platform C for entry to the top of ICPS.

Platform D is installed 264 feet above the VAB floor. It will provide access to the LVSA lower access doors for entry to the ICPS to perform flight battery and computer installation on the ICPS equipment shelf.

Platform E is installed 246 feet above the VAB floor. It provides access to the Core Stage Forward Skirt Umbilical for mating operations. LVSA to Core Stage (CS) mate is performed on an elevated access platform on Level E. Entry into the CS Forward Skirt is necessary to perform optical verification of the SLS vehicle's Inertia Navigation System.

Platform F is located 192 feet above the VAB floor. It will provide access for Core Stage Intertank Umbilical (CSITU) for mate operations. Access into the CS Intertank is gained on this level. Located on Platform F, the "F-1" multi-level ground support equipment access platform is used for access to the booster forward assemblies and the CS to booster forward attach points. The upper level of F-1 is used for lifting sling removal during forward assembly mate for booster stacking.

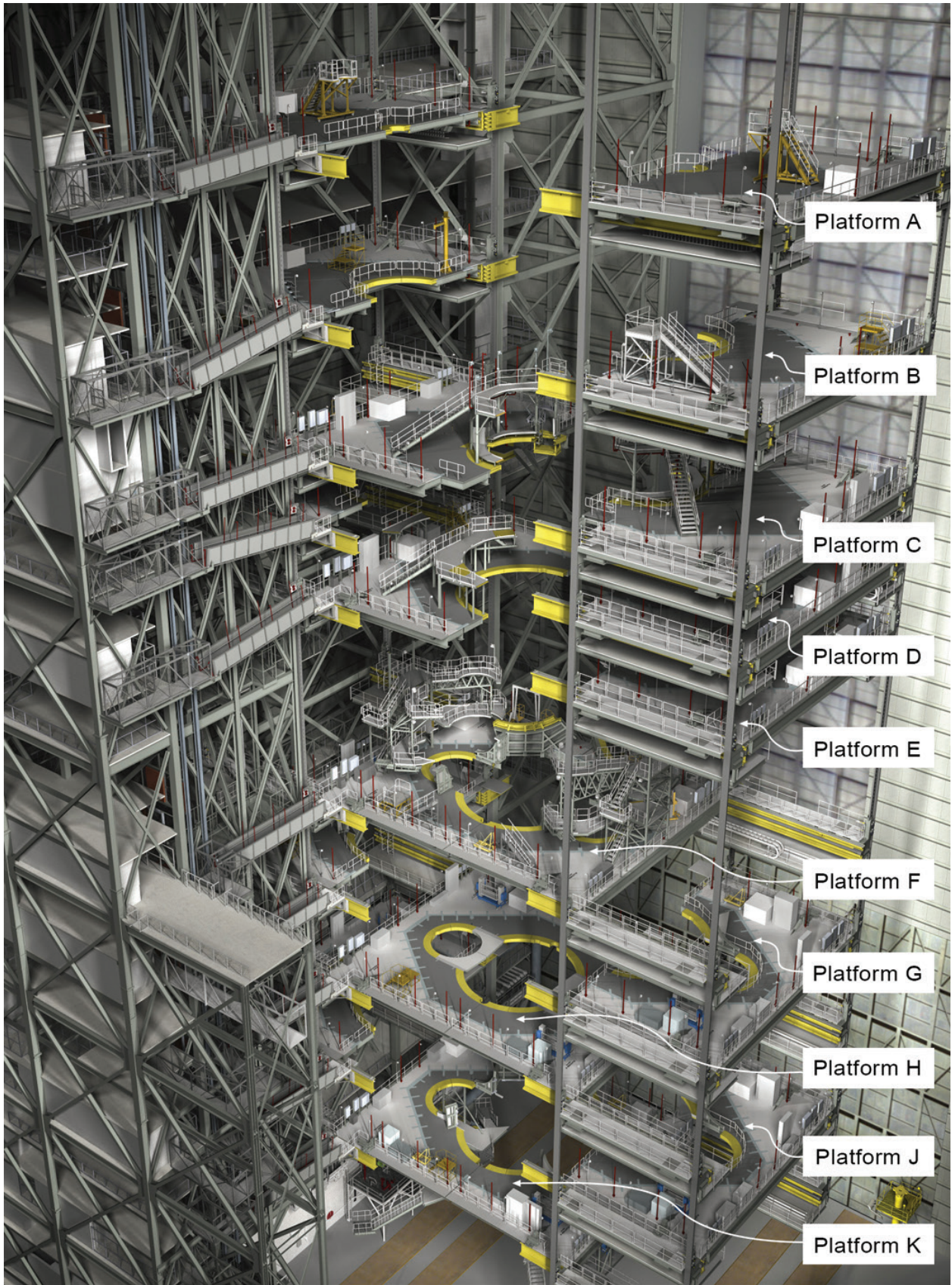
Platform G is installed 166 feet above the VAB floor. It will provide access for booster segment stacking operations of the forward segment to the forward center segment and booster systems tunnel cable routing and closeouts.

Platform H is located 139 feet above the VAB floor. It will provide access to the booster segment for mate operations of the forward center segment to the center segment and booster systems tunnel cable routing and closeouts.

Platform J is installed at 112 feet above the VAB floor. It will provide access for booster segment mate operations of the center segment to the aft center segment and booster systems tunnel cable routing and closeouts.

Platform K is installed at 86 feet above the VAB floor. It will provide access for booster segment stacking operations of the aft center segment to the booster aft assembly and booster systems tunnel cable routing and closeouts. Level K-1 is installed under Platform K for access to the CS to booster aft attach points.

NASAfacts



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