

## **THRUSTER STAINLESS STEEL FITTING CRACKING.** (Tech Mgr Article from December 1999 AUF Magazine)

The November AUF Magazine carried a mandatory Airworthiness Notice requiring inspection of the wing lift strut attachment fittings before next flight and at each preflight thereafter ( Airworthiness Notice 4-99, See Thruster table item preceding this). The magazine also carried an article stressing the importance of being alert to what you are really seeing during an inspection.

Following the Airworthiness Notice, *diligent inspections at one airfield have revealed cracks in the stainless steel fitting that connects the two members forming the A-Frame supporting the rear of the “crew module” to the fuselage boom tube above the rear of the fuselage. It is the fitting that is virtually above the fuel tank. The two tubular members forming the A-Frame fit between and are thru-bolted to lugs that are welded to the stainless steel fitting and the reported cracks emanated from the top of the welds.*

All Thrusters should be checked in this area. Any cracking will require repair: either by replacement or by welding by a CASA approved aircraft welder if he considers the items salvageable by repair.

The fittings of 3 of the 5 aircraft from the field were found to have cracks in them. On the other hand, I have inspected two at the local field with no problems – and one of those had a hard time recently with no ill effects on this fitting.

This once again highlights the need for careful and accurate maintenance. The Thruster manuals specify that scheduled maintenance is to be carried out on Stainless Steel Fittings at every 50 hours. The manuals do not specify how to perform the maintenance or what is actually required – they are really “motherhood statements”, but if you are doing your own maintenance as a Level 1 or commercially as a Level 2, you would be aware that there is little else to do other than inspect them for condition – and that means cracking, corrosion, damage, attachment and truth. It also means that if the fittings cannot be inspected properly without some form of disassembly necessary to gain proper access for full and detailed inspection, then the disassembly must be done.

This inspection is not being mandated as an airworthiness notice as it is part of scheduled maintenance and should be performed anyway. However, the matter is raised here to highlight that there could be a problem in the area and to stress once again the need for thoroughness in inspection.

### **Ultralight Durability.**

As mentioned in my earlier articles, one of the main concerns in CASA with the fledgling Ultralight movement was with the durability (ie ability to not wear out) of ultralights in service. Our aircraft are “built lightly” mainly to comply with legal weight limits, and as a result of this components might be expected to deteriorate quicker than in, say, a general aviation aeroplane. One of the arguments accepted by CASA in allowing the Ultralight weight limit to be increased to 544 kg was that the increased weight would allow designs to be more durable which would result in safer structures and engines.

On the other hand, our aeroplanes are much simpler and easier to inspect, and this, coupled with the fact that the maintainer is the person who will generally suffer from shoddy maintenance, shortcomings in durability are counterbalanced by good maintenance.

With the ageing of much of our fleet, we should always be aware of the need for first class maintenance and as in all branches of aviation, only the highest quality of material, maintenance and operating standards will do.

Your attention is drawn to the article by Tony Hayes elsewhere in this magazine which addresses this subject and offers ways by which Thruster life can be prolonged. Many of the points he makes also apply to all of our aircraft types.

RHC