

NICHOLAS CALE

CHAPTER I

GENERAL INFORMATION

NOTE TO READERS

The subject matter of this publication may be affected by Air Ministry Orders, by Volume 2, Part 1, leaflets in this A.P., in the associated publications referred to overleaf, or even in some others. If possible, Amendment Lists are issued to correct these Parts accordingly, but it is not always practicable to do so. When an Order or leaflet contradicts any portion of this publication, the Order or leaflet is to be taken as the overriding authority.

The inclusion of references to items of equipment does not constitute authority for demanding the items.

Each leaf bears the date of issue and, when applicable, the number of the Amendment List with which it was issued. New or amended technical information on new leaves which are inserted when the Parts are amended, is indicated by a line in the margin. This line merely denotes a change, and is not a mark of emphasis. When a Chapter is issued in a completely revised form the line does not appear.

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APPLICABILITY OF REPAIRS

The instructions for repair issued in Parts 3 and 4 of this Vol. 2 are planned to apply to the following marks of Vampire and Sea Vampire aircraft, and therefore, in these Parts, the A.P. number bears no suffix letter.

The repair instructions issued in this Part 3 are approved for application to:—

Vampire F Mk. 1 (See Notes below)
Vampire F Mk. 3
Vampire FB Mk. 5
Vampire FB Mk. 9
Vampire NF Mk. 10
Vampire T Mk. 11
Sea Vampire F Mk. 20
Sea Vampire T Mk. 22

Note—The parts listed in the various Key Tables apply to the Marks mentioned and not precisely to Vampire F Mk. 1 aircraft

The limitations of damage which can be treated as negligible or repairable as set out in the Chapter Tables apply positively to Vampire F Mk. 1 aircraft

No attempt must be made to repair damage which falls in the restricted areas shown in assembly diagrams

A.P.4099A, Vol. 2, Part 3, will no longer be issued

Repair Leaflets issued in Vol. 2, Part 4 apply to the Marks of the Aircraft specified in the Repair Leaflet heading

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ASSOCIATED PUBLICATIONS

This book should always be read in conjunction with
A.P.2662A, Standard Repairs for Airframes

where, in addition to the various standard repair procedures, there is a list of Air Publications associated with aircraft repair work. In general, references in this Vol. 2, apart from those to A.P.2662A, are mainly to A.P.1464B or 1464D.

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LAYOUT OF

A.P.4099 Series – VAMPIRE AIRCRAFT **A.P.4269 Series – SEA VAMPIRE AIRCRAFT**

These publications are issued in the standard three-volume form and, except for Vol. 2, Parts 3 and 4, carry the suffix letter appropriate to the Mark number of the aircraft (see "APPLICABILITY OF REPAIRS" on previous page).

- A.P.4099A – VAMPIRE F Mk. 1**
- A.P.4099C – VAMPIRE F Mk. 3**
- A.P.4099E – VAMPIRE FB Mk. 5**
- A.P.4099H – VAMPIRE NF Mk. 10**
- A.P.4099J – VAMPIRE T Mk. 11**
- A.P.4269A – SEA VAMPIRE F Mk. 20**
- A.P.4269C – SEA VAMPIRE T Mk. 22**

VOL. 1	Descriptive handbook and servicing instructions	
VOL. 2	PART 1 Leaflets (modifications and general orders)	PART 2 Servicing schedule
	PART 3 User Unit repairs	PART 4 Major repair scheme
	VOL. 3	PART 1 Schedule of spare parts

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* An Amendment Record Continuation Sheet (R.A.F. Form 2096B.) will be required when this page is full. Order it now.

LETHAL WARNING

EJECTION SEATS AND CANOPY JETTISON MECHANISMS

1. Ejection seats and canopy jettison mechanisms are sources of potential danger to personnel and of damage to the aircraft. Serious injury (possibly fatal) may result if any firing mechanisms are inadvertently operated whilst the aircraft is on the ground.

2. The following instructions are to be obeyed—

R.N. Safety Precautions contained in A.P.(N)140—Naval Aircraft Maintenance Manual.

