

Manufacturing

New perspectives in manufacturing composite fibres

After three years of development, the Airbus Filton team, with great help from Wichita and Illescas sites, has developed a new advanced fibre placement technique in order to produce composite wing spars for the A350 XWB.

"This new composite wing spar will be manufactured to exacting standards", says Christopher Jones, head of the manufacturing engineering spars team in Filton. "It is a stunning achievement, as well as a real overturn in manufacture approach and we are very proud of it." As a critical component of the wing, wing spars' weight and strength have to be optimised. This proved especially challenging to the design and manufacturing teams with the use of CFRP for the A350. In this specific case the size and complexity made their manufacture a real challenge.

However Christopher's team, along with suppliers Mtorres and Hexcel, has managed to reduce the number of operations now needed to manufacture the wing spars. And the team is confident of their quality in an industrial environment with the first components completed in record time, exceeding all expectations. "The assessment of the latest composite spar's inner quality shows that it could be flight worthy," Christopher explains. Made from 174 layers of composite fibres, each spar weighs approximately 540kg, and is 9 metres long. The precision of the 6mm-wide composite strip delivered by the machine has also reduced waste to less than



5 per cent. Seven of the numerous innovations brought by the new tool are currently under patent application in the UK and the USA and 10 more could be filed. The technology is being shared with Airbus' partners GKN and Spirit, the manufacturers responsible for the future supply of A350 wing spars. They will proceed with further developments.

New technique: the team responsible for developing the composite wing spar.

"We feel we have found new perspectives on the use of fibre placement in the aircraft industry and these are now the basis for our strategic vision of composite manufacture," Christopher concludes. // // //

/// IN BRIEF ///

A350 XWB new advertising campaign

Shaping Efficiency is the theme of a new A350 XWB advertising campaign targeting the aviation community. Launched in October, the first advertisement highlights the efficiency of the aircraft in flight. Further advertisements will highlight other facets of efficiency. The campaign will run online and in the print editions of trade press such as Flight International, Air Finance Journal and Aviation Week, and other international titles. It is also available on Airbus People.

Moving forward

Great progress has been made with Power⁸ project Zephyr over the summer with solutions found for each of the sites involved.

Diehl Aerospace, a joint Diehl/Thales company, will take over Airbus Laupheim site as of the beginning of October 2008. The official hand over is planned for the 8th of October 2008. Airbus signed a contract with GKN for the purchase of the wing component and assemblies manufacturing unit at Filton in September, with transfer of ownership planned for 5 January 2009. Premium AEROTEC GmbH, a new EADS subsidiary

based in Germany, is already operational. The EADS site at Augsburg and the Airbus sites Nordenham and Varel will be legally integrated into Premium AEROTEC GmbH from January 2009 on. The Airbus sites of Saint-Nazaire Ville and Meaulte and some engineering and support activities will be transferred to Aerolia, a new EADS subsidiary as of January 2009. // // //