

F-35 Joint Program Office Statement on CTOL/STOVL Wing Forward Root Rib Provided to the *Daily Report*, Sept. 1, 2011

The JSF Program has established clear criteria for the Durability and Damage Tolerance of the F-35 Air Vehicle. As part of the preparation for full scale durability testing, Government and Contractor Engineering Teams performed an analytical assessment of the airframes fatigue life. During this analysis, a shortfall in the predicted durability life of the Conventional Take Off and Landing (CTOL) and Short Take Off and Vertical Landing (STOVL) Wing Forward Root Rib was identified. The Root Rib is an aluminum part located where the Leading Edge of the Wing meets the Fuselage. The F-35 has a requirement to achieve 8000 flight hours verified through analysis and test to 2 lifetimes or 16000 total hours. The CTOL durability test, being performed by BAE at Brough, UK recently completed more than 2800 hours when the anticipated crack in the Forward Root Rib was identified. The crack is consistent with analytical predictions both in terms of location and life. The Program in conjunction with the USAF had earlier decided, on the basis of available analytical results, to continue testing in the presence of this durability deficiency and gather further data that could be used to manage the fleet in the most efficient manner.

To correct the durability deficiencies with this part, the JSF Program is executing well-understood engineering and corrective action processes. The Joint Program Office and Lockheed Martin Engineering Teams have already developed retrofit plans and a redesigned full-life Forward Root Rib for both variants. In the interim, fleet and test aircraft continue to be inspected with a simple, non invasive inspection as a precaution ahead of eventual modification. The new Forward Root Rib design will be incorporated from the beginning of LRIP5 for both CTOL and STOVL aircraft (AF31/BF35). 30 CTOL and 34 STOVL LRIP aircraft will require modification to achieve their full design life. The Forward Root Rib modification has been grouped with existing modification requirements to reduce both the cost of the modification and the time aircraft spend in deeper level maintenance. It is expected that the Forward Root Rib modification will require approximately 45 days to complete.

Resolving durability test article findings is a well understood process. Durability testing is conducted early in the development of any new aircraft to avoid costly sustainment issues later in the life of the aircraft. Problems are found and corrected in development rather than fleet service.