



Volume 2 * Issue 3 * 3Q2009

PurePower®

PW1000G Engine News

This Changes Everything.™

Visit us at the following upcoming shows and events:

2009 European Regions Airline Association (October 5-7)
Interlaken, Switzerland
Booth # F2

2009 ALTA Airline Leaders Forum (October 14-16)
Cartagena, Colombia
Booth # 26

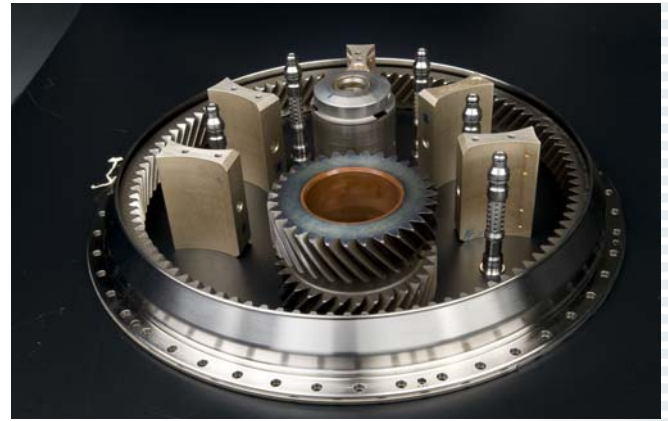
Seoul Airshow 2009 (October 20-25)
Seoul, Korea
Booth # 17

Dubai Airshow (November 15-19)
Dubai, UAE
East Hall - Booth # 446

www.pw.utc.com

PurePower Fan Drive Gear System Sets Endurance Testing Milestones!

Pratt & Whitney successfully completed endurance testing on the PurePower PW1000G fan drive gear system (FDGS), achieving the equivalent of more than 20,000 hours of service operation. To date, rig testing of the fan drive gear system has produced significant accomplishments in the FDGS development program. For example, Pratt & Whitney has been able to simulate more than 40,000 take offs, at loads of 30,000lbs of thrust. Almost half of those take-offs were maximum torque take-offs at extreme oil temperatures, and post-test inspections have revealed the gears, journal bearings and components to be in excellent condition after this rigorous testing.



FDGS Hardware Post Test

Left – Gear from Endurance testing, Right – Hardware from Engine Demonstrator

The recent endurance testing for the fan drive gear system further supports the findings from the PW1000G demonstrator engine, which confirmed the system's robust design and efficiency with lower than predicted heat rejection into the engine oil system. The PW1000G Demonstrator Engine garnered 406 hours of operation with 120 hours in flight.

"The PW1000G engine demonstration program showed the fan drive gear system was invisible to the airplane, with overall operation of the geared turbofan engine the same as today's conventional engines, only with lower fuel consumption and drastically lower noise," said Bob Saia, vice president, Next Generation Product Family.

The fan drive gear system does not use any life limited parts or exotic materials. It also allows for fewer engine stages, thus lowering overall engine weight and engine maintenance cost.

With the fan drive gear system, the PW1000G engine's low-pressure turbine can operate at higher rotational speeds for peak efficiency, while the engine's fan can operate at lower speeds compatible with optimum propulsive efficiency and significantly lower levels of noise. In addition, the fan drive gear system allows for a larger fan diameter that can accommodate more air flow.

The PurePower PW1000G engine demonstration program conducted in 2008 confirmed performance and noise projections for this advanced engine design. Engine noise measurement confirmed Pratt & Whitney's target of 20 decibels below today's stage 4 standard.

Published by Pratt & Whitney
Commercial Engines and Global Services
Marketing Department
purepowermarketing@pw.utc.com



Pratt & Whitney
A United Technologies Company

P&W to Begin Full Scale Core Testing in 4Q2009

Common Core will start full scale testing

Pratt & Whitney will begin testing a full-scale PW800 engine core beginning in the fourth quarter of 2009 and will continue into the early part of 2010. The purpose of this testing is to evaluate module performance and component stresses. There is a high degree of commonality between the PW800 and PW1000G engines and this core fully represents the production configuration, therefore any learning gained during the testing is directly transferable to all models.

The core testing is yet another step in the validation of the PW1000G engine. The Geared Turbofan (GTF) Engine Demonstrator, which successfully completed testing last year, was built with a PW1000G representative low spool (Fan, fan drive gear system, LPC and LPT), and a PW6000 test core. The upcoming core testing will put all of the pieces together.

The core test is not considered a rig test; instead it represents an actual engine build. The core will be tested in an engine test cell at the Pratt & Whitney facility in Longueuil, Canada. A full high pressure compressor case will be built up around the engine core, which will be outfitted with test equipment that simulates inlet and exit conditions. The test configuration and extensive instrumentation allows Pratt & Whitney to perform a broad scope of testing beyond what is normally capable in a full engine test.

This milestone represents a significant step forward in the PW1000G program. Combined with the engine demonstrator test results from last year, the core test results will enable P&W to paint a complete picture of the PW1000G engine and its performance, several years in advance of 2013 Entry into Service. This test will validate the hard work that has been done over the past several years and at the same time give P&W the opportunity to make any changes in design now if the testing indicates a need.



PW800 core following build, on display in East Hartford, CT

PurePower® PW1000G Engine Selected as Finalist for Irkut MC-21 Aircraft

Moscow Air Show, Zhukovsky, Russia



The MC-21 aircraft prominently displayed at the entrance of the Irkut chalet at the 2009 Moscow Air Show

Pratt & Whitney's PurePower PW1000G engine has been chosen by Russia's United Aircraft Corporation as a finalist to power the Irkut MC-21 aircraft. Pratt & Whitney issued the following statement:

"We are pleased that Russia's United Aircraft Corporation has chosen the Pratt & Whitney PurePower® PW1000G engine as a finalist to power the Irkut MC-21 aircraft. We believe that the PW1000G is the best technical solution and look forward to support Irkut throughout the selection process over the next several months. We are proud that time and time again, the PW1000G engine, with our patented geared turbofan technology, is recognized as an industry leader in next generation propulsion.

The MC-21 program would enable Pratt & Whitney to extend its PW1000G models to the 30,000 pound thrust class. We see Russia as a growth market for Pratt & Whitney products and services and are committed to long-term business activities in the country."



Pratt & Whitney

A United Technologies Company

400 Main Street
East Hartford, CT 06108
www.pw.utc.com