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SERVICE BULLETIN

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Owner's Service Bulletin – OSB 31 Issue 1.0

Applicability – Ikarus C42A & B models with A-strut passing through main fuselage tube

Inspection of inside of A-strut for cracking

Classification: Recommended

Nature of Defect

An aircraft with severe cracking of the main fuselage tube emanating from the upper cut-out for the A-strut was also found to have suffered severe cracking of the A-strut around its entire circumference. This was hidden within the outer sleeve positioned at the connection between the A-strut and the upper surface of the main fuselage tube. The load path was maintained by the single small rivet used to locate the outer sleeve on the A-strut. See Figures 1 & 2.

It is believed that the cracking was a result of excessive loads placed upon the A-strut due to the near-failure of the main fuselage tube. One other similar historical case is known to have occurred abroad, on an aircraft known to have suffered landing gear damage.

However, it is also possible that the cracking may also be related to fatigue due to flexing of the A-strut at this point. Therefore inspection on high-hours aircraft is recommended, as well as those which have suffered damage which could have applied excessive loads to the A-strut.



Figure 1; A-strut attachment to upper surface of main fuselage tube. Lower attachment bolt visible beneath main fuselage tube at aft end of bracket attached to nose leg.

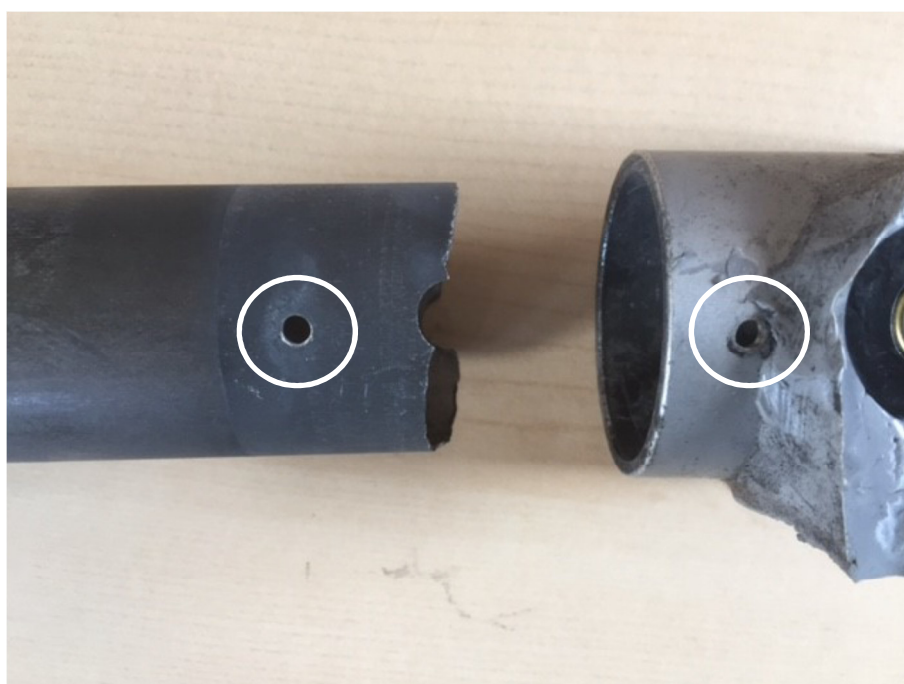


Figure 2; Failed A-strut removed from outer sleeve part on right of picture. Circled holes show location of the rivet which was holding the parts together.



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Airworthiness Implications

If such cracks are allowed to propagate the structural integrity of the A-strut will be compromised.

Aircraft Affected

C42 A & B model aircraft with the A-strut passing through the main fuselage tube.

Late C42 B model aircraft have the A-strut terminating above the main fuselage tube and are not affected by this service bulletin.

Hours of Operation

The aircraft exhibiting the cracked A-strut had in excess of 4000 hours of operation and had suffered damage to the main fuselage tube (reference Red Aviation OSB-29 Main Fuselage Tube Cracking).



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Rectification Action Required

(a) Inspection

(1) For aircraft which have previously suffered damage which may affect the A-strut, such as nose gear damage or any severe crash damage where excessive loads may have been applied to the A-strut such as a wing-tip strike:

We recommend that before next flight the internal surface of the A-strut in the region of the bolt passing through it at the connection to the upper surface of the main fuselage tube is visually inspected for cracks, using a borescope inserted from the lower end.

(2) For aircraft with no history of damage as described above in (1) and less than 2000 airframe hours:

No action.

(3) For aircraft with no history of damage as described above in (1) and with more than 2000 airframe hours:

We recommend that at the next annual or 100hr inspection, whichever comes first, the internal surface of the A-strut in the region of the bolt passing through it at the connection to the upper surface of the main fuselage tube is visually inspected for cracks, using a borescope inserted from the lower end.

Notes: (a) If the A-strut has been previously replaced then the airframe hours or exposure to the possibility of damage should apply to the operating time since replacement.
(b) The person conducting an inspection should be competent in the use of a borescope for visual crack detection.
(c) On aircraft fitted with a parachute system it may be necessary to remove the front parachute bridle from the A-strut before inspection. Please consult Red Aviation for instructions.

(b) Actions

Record the inspection in the aircraft logbook.

If any cracks are found **DO NOT FLY** the aircraft. Please contact malcolm@red-aviation.com for instructions for fitment of a replacement A-strut.



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Approved by:

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