

# CRC for Advanced Composite Structures and aerospace materials

**The CRC for Advanced Composite Structures (CRC-ACS) has developed new aerospace composites technologies for a range of advanced aircraft including the Boeing 787 Dreamliner, military aircraft and new-generation helicopters.**

With support from CRC-ACS, industry partner Hawker de Havilland (now Boeing Aerostructures Australia) secured Australia's largest aerospace work package to design and build the movable trailing edges on the world's most advanced new aircraft, the super-efficient Boeing 787.

This commercial aircraft 'Tier-One' work package, worth an expected \$4 billion in export revenue over the life of the aircraft production program, will create an estimated 3,300 direct and local flow-on jobs in Australia. The production parts are manufactured at BAA's Melbourne production facilities at Fisherman's Bend and shipped to the 787 assembly plant in Everett, Washington.

CRC-ACS had a central role in supporting the implementation of this contract, with the majority of the CRC's technology transfer process completed by 2008. This \$4 billion work package is a huge payback for the \$17 million Hawker de Havilland originally invested in CRC-ACS, beginning in 1992. CRC-ACS also has a key role in production implementation of the Wing Trailing Edge Devices (WTEDs) involving spoilers, flaps, and ailerons.

The first test planes came off the assembly lines in December 2009 and by October 2010, some nine 787s had logged more than 1,900 hours over 620 flights in the flight testing program. Full assembly production is underway and final customer delivery is expected to begin during 2011-12.

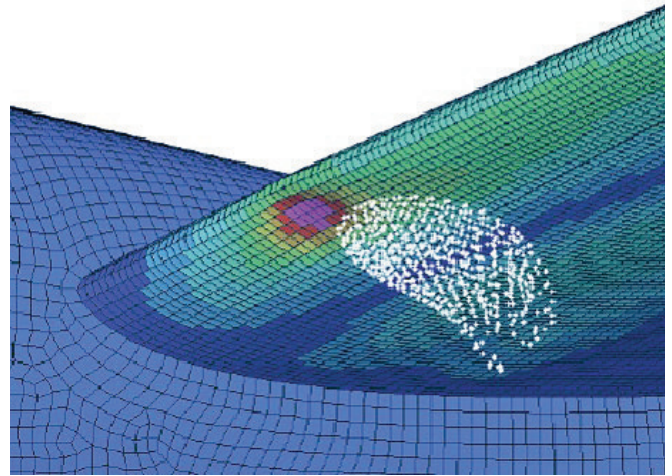
The Boeing 787 Dreamliner will be the world's first mostly composite commercial airplane, and will use 20% less fuel per passenger than similar planes, produce less carbon emissions, and will have quieter takeoffs and landings.

This world class composites partnership between CRC-ACS and BAA also contributed to BAA landing work as the sole source of the wholly-composite rudder for the Boeing 777.

CRC-ACS has also worked closely with the European Aeronautic Defence and Space company (EADS), whose subsidiaries include Airbus and Eurocopter. CRC-ACS was directly involved in establishment of an efficient new composites manufacturing facility in Brisbane, which will supply components for the NH-90 military helicopter. Following more than 10 years of successful technology co-development with Airbus, EADS has now joined CRC-ACS as a Participant.

Recent CRC-ACS technologies and processes include a new welding technology for aerospace composites and rapid-fitting installation technology for Airbus. This technology is expected to result in a 90% reduction in fitting installation time in Airbus planes, with potential labour savings of AUD \$5 million per annum.

**More information about the CRC for Advanced Composite Structures is available from [www.crc-acs.com.au](http://www.crc-acs.com.au)**



Modelling of aircraft impact utilised new-generation particle modelling software



The Boeing 787 test flight shows the Australian wing trailing edge devices in action