

Service Bulletin

S.B. No: 194

Title: INSPECTION OF SAB T9S MAIN UNDERCARRIAGE LEGS FOR CRACKS IN WING MOUNTING PORTION

Compliance: Before next flight.

Applicability: T67A Post Mod M136B, plus T67B, T67C Series, T67M, T67M-MkII, and T67M200 all Pre Mod M468

This Service Bulletin is the subject of an EASA Airworthiness Directive (AD), AD no. TBA.

The technical content of this Service Bulletin is approved under Authority of MSAC Approval Number EASA21J.194

INTRODUCTION:

A maintenance organisation has reported a crack in the aft face of the SAB T9S main undercarriage leg (Pre Mod M468) at the top of the leg, refer Photograph 1. This crack measures 40mm overall by 10 micron wide.

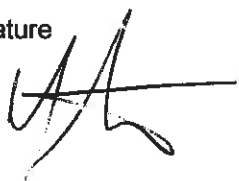

The crack was found during inspection of the main leg struts, through the oleo cover on the top of the wing. Concerned with the amount of corrosion in the starboard leg, the engineer decided to remove the leg for further investigation. No evidence of cracking was seen prior to removal. On removal of the forward main undercarriage mounting bolt water drained out. Upon removal of undercarriage the crack was found. Subsequent investigation showed the crack was in the metal portion of strut only, behind the aft weld attaching an internal collar, refer Figure 1. The mechanism of crack propagation is subject to further investigation, any airworthiness implication found will be notified in issue 2 of this SB.

The water ingress was due to the poor sealing surfaces of the wing at the oleo cover, and water finding its way into the wing undercarriage mounting structure due to the crack in the leg.

Subsequently the port undercarriage was removed. Inspection of the leg and oleo cover seal were passed as satisfactory.

ACTION:

Refer to FAA Advisory Circular AC 43.13-1B Acceptable Methods, Techniques, and Practices-Aircraft Inspection and Repair; Chapter 5 for Non-destructive Inspection techniques including guidance on operative/inspector requirements Paragraph 5-4, Visual Inspection techniques Chapter 5, Section 2 and Penetrant Inspection Chapter 5, Section 5.

