

**CHAPTER 2**

**CHAP.**

**2**

**ENGINE MOUNTING  
AND COWLING**

**R E S T R I C T E D**

## Chapter 2

## ENGINE MOUNTING AND COWLING

(Completely revised)

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## Description

1. The aircraft is powered with a de Havilland Gipsy Major Mk. 8 engine driving a two blade metal propeller of fixed pitch. It is mounted on two triangular structures built up with welded tube which are each attached to the upper and lower longerons of the front fuselage. There is a diagonal bracing strut between each structure and a pick up fitting at the top of the firewall. Engine vibration is reduced by the use of four rubber mountings to which

the engine bearer arms are secured. The cowlings covering the power unit are of Alclad to Spec. D.T.D. 610.

## Negligible and repairable damage definitions

2. If the top 7/8 in. o/d tube of the engine mounting is damaged at all it must be renewed. Definitions of repairable damage to other members of the engine mounting and cowling will be found in Table 1 together with references to appropriate repair illustrations.

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TABLE 1  
Definitions of negligible and repairable damage

Component	Negligible damage	Repairable damage	Repair fig. No.
<b>ENGINE MOUNTING</b>			
Front top tube 7/8 in. o/d	If damaged at all this tube must be renewed.		
Any other member	Smooth dents 1/40th tube dia. in depth and not in middle third of length	Smooth dents 1/10th tube dia. deep, 1/3rd tube dia. wide and tube dia. in length and not in the middle third of the affected tube	2/4
Front support tube	Elongation of bore up to 0.448 in. dia.	Elongation greater than negligible	2/3
<b>ENGINE COWLING</b>			
Lower nose panel	}	Cracks or torn areas any size	2/6
Other panels		Small smooth dents without cracks up to 0.10 in. in depth	Cracks or torn areas which can be enclosed in a 5.0 in. dia. circle

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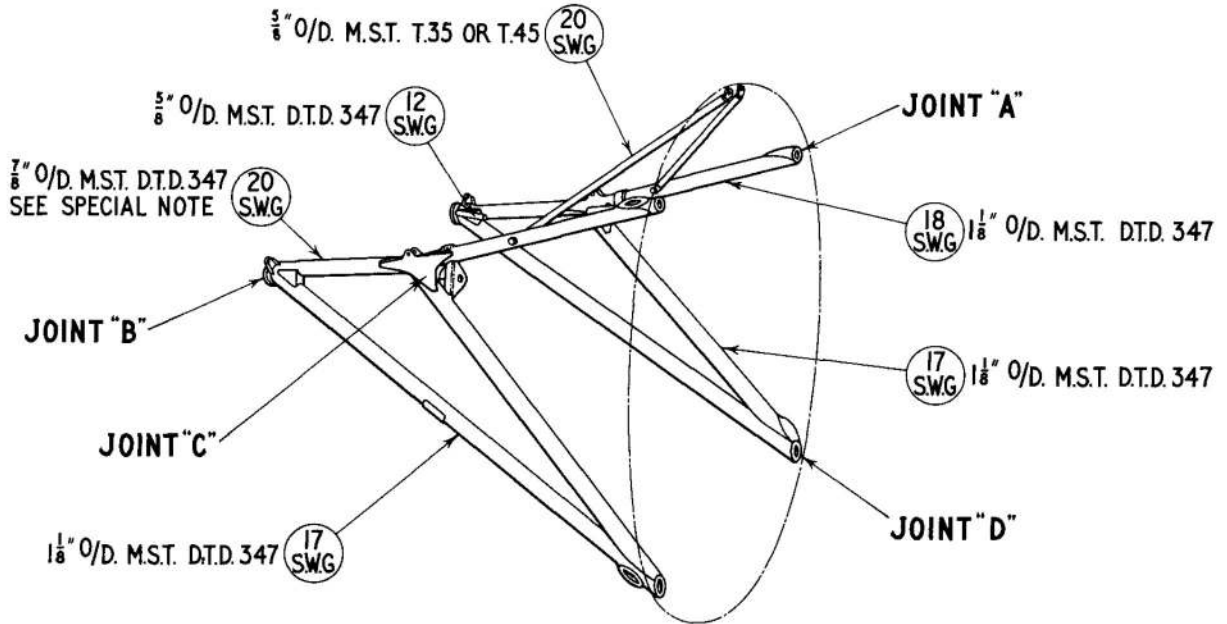