R.A.F. ALL PERSONNEL before entering the cockpit or cabin of an aircraft fitted with an ejection seat are to report to the N.C.O. immediately in charge of airframe servicing who is to ensure that all safety pins (or other safety devices) are correctly positioned to render the seat and canopy jettison firing mechanisms safe. On completion of servicing, tradesmen are to report to the N.C.O.

3. Full instructions for rendering the firing mechanisms safe are contained in the A.P.4289 and A.P.(N) 1023 series, in Aircraft Servicing Schedules and in the A.D.5037 series.

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- 1. Title page
- 2. Introduction
- 3. Main plan
- 4. Main plan (including all scenes)
- 5. Appendix

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CHAPTER I

GENERAL INFORMATION

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Description

1. The Vampire and Sea Vampire are twin-boom monoplane fighter aircraft propelled by a single reaction turbine unit located at the rear of the fuselage behind the pilot. Mark 10 and 11 have two-seater fuselages, the earlier marks and the Sea Vampire being single-seaters. The monoplane wing is of all-metal construction and fully cantilever; the fuselage, of monocoque construction, comprises an inner and outer skin of birch plywood sandwiching balsa planking and is insulated from the turbine unit by a stainless steel fireproof bulkhead. The fins, rudders, tailplane and elevator are carried by the monocoque tail booms: all these components are constructed in light alloy. The tricycle alighting gear is fully retractable.

Mark 9 aircraft have refrigeration equipment installed with a ventilation duct fitted inboard of the air-intake. The fairing of this fitment is repairable, when damaged within the limitations shown in Table of definitions of negligible and repairable damage included in Chapter 6. The repair methods shown for this component also apply to the fairing. The difference in construction of the two- and single-seater type is shown in Chap. 4 and Chap. 7. The repair methods described and illustrated in the following chapters apply to all marks of Vampire aircraft except when specifically instructed for use on prescribed marks. Attention should be paid to the Notes on applicability of repairs included in the preliminary matter.

Support of structure

2. Before attempting any structural repair, consideration should be given to the effect on the structure caused by the removal of members; any extensive repair will require the provision of adequate support to prevent distortion.

Cracks in structure

3. Cracks in either metal or wooden members are liable to spread unless properly checked, and careful routine inspection must be made to detect such cracks. Guidance in methods to be used in discovery of cracks will be found in A.P.1464B, Vol. I, Part 2, Sect. 3, Chap. 3. Cracks in metal of a negligible nature must have $\frac{1}{8}$ in. dia. holes drilled at extremities, and cracks in wooden members which affect the fibres in any way must be repaired by the methods described later for the members concerned.

Corrosion and timber deterioration

4. Before commencing a repair to or re-assembling a structure after repair, search should be made for signs of corrosion or, with wooden members, for evidence of timber deterioration. Where the surface is covered with enamel a clue to surface corrosion will be found by the flaking of the paint under thumb pressure. Timber may show signs of discoloration or dampness, and repair or re-protective treatment must be effected. Appropriate protective treatments for the various members of the aircraft are set out in Table 1

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under the references "A" to "AG", which are explained in detail in Table 2. Reference may also be made to A.P.2662A, Chap. 13. After the completion of any repair as a result of which there are ply edges exposed to the weather, and with all external patch repairs to the fuselage, the surfaces must be treated as "O" (see Table 1) and then allowed to dry for at least 4 hours before doping a fabric patch over the repaired surfaces. This final treatment of repaired material must be regarded as important and should be effected with every care.

Gluing

5. Synthetic resin adhesive has been used for gluing wooden members in construction of the aircraft. This adhesive must also be used for all repairs, under the conditions, and using the methods described in A.P.2662A, Standard Repairs for Airframes, Sect. 3, Chap. 31. Members glued together with synthetic resin glues cannot be removed in one piece, it being necessary to cut away to the glue line and subsequently remove the glue with a scraper or chisel. This preliminary treatment must be effected with care to avoid damaging adjacent material. When surfaces are being prepared for gluing, any protective material or old glue must be removed and the surfaces sanded properly, an indicator being used to confirm the sanding, before again gluing. Scarfed joints must be clamped and plywood secured by use of tacking strips as shown in fig. 1/1. When the clamping tool shown in fig. 1/2 is used to clamp a ply patch to the fuselage skin, excessive pressure must be avoided in screwing up the wing nuts, otherwise the balsa sandwich might suffer.

