

MARCH, 1969.

TECHNICAL INSTRUCTION NO. 39.

Slingsby T.53.B. - Mod. No. 14

MODIFICATION TO FUSELAGE BETWEEN FRAMES 4 AND 6.

It is required to modify the centre section of the T.53.B. fuselage by the extension of the lower stringer and by stiffening and strengthening the skin in the area between frames 4 and 6.

This modification has been made mandatory on all aircraft by The British Air Registration Board.

Modification Procedure

To carry out this modification it is essential to prevent fuselage distortion when the skin is removed.

1. The fuselage is to be held rigid at three points, the fin at the tailplane pick up and in a contour board at frame 12, between two contour boards at frame 8 and on the steel crutch frame 3" fwd. of frame 4. See Fig. 1.
2. With the aircraft fully supported the skin panels shaded in Fig. 1. are to be drilled off. A sharp drill must be used at all times and great care must be taken not to damage the holes in the remaining structure.
3. The centre section of the wing should be removed by undoing the four attachment bolts, care must be taken to preserve the positions of the four distance tubes. It is also necessary to remove the dive brake rear push rod and the rudder cable pulleys on frame 5.
4. Using the old skin as a template the new skin may be pilot hole drilled by first spotting the hole with a drill the size of the hole then using these centres pilot holes are drilled. The rivet holes to the stringer are not drilled off since the new stringer is pre-drilled.
5. The new stringer is put in place and attached at the butt joint, frame 5, and frame 4, as shown on 53B-03-18 and 53B-03-16.
6. Open up eight holes with drill No.30, 2 on the skin lap joint, 2 on frame 7, 2 on frame 6 and 2 on frame 5. These should be approximately 3" from the aircraft C_L on the bottom of the fuselage.
7. The skin is then offered to the aircraft and held by riveting clamps in the eight holes.
8. Strong bungees are fixed around the skins to hold the skins firmly to the frames. See Fig. 2.
9. The holes along the bottom between the eight holes

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7. The skin is then offered to the aircraft and held by riveting clamps in the eight holes.
8. Strong bungees are fixed around the skins to hold the skins firmly to the frames. See Fig. 2.
9. The holes along the bottom between the eight holes mentioned in (6) can then be opened up and held with riveting clamps.

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10. Working upwards holes can be opened up at no more than two at a time and riveting clamps put in to hold the skin firmly.
11. With the skins in position the 26 swg. panel backing plates can be drilled off as 53B-03-23.
12. Bad holes must be opened up as per 53B-03-16 and 53B-03-18.
13. The whole is then removed and deburred and the surfaces prepared for bonding. See Add. I.
14. When the skins are ready for riveting and the surfaces for bonding, jointing compound (e.g. Duralac) must be applied to the mating surfaces which are to be riveted.
15. It is necessary to rivet up the skin aft of frame 5 and the associated panels at the same time as the bonding of both surfaces of the plasticell.
16. Rivet from the fuselage bottom centre line up to the lower stringer, and along the lower stringer.
17. Apply the araldite as in Addendum I.
18. Riveting from the bottom complete the riveting of the new skin and panels leaving the rivet holes in frame 5 held with riveting clamps.
19. When the whole skin and its panels are in place the panels must have light pressure during the curing process. To do this thin ply panels can be put on each new panel and braced apart with a number of sticks.
20. Repeat the process for the skins between frames 4 and 5, and complete the riveting on frame 5.

Parts Required

Drawing 53B-03-18 aircraft with Works No's.	1574
	1575
	1577
	1600
	1601
	1653.
Drawing 53B-03-16 aircraft with Works No's.	1654
	1686
	1687
Drawing 53B-03-23 all aircraft	
Sheets 1, 2, & 3.	

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Parts Required Con...

