

Boeing 737NG Stabilizer trim motor (STM)

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Agenda

- Application
- Background
- Interim & essential solution
- Implementation
- Questions / Comments

Application

Boeing 737 Next Generation

Aircraft impact

- Horizontal Stabilizer Trim Motor (STM) meets its reliability requirements. However, due to operator feedback, design improvements have been made and continue to improve field reliability
- Primary failure mode is solder joint fatigue of the memory chip due to a combination of bending, vibration and thermal expansion stresses

Application

- Current Part Number: 6355C0001-01 Mod 9
- Under Development: 6355C0001-02

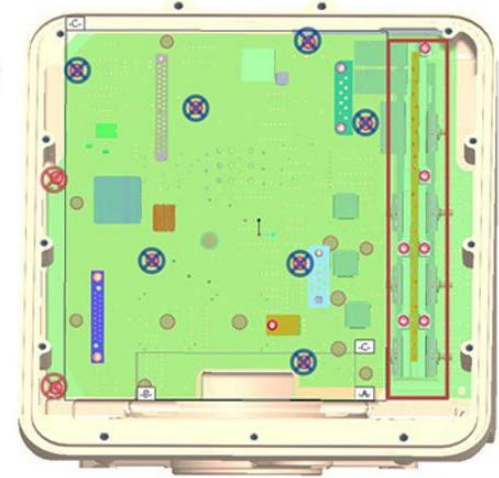


Background

- During joint Eaton / Boeing NFF investigations, an intermittency of the U8 component of the 6355-0230-13 Control PWA was identified
- The intermittency was determined to be caused by a potential tolerance stack-up that creates mechanical stress across the 6355-0230-13, ultimately causing the leads of U8 to fracture over time
- Further, Boeing has performed an in-depth analysis of the Horizontal Stabilizer Trim System Wiring design to include ships wiring, switches and production breaks and splices. The results of the Boeing Study show that operators may reduce the No Fault Found test results for the STM by checking the airplane wiring and switching components prior to removal

Interim solution: C-01 Mod 9

- Eaton has created a shimming procedure that ensures the 6355-0230-13 is held flat, so that all component leads, including the U8, are free from mechanical stress. This change is identified on 6355C0001 units as Modification 9 (Mod 9)
- After two years in service, the reliability of Modification 9 is higher than the overall population



Control PWA is supported by:

⊗ 7 standoffs

⊗ 2 mounting points to main housing (left)

□ 4 mounting points to housing through heatsink (right)

Impending solution: C-02

Design improvements that would create a 6355C0001-02 have been proposed to Boeing and are currently being tested.

Changes include

- Modifications to the memory chip package which is significantly more robust to vibration and thermal expansion
- Design and manufacturing optimizations from Boeing and Eaton investigations, including lessons learned from the 737 MAX qualification

Essential implementation: C-02

Expected production implementation is fourth quarter 2016.





Questions/Comments



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