Fig. 2/1. Engine mounting

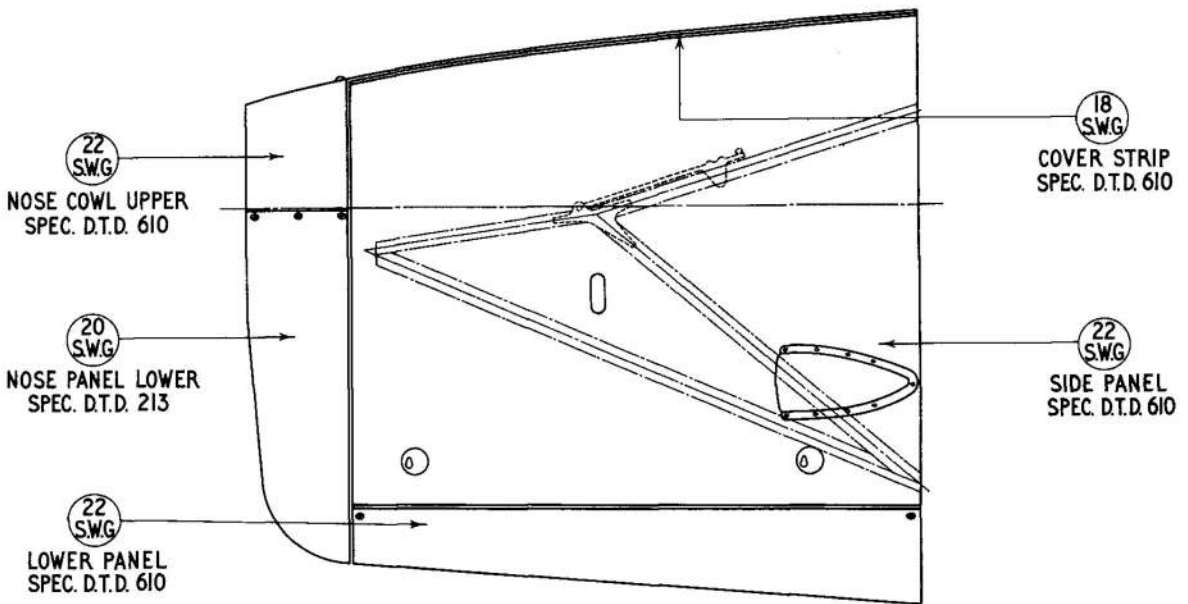
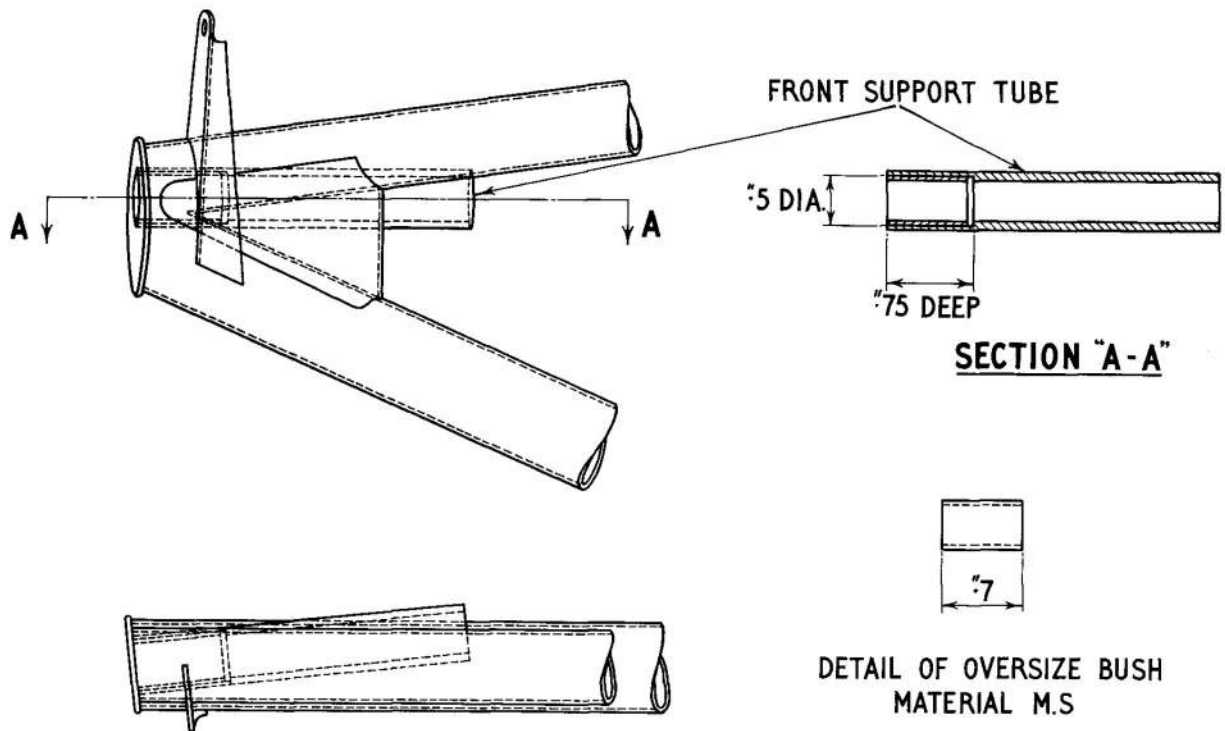