Glazing compound

6. In using "Bostik" glazing and sealing compound, the instructions laid down in A.P.1464B, Vol. I, Part 2, Sect. 4, Chap. 6, must be followed.

Preparation of plywood for patch repairing

7. Before a ply patch is offered up to a repair, the mating ply surfaces should be scraped clean (see para. 4 and 5) and sanded, an indicator being used to confirm uniformity of surface. When gluing large patches with casein glue, $\frac{1}{8}$ in. dia. holes should be drilled at 5.0 in. staggered pitch to permit the emission of surplus glue.

Scarf joints in wooden components

8. When making scarf joints the taper must be at least 1 in 15, unless there is a specific

instruction otherwise, on the drawing illustrating the repair. Wooden packing members should always be fixed behind any ply when cutting and making the joint to secure an even taper and a true edge.

Ply bending

9. When a plywood panel with a pronounced curvature has to be renewed it will be found difficult to bend a flat panel to shape. A former should be shaped to reproduce the requisite curvature and the panel should be bradded over the former after being steamed for a suitable period. It should be left on the former until perfectly dry. The use of plywood strips (see fig. 1/1), bradded through the panel to the former, will be found to assist in shaping.

Woodscrew holes

10. When old screw holes are picked up in securing a member the next larger size screws should be used, or screws $\frac{1}{4}$ in. longer. See fig. 1/3 for screwing data.

Drainage holes

11. Care should always be taken when repairing a wooden component lest an air-locked compartment be created. $\frac{3}{8}$ in. dia. holes should be drilled at the lowest corner in any compartment unavoidably created, and the edges of the holes should be treated as treatment "O" (see Table 1).

Bowed tubes

12. The limit of bowing in tubular members which can be considered negligible is 1 in 600. Tubes which are bowed to an extent of 1 in 15 or less need not be replaced if they can be straightened to an eccentricity of 1 in 600. When this is not possible, or when tubes develop cracks in straightening or remain bowed in excess of 1 in 600, the damaged tubes must be replaced. Bowed tubular members must be cold-straightened over properly shaped hardwood blocks.

Rivets

13. The rivets required for repairs will be found listed in Table 3. Light-alloy rivets to Specification D.T.D.327 do not require heat treatment before use, but for duralumin rivets or alclad sheet, the treatment set out in A.P.1464B/3 must be followed. All riveting must be effected with every care to secure a perfect joint. It must always be realised that the fitting of the rivet, its proper length and a correct formation of its head, are of the utmost importance when repairs are being effected to a high-speed aircraft.

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Canopy

14. Repairs to the canopy (Perspex and frame) must on no account be attempted. Any damage will necessitate the fitting of a complete new canopy.

Wear limits

15. In the course of a major inspection it may be found that bolts or holes have become worn. Permissible wear limits for the male and female parts of the principal fittings on the aircraft are given in the appropriate chapters of this publication. Any parts which are worn in excess of the limits given must be considered unserviceable. The illustrations show exploded views of the various parts, with each hole and bolt referenced to the key table (which will be found facing its relevant illustration), where the part numbers and details of limits are listed. The wear limits given are to be applied directly to the nominal diameter and not on top of the existing limits. An example of the application of the information included in a table is shown below. From the table it will be seen that the original maximum

