

Writer: Philip Lorenz III
Feb. 22, 2010
Release: 2010-046
Photo: N/A

Global Hawk engine 'flies' at AEDC

ARNOLD AIR FORCE BASE, TENN – The AE3007H growth engine, the power plant for the RQ-4 Global Hawk unmanned aircraft system (UAS), is undergoing testing in Arnold Engineering Development Center's (AEDC) T-4 test cell.

"This is the first [altitude] test on this [specific] growth engine," said Gary Meuer, Aerospace Testing Alliance (ATA) project manager on the test. "They (the customer and sponsor) are after fuel economy, not more performance, but more efficiency and endurance."

According to Andrew Jackson, ATA's project engineer on the test, this AE3007H has upgraded turbine hardware and an improved combustor that, if validated by this project, will enable the engine to have greater service life.

"The new turbine and combustor are intended to provide increased hot section life, i.e. longer intervals between overhauls, while maintaining comparable performance levels as the current hardware," he said. "The key parameters that we simulate in the test cell are altitude and Mach number."

In 2004 and 2005, AEDC engineers, including Jackson, had conducted ground testing of the AE3007H engine in T-4.

The test at AEDC is taking place as unmanned aircraft systems are taking a more prominent role in Iraq and Afghanistan and other countries are considering buying the Global Hawk for their own air forces.

"Our military is in a transition from having live pilots in the cockpit flying the aircraft to having them in a control room stateside, controlling a UAS," said 2nd Lt. Jamie Gurganus, the 717th Test Squadron's project manager for the engine test. "It's all about this transition and evolution of technology that we are able to continue supporting the warfighter and our mission. Protecting our fellow airmen is part of that mission."

The Global Hawk can provide up to 36 hours of long-range surveillance of areas of interest. With a service ceiling up to 65,000 feet, the RQ-4 can survey up to 40,000 square miles of terrain a day.