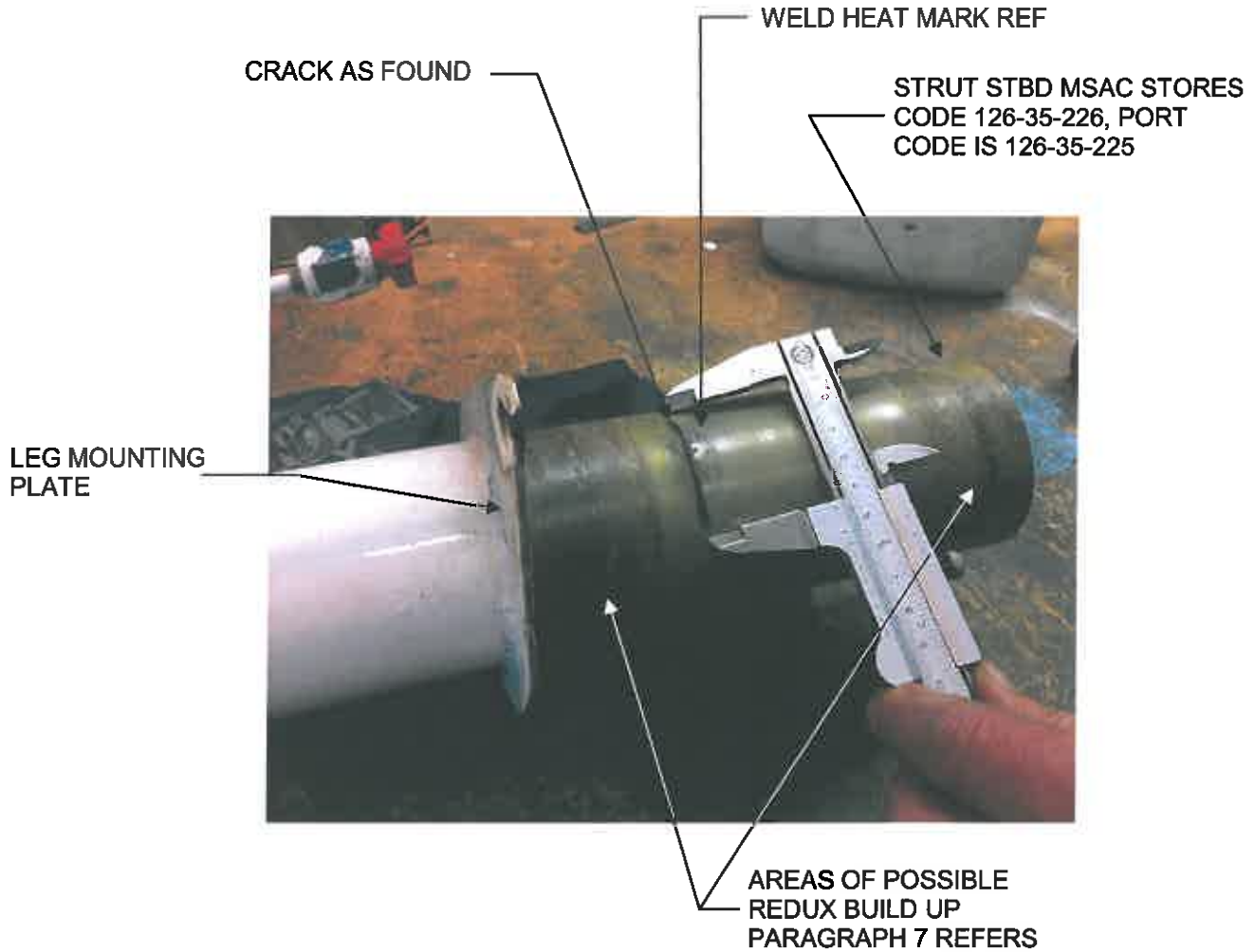
Signature  Compiled	Signature  Design CVE	Signature P Andrews Slingsby Approval
Print Name M J Rutter	Print Name N. THORP	Print Name P ANDREWS
Date 25 th November 2011	Date 2-12-2011.	Date 3-12-11.
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This Service Bulletin has been checked by Design and Airworthiness and has been technically accepted.

- 1 Remove undercarriage legs IAW relevant aircraft's Maintenance Manual (MM).
- 2 Clean all external and internal surfaces and in the first instance check visually the external surfaces for any crack at the collar weld positions above the mounting plate, i.e. the upper part of the strut, see Photograph 1 and Figures 1 and 2. If crack/s is/are visible, scrap strut and replace with new item 126-35-225 Port and/or 126-35-226 Starboard.
- 3 If no cracks are visible, carefully remove all corrosion from the internal surface of the upper portion over the collar welds etc. Use rotary wire brush tool but ensure no damage to oleo recharging stem, etc. If necessary disassemble leg IAW relevant T67 aircraft's Maintenance Manual. Ensure a clean smooth surface for crack testing.
- 4 Prepare areas for initial NDT testing using dye penetrant procedures. Ensure areas for NDT test are cleaned and washed thoroughly. The external area subject to inspection should encompass the full circumference of the leg and extend 25 mm either side of the plane containing the collar welds. The internal inspection should centre on the welds.
- 5 If any cracks are found in the areas dictated for inspection then the fixed strut is to be scrapped and a serviceable replacement is to be sourced. On receipt of replacement strut remove components from old leg and re-assemble into replacement strut IAW relevant aircraft's MM.
- 6 On satisfactory inspection - i.e. no cracks located - ensure all dye penetrant material is removed and internal area indicated by Figure 1 is painted using white epoxy paint system. Ensure external mounting area is primed with epoxy primer.
- 7 **Note:** some struts had rectification work carried out on the mounting portion of the struts by Slingsby, SAB had supplied legs with the mounting portion down on diameter. This was rectified by moulding, with adhesive Redux 410, an upper and lower epoxy collar to bring diameter back to correct size: i.e. $\varnothing 69.8^{J6}$ mm. Ensure that if there is a build up of resin on the strut in these locations that it is in sound condition.
- 8 Prior to replacement of leg ensure oleo cover wing seal is in good condition. If sealing area is unsatisfactory then rectify. Ensure wing undercarriage box and undercarriage mounting positions are in good condition. If necessary rectify prior to replacing undercarriage legs.
- 9 Reassemble undercarriage and re-inflate IAW relevant aircraft's MM.
- 10 At each aircraft annual or 500 flying hours as applicable, repeat inspections 1 to 9 and carry out rectification actions as applicable.
- 11 At each 100 or 150 hours check for water in top of strut and ensure remains dry with paint kept in good condition.
- 12 With regards to aircraft's relevant Maintenance Manual with reference heavy landing checks, undercarriage main legs are to be removed from aircraft and the welds to be subject to inspection IAW this Service Bulletin. MM to be amended at next amendment.
- 13 Ensure Maintenance Schedules are amended to reflect items 10 and 12