diameter of key No. 2 and 3 is 0.4379 in. (0.4375 in. + 0.0004); the maximum diameter to which the parts may wear before renewal is necessary is 0.4395 in. (0.4375 in. + 0.002) in both cases. In the case of key No. 1 the original minimum diameter is 0.4363 in. (0.4375 in. - 0.0012) and the minimum diameter to which it may wear before renewal is necessary is 0.4350 in. (0.4375 in. - 0.0025). It is shown that plug gauge "YB" is used for checking the holes. If bushes are used on any particular fitting the part number of the appropriate bush will be found noted in the description column indicating that the hole to be checked is in the bush and that, in the event of the wear limit of the hole being exceeded a new bush is to be fitted. Plug gauges are indicated by a symbol of two letters—as example "YB"—the first letter denotes the plug gauge and is engraved on the handle; the second letter denotes the plug diameter and is engraved, with the diameter, on the flat of the plug. Thus plug "YB" is part No. R00Y4 and the plug diameter is 0.4395 in. (see fig. 1/4).

Key No.	Part No.	Description	Nominal Dia.	Female high or male low limit	Maximum wear limit	Gauge
1	L.00559	Engine mounting pick-up bolt	0.4375	-0.0012	-0.0025	Micrometer
2	A.00802	Eye bolt	0.4375	+0.0004	+0.002	YB
3	L.00150-1	Side frame—R.H. and L.H.	0.4375	+0.0004	+0.002	YB

Protective treatment

16. Protective treatment of this aircraft is of primary importance and a complete table of the approved treatments used is given in Table 1

whilst a description of the application is given in Table 2 and the supplementary notes which follow in para. 17.

TABLE I
Protective treatment of various assemblies

Component	Position	Treatment (see Table 2)	
Fuselage	In cockpit forward of seat armour	C	
		B	
	Elsewhere	Internal (non-pressurised)	D.O.I.9223
		Internal (pressurised)	B
Wings	General	External	R and E
		Internal	D
	Inside tank bays	External	Z003557 and E
Inside wheel wells		A	
		D (see note 1)	

TABLE I—continued

Component	Position	Treatment (see Table 2)
Aerofoils	Internal External	D Z003557 and E (see note 1)
Elevator		
Aileron		
Fin		
Split flaps and air brakes		
Rudder Wing tip		
Metal fuel tanks (except drop tanks) and non-metal fuel tanks as specified on drawings	Internal External	None None if self-sealed, D otherwise
Cowlings	Internal External Internal External	D Z003557 and E D Z003557 and E (see note 5)
Engine and general		
Chassis		
Flexible cables		Lanolin D.T.D.121 (dipped)
Chassis structure		D (see note 5)
Accumulator stowage and parts which may be affected by spray from the batteries		J over existing treatment
Light-alloy stampings, forgings and parts made from bar		G after machining, with paint where suitable
Steel stampings, forgings and parts made from bar		H after machining, with paint where suitable as note 5
Magnesium-alloy castings or bar		I and note 3
Fittings made from steel plate		As note 5 with U
Fittings made from dural plate		G with paint as note 1
Steel tubing, excepting chassis	Internal External	F As note 5 with U
Hydraulic units	External	As note 5 with D
Water tank (drinking)	Internal External	G and S G and A D unless other paint is called for on drawing (Z.003557). See also note 1
Interior of boxed light-alloy structures (except where stated otherwise in this table) e.g., wheel doors, flap box, etc.		
Steel springs (except stainless)		H (no paint required)
Light-alloy castings in D.T.D.298, 300, 304, 424 or L.331 (N.B.—Omit paint from parts in fuel, oil and hydraulic systems where in contact with the fluid)		G D finish after machining
Copper, brass, or bronze parts (including bushes and screws) in contact with aluminium, magnesium (including alloys) or steel		H
Ammunition box interior		Phenoglaze lacquer to Drg. No. Z.001201
Dural tubing	Internal External	F G with paint, see note 1
Mild steel tubing used in piping services for fuel, mineral oil or air		AG
Steel airframe gun parts subject to abrasion, e.g. ammunition feeds, empty case or link chutes		AB, see note 4

