



11 November, 2005

## **ROLLS-ROYCE POWERS A380 ASIA PACIFIC AND MIDDLE EAST TOUR**

Rolls-Royce today celebrated the first flight of the Trent 900 outside Europe as the first Airbus A380 touched down at Singapore's Changi Airport. This first stopover is part of a tour the aircraft is completing around Asia Pacific and the Middle East during November.

Singapore Airlines is the launch customer for both the A380 and the Trent 900, which are scheduled to enter service towards the end of 2006. Following its stay in Changi, the Trent-powered A380 will continue its tour with stopovers in Kuala Lumpur, Sydney, Melbourne and Brisbane, where it will participate in the celebration of the 85<sup>th</sup> anniversary of Qantas. It will then fly on to the United Arab Emirates to take part in the Dubai Air Show.

Mike Terrett, President – Civil Aerospace at Rolls-Royce, said: "This tour takes in some of the key customers for the Trent 900 so it's a great opportunity to showcase our achievements on the engine. We take pride in the fact that the A380 is flying today with the world's quietest and cleanest high thrust engine."

Two Trent-powered A380s are currently involved in flight testing, the second aircraft having joined the programme on 19 October. The eight engines have now clocked up around 2000 flying hours during the flight test programme.

Ten airlines have so far made engine selections for their A380s, with seven of them choosing the Rolls-Royce Trent 900: Singapore Airlines, Lufthansa, Malaysia Airlines, Qantas, Virgin Atlantic, Etihad Airways and one further customer, as yet unannounced. With firm and option orders placed for 89 Trent-powered A380s, Rolls-Royce has secured a 50 per cent share of the market.

Key timings of the engine development programme include:

- First run, on schedule, March 2003
- Engine certification achieved on schedule, October 2004
- Maiden flight on A380, 27 April 2005

The third flight test aircraft also powered by Rolls-Royce made its maiden flight on 3 November 2005.

Seven companies are participating as risk and revenue-sharing partners on the Trent 900 programme: Industria de Turbo Propulsores (ITP), Hamilton Sundstrand, Avio, Marubeni, Volvo Aero, Goodrich and Honeywell. In addition, Samsung Techwin, Kawasaki Heavy Industries (KHI) and Ishikawajima-Harima Heavy Industries (IHI) are programme associates.

## **TRENT 900 WOW FACTS...**

At take-off, the A380's four Trent 900s will deliver thrust equivalent to the power of more than 3,500 family cars

The engine's hollow, titanium fan blades are almost 10 feet across and suck in over 1.25 tons of air every second. By the time the air leaves the nozzle at the back of the engine it has been accelerated to a speed of nearly 1,000 miles per hour (1,600 kph)

Temperatures in the engine core are half those on the surface of the sun

Air passing through the engine is squeezed to more than 700lb per square inch – over 50 times normal pressure at sea level

The blades in the engine's high pressure system rotate at 12,500 rpm, with tip speeds reaching 1,200 miles per hour (2,000 kph)

At take-off, each of the 70 high pressure turbine blades in a Trent 900 produces over 800hp....more power than a Formula One racing car

The 116 inch fan operates at nearly 3,000rpm with tip speeds 1.5 times the speed of sound

A Trent 900 has around 20,000 individual components

The Trent 900 is physically the biggest engine that Rolls-Royce has ever built

### **Trent 900 specifications:**

Thrust 70,000 – 76,500lb (Certificated to 80,000lb)

Overall pressure ratio 37:1 – 39:1

Bypass ratio 8.7:1 – 8.5:1

Inlet mass flow 2,655 - 2,745lb/sec

Fan diameter 116 inches

Length 179 inches

Weight 14,190lb

### Stages:

- Fan
- 8-stage intermediate pressure compressor (IPC)
- 6-stage high pressure compressor (HPC)
- Annular combustor
- Single-stage high pressure turbine (HPT)
- Single-stage intermediate pressure turbine (IPT)
- 5-stage low pressure turbine (LPT)

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