If during the course of inspections at 2 and 4 inform MSAC of cracks found stating position and size.

If in doubt or for rectification advice or spares contact MSAC Product Support – gemma.hodgson@marshall-slingsby.com



PHOTOGRAPH 1

GENERAL VIEW OF CRACK FOUND ON SAB MAIN LEG FIXED STRUT

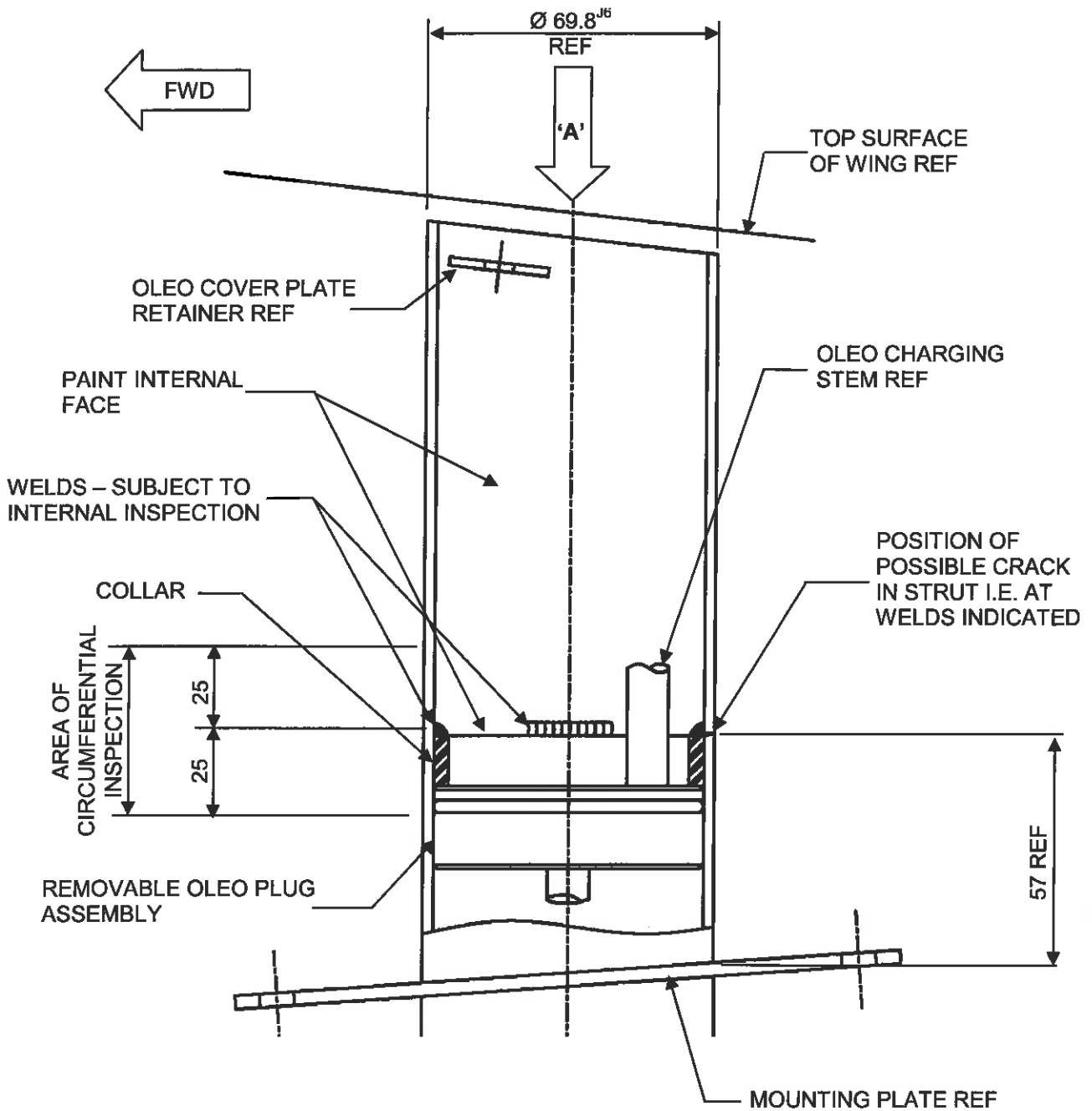


FIGURE 1

PART SECTION THRU TOP OF SAB MAIN LEG
 (TYPICAL PORT & STBD)

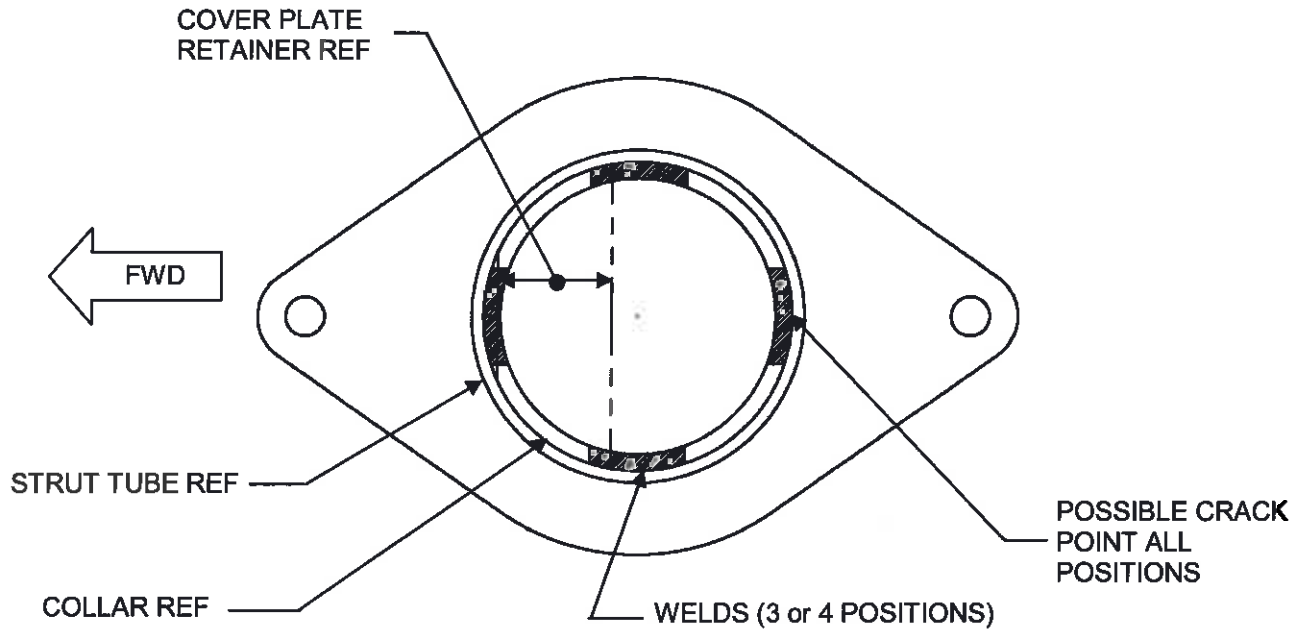


FIGURE 2
VIEW ON ARROW 'A'
SHOWING WELD POSITION