Table 2
List of protective treatments

Symbol	Process specification	Treatment—description	Number of coats
A	D.T.D.902 (metal) or D.T.D.912 (wood) D.T.D.63A, white	Cleaning Primer Cellulose enamel, white pigmented	1 1
B	D.T.D.902 (metal) or D.T.D.912 (wood) D.T.D.751-5, grey-green	Cleaning Primer Cellulose enamel, grey-green pigmented	1 1
C	D.T.D.902 (metal) or D.T.D.912 (wood) D.T.D.751-5, black (night)	Cleaning Primer Cellulose enamel. black (night) pigmented	1 1
D	D.T.D.902 (metal) or D.T.D.912 (wood) D.T.D.63A, aluminium	Cleaning Primer Cellulose enamel. aluminium pigmented	1 1
E	D.T.D.902 (metal) D.T.D.517 To finish and marking drawing	Cleaning Primer Exterior finish and marking as necessary	1
F	D.T.D.902 D.T.D.279	Cleaning Pigmented resin—hardened lanoline	
G	D.H.A.302 (Hatfield process) D.T.D.901 and 910, Part III	Anodic treatment See note 1	
H	D.H.A.331 or D.T.D.904	Cadmium plating	
I	Hatfield process D or D.T.D.911 D.T.D.235	Chromating Primer U.P.4 Low temperature stove enamel, black, unless otherwise stated	1 1
J	D.T.D.912 B.S.X.19	Cleaning Acid resisting paint	
O	Waterproofing	Paint 342/202, Reference No. 33B/596	As necessary
R	As instructed on drg. No. Z.003558. Z.001233	Madapolam covering—weather-proofing and doping scheme (see O)	
S	D.T.D.909 D.T.D.234	Cleaning Varnish	2
U	D.T.D.902 (metal) or D.T.D.912 (wood) D.T.D.314, grey-green	Cleaning Primer Matt oil varnish. grey-green pigmented	1
V	Hatfield process K	Cleaning of hydraulic pipes (aluminium)	

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Table 2—continued

Symbol	Process specification	Treatment—description	Number of coats
Y	Hatfield process N	Cleaning of oxygen system pipes	
AB	Hatfield process V	Parkerise or phosphate treatment to D.O.I.9224	
AC	D.T.D.906	Metallising (aluminium spray)	
AG	D.H.A.340	Cleaning, protective treatment including black stove enamel	

Notes on protective treatment

17. The following brief notes supplement the information in Tables 1 and 2 showing, in some cases, permissible variations to the scheduled specification.

(1) All aluminium, aluminium-magnesium alloy or aluminium-manganese alloy must be anodised as G in addition to any other specified treatment but for parts made from alclad, pickling treatment to Specification D.T.D.915 or D.H.A.301 may be substituted for anodising. Parts which need drilling, punching or shearing must be anodised before this work, except when holes are not brought to final size until after assembly.

(2) All parts after assembly should be treated in common with surrounding structure; screw threads should be oiled and not painted. Interior treatment to fuel, oil and hydraulic systems is usually not necessary but all aluminium pipes in hydraulic systems should be treated as V.

(3) Where treatment I on magnesium alloy parts had been removed during fitting, local treatment with selenious acid as Specification D.T.D.911 must be used.

(4) Paint must not be used on the internal surfaces of ammunition feeds or ejection systems.

(5) Paint treatment is not sufficient on steel parts except for those listed at the end of this paragraph. One of H, AB or AC treatments must be applied before, and in addition to painting. AB or AC should not be used where parts treated are thinner than 22 s.w.g. Built-up laminated steel plate fittings should not be treated as H, steel tubes should not be treated with either H or AB if there is possibility of liquid being trapped inside. AB should only be used when H is not suitable.

Non-corrodible steels }
 Internal parts of hydraulic systems } Paint treatment only is necessary
 Armour plate }
 Airframe gun parts }

(6) Attachment bolts for fitting components are to be left unpainted and assembled with graphite anti-freeze grease, Specification D.T.D.582, or graphite anti-freeze oil (mineral oil content 80%, graphite 4%). Fittings, bolts, pins and screws which are sliding fits on or in other components are all painted after assembly in common with the surrounding structure.

(7) Aluminium and steel fittings bolted to wooden parts must be painted as O upon contact surfaces only before assembly.

