

Certification for Hawker spurs on winglet studies

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Aviation Partners' first two production sets will be installed in late September

Aviation Partners is eyeing potential winglet modification studies of several Cessna Citation and Dassault business jets after achieving US Federal **Aviation** Administration certification of its long-awaited Raytheon Hawker 800 winglet upgrade, for which it forecasts eventual sales of between 400 and 500 shipsets.

The 1.11m-tall winglets increase overall wingspan on the Hawker by 0.76m and reduce drag by some 7.35%, according to **Aviation Partners** chief executive and founder Joe Clark. "This gives a range increase of between 333-370km (180-200nm), or between 25 and 30 min, with no added fuel. It also makes time-to-climb 25% faster," he says. Total shipset weight is 42kg (92lb) for the modification which, for the first time in any of **Aviation Partners'** winglet designs, is all-composite with only an aluminum leading edge and no metallic spar.

Certification of the winglets on the baseline 800 will be followed by that on the 800XP version "within 30 to 60 days" says Clark, who concedes the effort "took us two years longer than we thought. It has been a very difficult programme and cost us six times what it took us to do the Gulfstream II." The delays were largely due to a lack of "OEM [original equipment manufacturer] data. We had to build our own finite element analysis and flight loads models," says Clark, adding that the FAA certification process is also becoming increasingly cumbersome. The programme was completed in the latter stages with close co-operation from Raytheon, adds Clark who says "we underestimated the scope of going it alone".

The first two production winglet sets for the initial aircraft are being fitted later in September, and "we are setting up installation centres right now," says Clark. Although firm orders currently stand at only 18, **Aviation Partners** expects the orders to rapidly ramp up now that certification has been achieved. "We gained 60-70% of the GIIs, and I think we're looking at something similar for the Hawker, so that's a market of 400-500 aircraft," he says.

For the immediate future "we continue to look at Cessna products and we are eyeing some of the Dassault aircraft, though we have no agreements with any of the OEMs at the moment. But both have high aspect-ratio wings," says Clark, adding this makes them likely candidates to enjoy larger performance benefits from a winglet modification. The company also believes the continuing rise in fuel prices will drive the urgency of new drag reducing aerodynamic studies such as the winglet package.

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Source: Flight International