Fig. 2/2. Engine cowling

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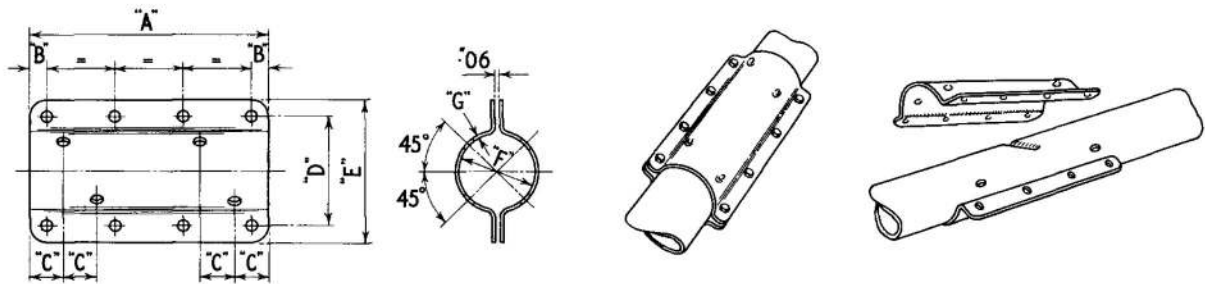


### JOINT "B" ENGINE MOUNT

Fig. 2/3. Repair to front foot

Elongation of support tube, bush replacement

3. When elongation of support tube bore exceeds 0.01 in. the end should be reamed  $\frac{1}{2}$  in. for a depth of 0.75 in. A bush should be turned up to an outside diameter to give a light drive fit in the reamed hole. The bore should then be finally reamed  $\frac{0.438}{0.437}$  in. dia. to match the bore of the support tube.



REPAIR TO	"A"	"B"	"C"	"D"	"E"	"F"	"G"	MATL	ACCESSORIES
$1\frac{1}{8}$ " O/D. TUBE 17 SW.G	4"50	0"25	0"65	1"60	2"10	$1\frac{1}{8}$ " O/D	16	D.T.D 124	8 FERRULES $\frac{5}{16}$ in. DIA. AGS. 934/GS 4 SCREWED RODS AGS. 935/G, 1.6in. LONG 8 FLANGE BOLTS A.25/1C 8 NUTS A.27/CP
$\frac{3}{8}$ " O/D. TUBE 20 SW.G	2"50	0"25	0"50	1"10	1"60	$\frac{5}{8}$ " O/D	18	D.T.D 124	8 PINS $\frac{3}{16}$ in. DIA. DHS. 94/6/90 8 FLANGE BOLTS A.25/1C 8 NUTS A.27/CP

Fig. 2/4. Repair to engine mounting tubes

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Repair of engine mounting tubes, procedure

4. The following method should be used in repair :-

(1) The tube should be carefully restored to shape and the dent reduced as much as possible, to permit the snug bedding of the sleeve patch.

(2) Two half sleeve patches should be prepared as detailed above and clamped down symmetrically over the damage by fitting bolts through the holes in the flanges.

(3) The tube should be drilled through the pilot holes in the sleeves and then reamed to suit the size of the ferrules or pins specified in the table. Insert ferrules or pins.

(4) Secure ferrules with screwed rods and lock by peening over rod ends trimmed  $1\frac{1}{2}$  threads proud of ferrules. Secure pins by peening ends to spread them to approx.  $7/32$  in. dia.

