Boeing Rocketdyne RS-68 Engine Triumphs in 10K Run

The Rocketdyne RS-68 engine, being developed by The Boeing Company for the Delta IV family of launch vehicles, has achieved a major milestone in logging more than 10,000 seconds of accumulated hot-fire test time. The engine program is on track for first launch of the Delta IV in early 2002.

To date, the RS-68 program has actually accumulated 11,639 seconds of test time across the program. Currently, two engines are being tested-one at the Air Force Research Laboratory (AFRL) at Edwards AFB, Calif., and one at NASA's John C. Stennis Space Flight Center, Miss. In addition, a third engine is being fired as part of the Delta IV Common Booster Core testing at Stennis. An indication of the aggressiveness of this program is the fact that recently the two test teams were able to complete three back-to-back-to-back hot-fire tests in less than 48 hours.

"We've moved to a higher plateau regarding the frequency of our engine tests," said Rocketdyne Vice President and General Manager Byron Wood. "The Boeing employees at Stennis, AFRL and Canoga Park have done a tremendous job of massaging the test and evaluation process to get us to this point."

The rapid pace of testing can be credited to continuous improvements by the development and test team, according to RS-68 Program Manager Rick Baily.

"The hardware is operating as predicted and we now have a streamlined flow for testing, evaluating results and preparing for the next test," said Baily. "This puts us on track for wrapping up testing by fall as we transition from development to production."

In addition to the accumulated hot-fire time, other significant milestones are being met. To date, 35 of 42 demonstration test objectives have been achieved. Engine 10108, being tested at Stennis has achieved the 2,450-sec. Endurance Limit with the modified Fuel Turbopump; this indicates satisfactory operation with life extension modifications to the turbo-pump. All recent tests have been at target conditions and the program has run extended duration tests to 20 percent greater than a mission requirement.

The RS-68 engine is a liquid hydrogen - liquid oxygen booster engine that generates 650,000 lbs. of thrust. It is the first large, liquid-fueled rocket engine developed in the United States since Rocketdyne developed the Space Shuttle Main Engine.

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