<u>No. Off</u>	<u>Part No's</u>	<u>Description</u>	<u>Works No's</u>
2	53B-03-21	Stringer Extension	1574 1575 1577 1600 1601 1653
2	53B-03-20	Stringer Extension	1654 1686 1687
2	53B-03-19	Doubler	1574 1575 1577 1600 1601 1653
2	53B-03-17	Doubler	1654 1686 1687
2	53B-10-1065	Stringer Cleat	
1	53B-03-23/1	Plasticell	
1	53B-03-23/2	Plasticell	
1	53B-03-23/3	Sheet	
1	53B-03-23/4	Sheet	
1	53B-03-23/5	Plasticell	
1	53B-03-23/6	Sheet	
1	53B-03-23/7	Plasticell	
1	53B-03-23/8	Sheet	
1	53B-03-23/9	Plasticell	
1	53B-03-23/10	Sheet	
	53B-03-23/11	Adhesive	
600	$\frac{1}{8}$ "dia. TLP/D 429	Rivet	
250	$\frac{1}{8}$ "dia. TLP/D 424	Rivet	
300	5/32"dia. TLP/D 530	Rivet	
125	5/32"dia. TLP/D 524	Rivet	

REMOVE AND REPLACE WITH NEW 20G. (036) SKIN

REMOVE AND REFIT

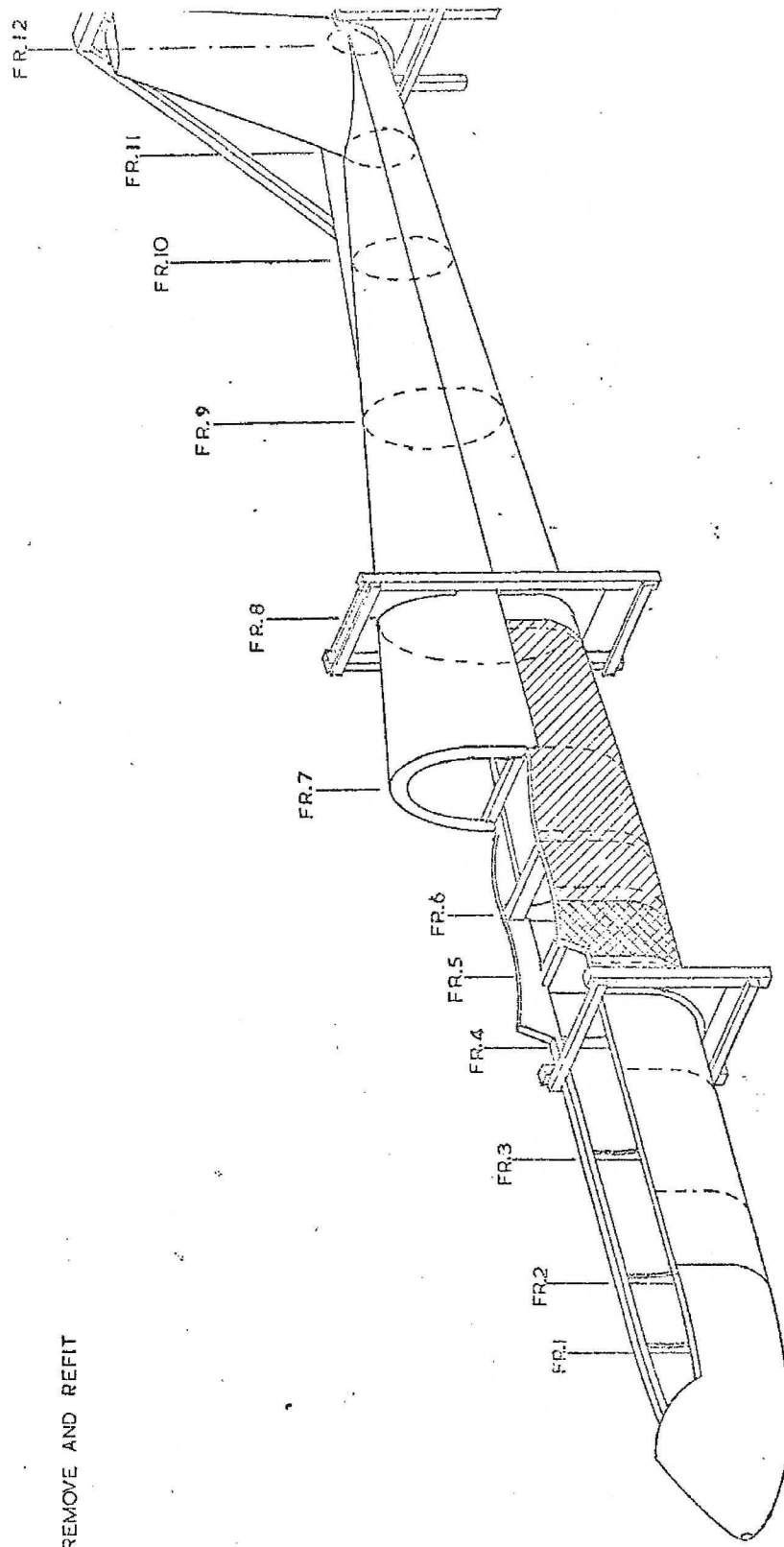
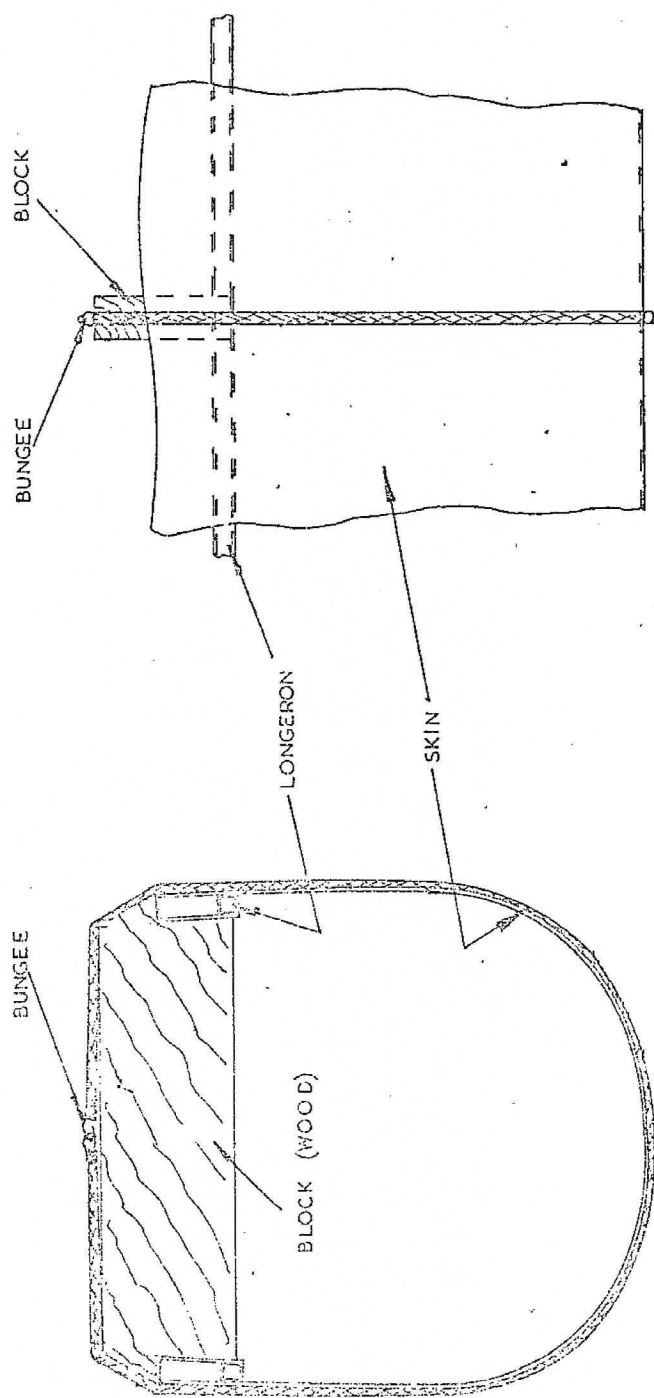


FIG.1



TYPICAL BETWEEN
FRAMES 5 & 6 & 6 & 7

FIG. 2

ADDENDUM I

USE OF ARALDITE AY105 + HY953F
FOR BONDING L.72 ALUMINIUM ALLOY TO PLASTICELL D.100

Mix:

1:1 by volume. Mix thoroughly in small quantities.

Pot life $2\frac{1}{2}$ hours at 20°C (68°F)

1- $1\frac{1}{2}$ hours at 40°C (104°F)

15 mins. at 60°C (140°F)

Surface Preparations:

L.72:- Degrease with Trichlorethylene on a clean rag or tissue, abrade with fine emery, and degrease as before.

Plasticell:- Degrease with industrial detergent solution (e.g. Teepol), rinse in clean hot water and dry thoroughly.

Application:

Spread onto the metal only by combing with a comb with teeth .15" apart .1" deep 60° angle. See below.

Curing:

The joint should be held lightly and allowed to cure from 1 - 2 days at room temperature (20°C).

