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Farnborough International Air Show

AGUSTAWESTLAND AT THE FOREFRONT OF ROTOR TECHNOLOGY
BERP IV Rotor Technology Delivers Operational Benefits Today
While Active Rotor Technology Promises Future Advances

AgustaWestland as a result of its technology investment strategy is now delivering BERP IV rotor technology to its customers to give improved operational capabilities and is also investing in active rotor technology research, where it sees the promise of significant performance and environmental benefits over current technology rotors.

BERP IV technology rotor blades are now in service with the UK's Royal Air Force on six AW101 Merlin HC Mk3A helicopters. The BERP IV programme was launched in 2000 with a technology selection and integration phase which was then followed in 2002 by a design and manufacturing phase. The blades first flew in September 2006 and have now completed a flight test programme during which the AW101 was flown at speeds up to 198 knots and at altitudes of 13,000 ft. Aircraft fitted with BERP IV blades have also been flown at weights up to 16,500 kg - 1,900 kg over the normal Merlin gross weight and 900 kg over the current AW101 maximum gross weight. BERP IV blades represent the latest generation of rotor technology developed under a jointly funded AgustaWestland and UK Ministry of Defence rotor technology development and demonstration programme. The blades incorporate an improved planform, new aerofoil sections and an advanced aeroelastically tailored structure to provide reduced vibration, 10 knots additional cruise speed and 650 kg additional lift capability over the standard AW101 Merlin main rotor blades. Under an EU programme dubbed CLEANSKY, AgustaWestland has launched a number of research programmes in cooperation with other partners to investigate new technologies to make rotorcraft greener and eventually bring the new discoveries to market. The research includes testing main rotor blades with active trailing edge sections to reduce blade noise, all electric flight control, varying flight path to reduce ground noise, and many other exciting topics.

AgustaWestland has been pursuing innovations to reduce helicopter vibration and to achieve a "jet smooth" ride for years. A smooth ride rises comfort, increases pilot productivity, and leads to reduced maintenance and operation cost. AgustaWestland has pioneered the ACSR system which cancels rotor vibration at the transmission. Currently AgustaWestland is exploring numerous creative solutions, including compact hub absorbers, active dampers, and active pitch links. The REACT (Rotor Embedded Actuator Technology) programme is being jointly funded by the UK government and AgustaWestland and involves the Universities of Bristol, Liverpool and Leicester as well as industrial specialist suppliers. The programme was launched earlier this year will study flexible trailing edge as well as studying the supply of power and the transfer of power to the rotor blades. Initial wind tunnel and ground testing of the active rotor technologies is already underway and this will ultimately lead to flight testing. Active rotor technology is seen to be equally beneficial to both commercial and military operators who will benefit from this "green" technology which has the potential to reduce noise levels and provide improved rotor efficiencies.

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