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Verein Deutscher Ingenieure
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Arbeitskreis Luft- und Raumfahrt

Invitation to an RAeS lecture in cooperation with the DGLR and VDI

The Development of the Variable Pitch Propeller

Patrick Hassell, RR Heritage Trust

Lecture
followed by discussion

Entry free !
No registration required !



Trent Meteor

Date: Thursday, 26th April 2012, 18:00
Location: HAW Hamburg
Berliner Tor 5, (Neubau), Hörsaal 01.12



The variable pitch propeller was one of the essential developments which created the high performance aeroplanes of the late 1930s. Overcoming initial opposition to its 'unnecessary complexity' it became a standard component of all but the lowest-powered aircraft. Features like constant speeding, feathering and reversing were introduced, and from 1944 manufacturers like Rotol, Hamilton Standard and AeroProducts faced the challenge of integrating propellers with the new gas turbines.

For almost three decades it seemed as though large turboprops like the Dart, Tyne and T56 had marked the pinnacle of propeller development. But from the early 1980's new regional airliners provided an opportunity to introduce advanced technologies including composite blades and electronic control.

This illustrated talk covers the development of these propellers from experiments in the First World War to the present day and outlines some of the basic aerodynamic and control considerations which govern their design. It concludes with a brief glimpse of current work on "open rotors" which may yet see the propeller return to the forefront of aero-technology.

Patrick Hassell began his career in the Aerodynamics office of Handley Page, working on the performance of the Jetstream mini-airliner. When that historic firm went bankrupt in 1970 he moved to Filton to join the Concorde aerodynamics team, again working mostly on flight test and performance certification.

After Concorde he moved to Douglas at Long Beach, working on DC-10 and MD-80 performance and later participating in US and international airworthiness committees.

In 1984 he went to Sweden to help with the testing and certification of the Saab 340 turboprop airliner before returning to England as propeller aerodynamicist at Dowty Rotol. He became its Business Development Manager but retired early to pursue his own interests, particularly in aviation history. He is presently vice-chairman of the Rolls-Royce Heritage Trust at Bristol.

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<http://hamburg.dglr.de>
<http://www.raes-hamburg.de>
<http://www.vdi.de/2082.0.html>

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