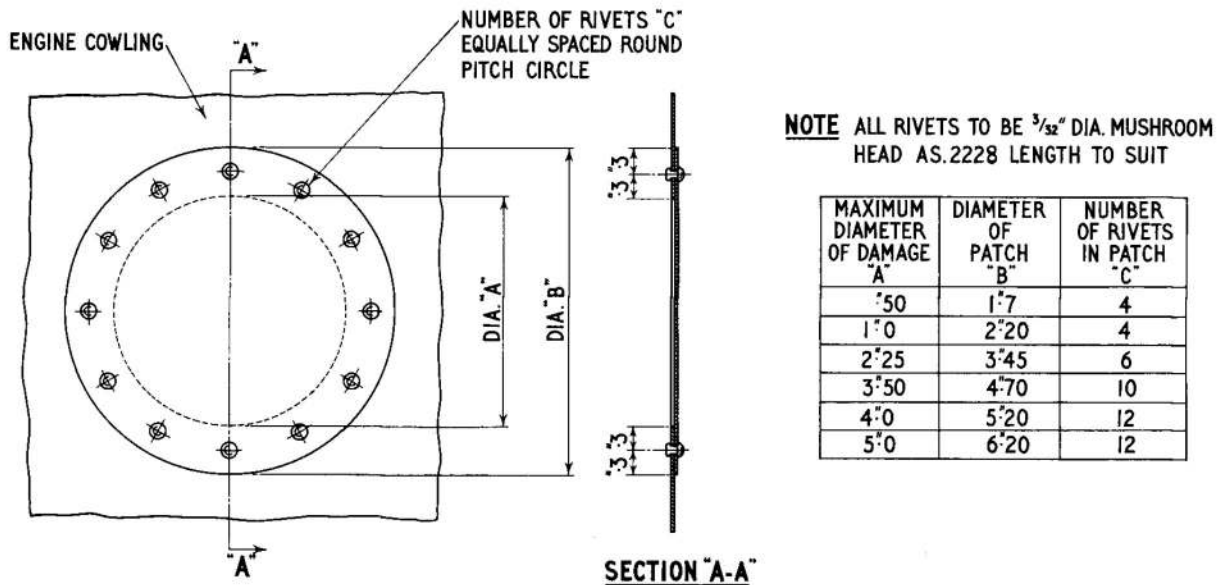


Fig.2/5. Repair to engine cowling

Repair of engine cowling

5. Dress out local buckles and cut damage out to a shape as near a circle as possible. Fit appropriate sized patch as shown above. It will be found that any damage exceeding 5.0 in. in diameter is more economically repaired by renewing the cowling.

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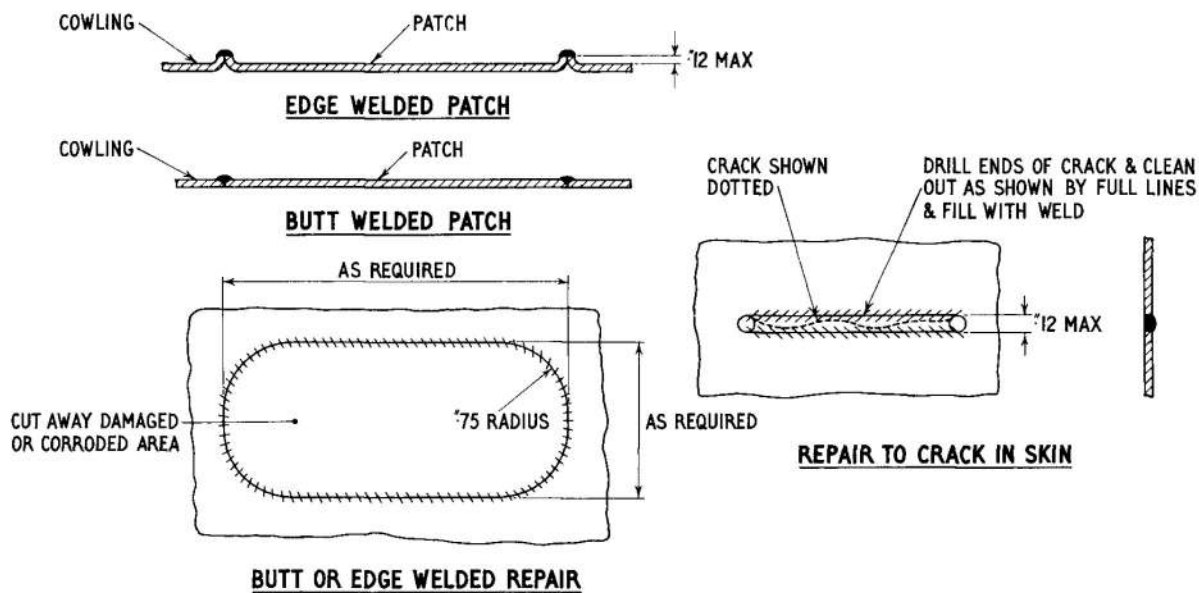


Fig. 2/6. Repair to nose cowling

Repair of nose cowling, procedure

6. The damage should be cut away to a symmetrical shape and a patch made to fit. Small areas can be repaired by using a butt welded patch, for large areas the edge welded scheme should be used.

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