Boeing, Rolls-Royce, RUAG Aerospace and Deharde Maschinenbau to Investigate Open-Fan Propulsion Technology

BERLIN, May 7, 2009 – Boeing [NYSE: BA], Rolls-Royce, RUAG Aerospace and Deharde Maschinenbau have entered into a collaborative research agreement to explore the potential of fuel-efficient open-fan (open rotor) propulsion technology for future commercial airplanes.

Using technologies and techniques contributed by each of the parties, tests of a model concept airplane with open-fan engines are planned for early in 2010 at the RUAG Low Speed Wind Tunnel in Emmen, Switzerland. A unique propulsion and measurement system is to be integrated into the model.

“Open-fan propulsion technology has potential for reducing specific fuel consumption significantly below current turbofans,” said Michael Friend, Boeing director of Technology in Germany. “While Boeing has made no decisions as to the type of propulsion system or propulsion supplier for any potential future commercial airplane, this investigation will help us to better understand the interaction of open-fan propulsion with a candidate airframe concept, and how much fuel savings might be possible.”

As a global leader in technology, Rolls-Royce is providing propulsion design expertise from facilities in the UK and Germany, while Boeing is designing the integrated wind tunnel model airframe. The wind tunnel model will be manufactured by Deharde Maschinenbau of Varel, Germany. The model will utilize RUAG expertise in Counter-Rotating Open Rotor engine simulation.

"This research is an example of how we partner with technology leaders in Germany, Europe and around the world to investigate ways of reducing the environmental footprint of our next generation products," said Lianne Stein, president of Boeing Germany.

“Rolls-Royce is delighted to be working with Boeing to investigate possible power solutions for future generations of aircraft,” said Ric Parker, director, Research and Technology at Rolls-Royce. “Open Rotor engines provide an opportunity to make a step change in efficiency for narrow body aircraft and this research will help underpin future full scale demonstration and point the way for future developments.”

“Deharde has extensive expertise in windtunnel model design, manufacturing, system integration and onsite support in the windtunnels of Europe,” said Holger Hoffmann, managing partner of Deharde Maschinenbau. “As a dedicated small/medium enterprise we are excited to be a partner in this challenging global technology project with our expertise and know-how.”

Boeing is the world’s leading aerospace company and the largest manufacturer of commercial jetliners and military aircraft combined. Through its Boeing Research & Technology organization, the company conducts its own R&D and also works with top government, private and university research centers, and companies throughout the world to quickly find the most innovative and affordable technology solutions for aerospace applications. For more information, please visit www.boeing.com / www.boeing.de.

Rolls-Royce, a world-leading provider of power systems and services for use on land, at sea and in the air, has established a strong position in global markets - civil aerospace, defence aerospace, marine and energy. The Group has a broad customer base comprising more than 600 airlines, 4,000 corporate and utility aircraft and helicopter operators, 160 armed forces, more than 2,000 marine customers, including 70 navies, and energy customers in nearly 120 countries. It employs around 39,000 people worldwide people in offices, manufacturing and service facilities in 50 countries and has businesses headquartered in the UK, US, Canada, Germany, Scandinavia and China. This global presence allows the Group to access long-term international growth opportunities with its technology, presence, partnerships and people. In 2008, in collaboration with its partners, Rolls-Royce invested over £800 million on research and development, two thirds of which had the objective of further improving the environmental aspects of its products. For more information, please visit www.rolls-royce.com.

RUAG Aerospace is an international aerospace and defence specialist with strong technological expertise. The headquarters are in Emmen (Switzerland). RUAG Aerospace has production sites in Switzerland, Germany, Austria and Sweden. RUAG Aerospace’s engineering skills provide the foundations of its dynamic role in development and production. The company is excited to contribute its experience in powered wind tunnel testing to this collaborative endeavour for improved sustainability in air transportation. For more information, please visit www.ruag.com.

Deharde Maschinenbau is based in Varel in northern Germany and employs approximately 120 people. Deharde Maschinenbau, a family-owned enterprise, has operated successfully for more than 40 years. Both domestic and international customers representing diverse industry branches benefit from the broad spectrum of precision solutions. The portfolio comprises engineering, jigs & tools and plant and equipment manufacturing, as well as

the production of wind tunnel models and aircraft parts. All systems and processes are geared towards high flexibility and adherence to schedule. For more information, please visit www.deharde.de.

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