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Subject: JSF FATIGUE TEST FAILURE
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Action Area PMNACC

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ISSUE: JSF FATIGUE TEST FAILURE**

SENSITIVITY: News of a significant JSF structural test failure, on the back of speculation this week about the need for increased Program development funding and schedule delay, will fuel further criticism of the JSF.

KEY ISSUES:

- Defence today received advice of a significant crack in a primary structural bulkhead on the Short Take-Off & Landing (STOVL) fatigue test article.
- The cause of the crack is still to be determined and issues such as manufacturing defects or poor test methodology ruled out before it can be concluded that the design is flawed.
- Further, DSTO advises that the equivalent bulkhead in the Conventional Take-Off and Landing (CTOL) variant is of a different design and material.
- Consequently the failure of the STOVL component may not necessarily indicate a problem with the CTOL variant being acquired by Australia.

- DSTO is assessing information from the JSF Program Office as it becomes available.

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BACKGROUND: JSF FATIGUE TEST FAILURE

The crack was found after approximately 1054 hours of simulated flight loads on a test article. This is considerably earlier than expected in a component designed for an 8000 hour life.

DSTO advises that the failed component is made from aluminium in the Short Take-Off & Vertical Landing JSF variant and from titanium in the Conventional Take-Off & Landing (CTOL) and Carrier Variants. With considerable experience in assessing fatigue fractures, both in aluminium (F/A-18) and titanium, DSTO advises the fatigue behaviour between the two materials is not directly comparable.

Crucial information being sought from the JSF Program Office includes:

- the root cause of the cracking (to determine manufacturing defects, poor test methodology or design issues as the cause);
- if a design cause is indicated – the proposed solution and/or re-design;
- implications for the CTOL variant; and
- implications for the overall JSF test and production program.

TALKING POINTS

- **I am aware that fatigue testing of the Short Take-Off and Landing variant of the Joint Strike Fighter (JSF)**

has resulted in a crack in a major structural component.

- I understand that the cause of the crack is being investigated but it is not yet clear whether this is a design issue or due to other causes.**
- I also understand that the Conventional Take-Off and Landing variant being acquired by Australia uses a different structural component to the one that failed in testing.**
- Implications for the Conventional Take-Off and Landing variant and the broader JSF Program are however unclear.**
- While this test result is of concern, Defence will neither speculate on cause nor implications.**
- Defence is waiting on advice from the United States JSF Program Office and will release more information as it becomes available.**

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