Sikorsky Delivers First CH-53K Prototype Heavy Lift Helicopter To Flight Test Team

WEST PALM BEACH, Florida -

The Sikorsky team developing the CH-53K heavy lift helicopter for the U.S. Marine Corps has delivered the first prototype aircraft — the Ground Test Vehicle (GTV) — from the assembly line to the flight test team. The move will enable Sikorsky, a subsidiary of United Technologies Corp. (NYSE:UTX), to prepare and test the GTV aircraft for hundreds of hours of powered ground checks ahead of the four follow-on flight test helicopters that will take to the skies during 2014-15.

“The primary purpose of the GTV is to shake out the CH-53K helicopter’s dynamic systems by thoroughly testing and measuring the performance of the rotor blades, transmission, and engines while the aircraft is tied to the ground,” said Michael Torok, Sikorsky’s CH-53K Program Vice President. “Extensive ground-based flight checks with Sikorsky and NAVAIR test pilots at the cockpit controls will confirm whether these dynamic systems, as well as hydraulic, electrical, and avionics systems, can meet the requirements established by the Marines for their next-generation heavy lift helicopter.”

Though designed to the same footprint size as the CH-53E Super Stallion™ helicopters they will begin to replace in 2019, CH-53K helicopters will triple the external load carrying capacity to more than 27,000 pounds over 110 nautical miles under “high hot” ambient conditions. Technology enablers for increased lift include 7,500-shaft-horsepower GE38-1B engines; a split torque transmission design that more efficiently distributes engine power to the main rotors; fourth-generation composite rotor blades for enhanced lift; and a composite airframe structure.

Flight test engineers will spend the coming months performing preliminary acceptance tests that include calibrating the GTV’s fuel system and attaching measuring devices at more than 1,300 test locations on the aircraft to record temperature, aerodynamic loads, pressure and vibrations. By mid 2013, the GTV will be attached to a specially built outdoor platform to hold the aircraft in place when its three engines are powered on — a process known as a “light-off.” Initial light-off test events will be performed without rotor blades, followed by more rigorous tests with the blades attached.

“This is an important point of transition for the CH-53K program,” said Col. Robert Pridgen, program manager for the heavy lift helicopters. “I am encouraged by the initial results of our testing at the component and subsystem level. Now we bring it all together. The GTV is our first dynamic system-level integration of those same components. We are looking forward to the sights and sounds these next heavy lifters will bring to the Marine Corps.”

Sikorsky is designing, building and testing the GTV and the four flight aircraft — designated Engineering Development Models — as part of a $3.5 billion System Development and Demonstration contract. Two additional ground test articles are undergoing airframe structural testing at Sikorsky’s main manufacturing plant in Stratford, Conn., as part of the same contract. The aircraft’s major fuselage sections are supplied by Aurora Flight Sciences, ITT Excelis, GKN Aerospace and Spirit Aerosystems.

The prototype assembly line is located at Sikorsky’s Florida Assembly and Flight Operations facility in West Palm Beach. Ground and flight testing will occur at the Developmental Flight Center on the same Florida campus.

Sikorsky Aircraft Corp., based in Stratford, Conn., is a world leader in aircraft design, manufacture and service. United Technologies Corp., based in Hartford, Conn., provides a broad range of high-technology products and support services to the aerospace and building systems industries.
