

• By Dr Carlo Kopp, Peng

Dramatic turn arounds in F-111 availability and uptime in the 18 months since the Amberley depot was taken over by Boeing raises serious questions about the commonly held view in Russell that the F-111 is an unusually expensive platform – and that it will be come much more expensive.

The core of this argument put against the F-111 shows a poor understanding of reliability theory and ageing aircraft issues. Policy decisions derived from these views will be wrong.

Each F-111 delivers two to three times the punch of a single F/A-18A. It has over twice the range. Defence annual reports show unit ownership cost is only 36 per cent higher vs F/A-18A.

Arguments that the troubles seen with the F-111 two years ago are 'unpredictable' results of age and that costs may double can be shown to be with out substance.

The Department has never kept the type of detailed component level failure rate statistics needed to develop a reliability model based projection of long term support costs - one which tracks wearout 'bell curves' per component and is used to produce a 'bath tub' curve. Therefore any assertions that the aircraft is in ter-

mi nal wearout are based on guess work – not engineering facts.

DSTO's preliminary SOP findings are that the F-111 structure and TF30 engines can be managed to 2020 with no difficulties. With 200 moth balled F-111s there are plenty of spares to cannibalise. Take wings: A refurbished set of wings can be swapped in three days, so wing-swaps could extend fatigue life for decades

As structures are not an issue, what is the situation with avionics and wiring, the other two hotspots in older aircraft? Most of the wiring and core avionics in the F-111C and G were replaced in the 1990s AUP and AMP upgrades and later block up grades.

The only potential issues longer term are the remaining original avionics – the steam gauge cockpit, analogue radar and some boxes inside the Pavé Tack. The US/EU approach is to replace such subsystems with new hardware and realise a net saving in total ownership costs – of ten within a few years. The Department has not responded to several industry proposals for such upgrades.

What does raise interesting questions is the sudden turn around

in F-111 availability and reliability since Boeing took over the Amberley depot operation, and with SPO and DSTO Melbourne support launched an ageing aircraft engineering program. During last year's Red Flag the F-111s were more reliable than all of the newer types at the exercise.

Such dramatic changes in availability are usually symptomatic of poor previous maintenance technique and planning. Three fleet groundings resulted from previously known problems – not addressed until serious issues arose.

The cynical might say that killing the F-111 is 'burying the body' – get rid of the platform to hide the evidence of earlier planning and support blunders.

This engineering challenges the Department to provide a public, comprehensive Mil-Std-756 compliant reliability and wearout analysis of the F-111, using hard statistical data at a component and subsystem level – a document devoid of 'estimates' and 'opinion'.

Unless such a document is produced and proves otherwise, the incessant complaints about F-111 costs and future cost growth can not have any credibility.

Hornet's new radar trialled

ST LOUIS – The Boeing F/A-18E/F Super Hornet has completed several test flights with the APG-79 Active Electronically Scanned Array.

"This is a major step toward making the F/A-18 all that we've planned it to be," said Naval Air Systems Command F/A-18 Program Manager Captain B.D. Gaddis.

The AESA radar system replaces existing mechanically scanned antennas with a radar beam that can be steered at close to the speed of light.

This rapid beam scan feature improves performance dramatically, and because the array is solid state, mechanical breakdowns will be virtually eliminated.

Boeing expects to deliver the AESA radar system, built by Raytheon, as part of the F/A-18E/F by 2005.



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