

Presentation

The Decoupling of Corrosion and Fatigue for Aircraft Service Life

Management

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Abstract: Metal fatigue management is generally well understood as reflected in Aircraft Structural Integrity Management Plans, which in some cases consider environmental degradation prevention, however limited provision beyond *find and fix* exists for corrosion repair. Thus, the repair of corrosion can be a major through life cost driver and an aircraft availability degrader. This *find and fix* approach exists largely because tools are too immature to accurately assess the structural significance of corrosion when it is detected. This presentation shows that fatigue and corrosion are decoupled for aircraft in general. Corrosion occurs on the ground whilst fatigue cycling occurs at altitude. This work then aims to provide a crack growth basis for the justification of allowing detected pitting corrosion to remain in service for a limited period.

Keywords: Aircraft fatigue; corrosion pits; crack growth
