



Trent 1000

Initial testing successfully completed on time

This week, after running successfully for the first time on February 14th on schedule, the first Trent 1000 engine successfully completed its first set of testing. The engine, which has been subjected to a wide range of instrumented runs and test experiments as part of normal development test programme, was removed from the test bed, as planned, on March 14th. The engine will now return to the shop in order to prepare for its next phase of testing.

The tests on the first build of this engine have focused on proving basic engine systems and test-bed integration, and on obtaining valuable early strain-gauge measurements of stress and vibration from the LP system.

As consistently demonstrated on all previous Trent engine programmes, Rolls-Royce is managing the Trent 1000 engine testing to schedule and delivering as promised, further confirming that the Trent 1000 is the low-risk engine for the Boeing 787 Dreamliner

Thrust levels beyond requirements successfully achieved

The testing went so well that, after a build up of thrust levels on successive runs, it was decided to run the engine to high power and the engine achieved a corrected thrust of well over 80,000lbf on March 10th. This significantly exceeds the 74000lbf thrust requirements for the 787-9, which will enter service in late 2010. This validates the design intent to produce an engine with more than adequate margins to produce all the thrust the 787 family needs with long lives and economic operating benefits.

Improved starting demonstrated – consistently

As predicted, the engine has demonstrated the dramatic reductions in start times to idle of less than 40 seconds. This validates the theory and technology capability of the new starting system using the Start Power Coupling to drive the HP and IP shafts simultaneously, and the powerful



Hamilton-Sundstrand starter-generators. Conventional starts using air from the aircraft auxiliary power unit take around 60 seconds and the quicker starts will be important for the fast turn-around required, particularly for short-range domestic operation for the 787-3 being launched by ANA in 2010.

After removal from test as scheduled on March 14th after 4 weeks of running, this engine will be refitted with more fan instrumentation for cross-wind testing to validate operability and mechanical integrity of the fan and intake under highly distorted intake flows.

Second engine to pass to test soon

The next Trent 1000 development engines are coming together at different stages of build, with the second engine on track to begin testing time at the start of April.