

A Full Service Test

The PT6 turboprop engine makes its first appearance in an AEDC test cell.

It is one of the most popular turboshaft engines in history. Yet in its more than 53-year history, Pratt & Whitney Canada's PT6 was never tested at AEDC.

That is until 2013 when the PT6 Program Office, located at Wright-Patterson AFB, needed to conduct some endurance testing and AEDC engineers responded with a hearty "bring it on down."

The PT6A-68 engine is used by the Air Force in the T-6 Texan II training aircraft to give new pilots an introductory experience in a "jet-like" environment. It provides "jet-like" thrust response using a variable pitch propeller with an electronically-controlled turbine to drive the propeller.

One unique factor of this test was the coordination between the test sponsor at the PT6 program office and AEDC with very little involvement from the OEM.

Once the initial high-level plan was in place, the challenging work began. First the engineers had to locate the hardware needed to install and operate the engine. So engineers came up with an ingenious way to get what they needed.

The test team acquired a salvaged part to form a forward aircraft section to help install the engine in the test cell and AEDC worked with the PT6 field support contractor to negotiate the use of engine support hardware needed to operate the engine and to provide spare parts during the test program.



PT6 Program Achievements

- ✓ **First** AMT PT6 test at AEDC
- ✓ **First** turboprop engine test at AEDC
- ✓ **First** time AEDC engineers were in charge of every aspect of the test, including maintenance and borescope inspections.
- ✓ **First** use of biofuel in an AMT
- ✓ **First** use of a portable data acquisition system for engine testing at AEDC



AEDC engineers working with the WPAFB sponsors developed all of the installation, test matrix, maintenance and inspection plans for the entire test program.

The program successfully completed in March 2014 with more than 1,900 engine hours, including 1,855 hours of dedicated endurance testing.



To learn more about the PT6 at AEDC, use the QR code below and connect to AEDC's website

