

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS (D2)
Launch Vehicles in Service or in Development (1)

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UNITED LAUNCH ALLIANCE – ESTABLISHING HEAVY LIFT CAPABILITY ON THE WEST
COAST

Abstract

On 19 September 2009, the Delta Mariner pulled into a small harbor located on the California Coast, in the south area of Vandenberg Air Force Base (VAFB). There it off-loaded the three boosters and second stage that would later be assembled in the Horizontal Integration Facility (HIF) into the first Evolved Expendable Launch Vehicle (EELV) with Heavy Lift capability to be launched from the West Coast.

In the HIF, the port and starboard liquid rocket boosters were mated to the core. The second stage was then mated to the vehicle, and, after a series of tests and check-outs, the vehicle was rolled out to the pad, Space Launch Complex 6 (SLC-6). On 29 January 2010, the vehicle was vertically erected onto the launch pad to begin an exhaustive series of integrated system tests and check-outs, included cryo-loading the fuel and oxidizer tanks in both the first and second stages, culminating in a full wet dress rehearsal of a launch countdown followed later in the flow by a final Integrated System Test (IST).

The Heavy Launch Vehicle produced by United Launch Alliance has the highest mass-to-orbit performance capability of any available US Expendable Launch Vehicle. This paper summarizes the launch system modifications and series of integrated testing necessary to prepare for a successful launch and establishing US West Coast Heavy Lift capability.