

Continuing Airworthiness Notice – 51-001



Cessna 150/152 Series Horizontal Stabiliser Spars - Cracks

16 April 2012

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

The contents of this notice are ADVISORY ONLY and are NOT MANDATORY.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All operators and maintainers of Cessna 150, 152 and A152 series aircraft.

Purpose:

This Continuing Airworthiness Notice (CAN) is issued to advise operators and maintainers of possible cracks in the vertical fin attachment bracket P/N 0432004-9, the horizontal stabiliser spar P/N 0432001-56 and/or the spar reinforcement P/N 0432001-15 of Cessna 150, 152 and A152 series aircraft.

Background:

This CAN is prompted by reports of finding cracks along the edge of the plate welded to the forward face of the fin attachment bracket. These cracks were found during inspections accomplished per AD DCA/CESS150/127D. On some aircraft the cracks were found to extend into the horizontal stabiliser spar and the spar reinforcement. The vertical fin attach bracket is attached to the spar by twelve fasteners (6 on each side) and if the bracket is cracked the additional loads are transferred directly into the spar. Crack growth in the vertical fin attachment bracket is slow and progressive, and while this crack is developing the tailplane assembly is still capable of carrying the original design loads. However once the crack has extended into the stabiliser spar the tailplane structural strength may be reduced below the original design strength.

The visual inspections per DCA/CESS150/127D do not provide instructions to inspect for cracks in the stabiliser spar and reinforcement. These areas are hidden from view and not accessible without disassembly of the structure. Experience has revealed that cracks in the spar are due to fatigue caused by in-flight cyclic loads on the tailplane structure. There have been no reported incidents of an in-flight horizontal stabiliser failure due to cracks, and there have only been seven reported incidents of cracks found in the aircraft's history.

Recommendation:

When accomplishing the requirements in DCA/CESS150/127D the CAA recommends the following actions:

1. If any cracks are found in the fin attachment bracket, remove the vertical fin attachment bracket and inspect the horizontal stabiliser spar and reinforcement for cracks. Inspect the weld at the top forward corner of the fin attachment bracket, the corresponding sections of the spar and the reinforcement doubler.
2. With the aid of a light inspect the horizontal stabiliser spar and reinforcement for cracks. Remove the protective coating as required.
3. Accomplish corrective actions per the applicable Cessna maintenance manual and re-apply protective coating as required before returning the aircraft to service.
4. If any cracks are found in the horizontal stabiliser spar and/or reinforcement complete a defect report form and submit to the CAA.

For further information refer to CASA AWB No. 51-003 issue 2, dated 8 February 2012 which can be obtained from: http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90516

Enquiries:

Enquiries regarding this Continuing Airworthiness Notice should be made to:

Owen Olls
Airworthiness Specialist
Email: owen.olls@caa.govt.nz
Phone: 04 560 9569