(8) All brass screws or any other brass in contact with aluminium or aluminium alloys should be cadmium plated.

(9) One coat of duralac to Specification D.T.D.369A is used on all contacting surfaces of dissimilar metals.

(10) Bolt holes through wooden members are treated with lanoline as F.

(11) Instrument and electrical panels are finished as A.

(12) Pipes in oxygen systems are treated as Y.

(13) When magnesium alloy parts are attached to wood, a zinc shim should be used between the surfaces which should be coated with duralac and assembled wet.

Notes on tables

18. All dimensions shown anywhere in this Vol. 2, Part 3, are in inches unless stated to be otherwise. Assembly drawing numbers are included in brackets after descriptions of certain parts of components where such a reference is useful. All wood called up for repair or renewal of parts must be grade "A"

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and all plywood must be birch. Where there is little difference in design between a Vampire Mk. 3 components and that of a Sea Vampire Mk. 20, one table only is used for listing the parts of such a component. It should be remembered, however, that a part specifically noted for one mark of aircraft cannot be used for another. Whenever Specifications D.T.D.390 or 610 are quoted in structure illustrations, alclad sheet to Specification L.72 should be used for repair.

Test flying after repairs

19. Variation in the contour of the main plane in certain critical locations forward of the spar may affect the flying qualities of the aircraft even when the distortion is no greater than 0.005 in. In the event of repairs or renewals being necessary anywhere forward of the spar a test flight should be made to check that the work has not caused any alteration in the flying qualities of the aircraft.

Table 3
Repair material

Item	Ref. No.	Part No.	Description	Size	Spec.			
Wood								
1	31A/27	}	Birch ply (grain at 90 deg.)	$\frac{1}{8}$ in.	} V.3			
2	31A/83			2.0 mm.				
3	31A/29			$\frac{1}{8}$ in.				
3A	31A/153	}	Brick ply (grain at 45 deg.)	$\frac{1}{8}$ in.	} V.37 Grade A			
3B	31A/154			$\frac{1}{8}$ in.				
3C	31A/155			$\frac{1}{8}$ in.				
4	31A/141	}	Spruce, available in random widths and lengths up to 9.0 ft. Thicknesses greater than 1.5 in. must be made up in laminations	$\frac{1}{4}$ in. thick	} V.37 Grade A			
5	31A/142			$\frac{1}{2}$ in. thick				
6	31A/143			in. thick				
7	31A/144			in. thick				
8	31A/145			in. thick				
9	31A/146			in. thick				
10	31A/147			1.0 in. thick				
11	31A/148			1.5 in. thick				
Metal sheet								
12	30B/904			}		Manganese aluminium alloy	18 s.w.g.	} L.59
13	30B/1723						10 s.w.g.	
14	30B/1724	}	Aluminium-coated aluminium alloy (Alclad) sheet	12 s.w.g.	} L.72			
15	30B/1726			14 s.w.g.				
16	30B/1728			16 s.w.g.				
17	30B/1730			18 s.w.g.				
18	30B/1732			20 s.w.g.				
19	30B/1734			22 s.w.g.				
20	30B/1736			24 s.w.g.				
Special sections								
21		A.1154	Reynolds section stringer	}	} D.H.			
22		X.124	Standard section					
23		7785	Special section stringer					
Rivets								
24	28Q/6638	AS.2227/404	} Rivet, sn/hd.	$\frac{1}{8}$ in. dia.	} L.69			
25	28Q/6639	AS.2227/405						
26	28Q/6667	AS.2227/406						
27	28Q/6668	AS.2227/408						
28	28Q/9608	AS.2227/504						
29	28Q/6672	AS.2227/506						
30	28Q/6673	AS.2227/508						
31	28Q/7556	AS.2227/604						
32	28Q/10404	AS.2227/606						
33	28Q/6827	AS.2227/608						
34	28Q/6640	AS.2229/404		} Rivet, csk/hd., 90 deg.		$\frac{1}{8}$ in. dia.		
35	28Q/6870	AS.2229/406						
36	28Q/6680	AS.2229/408						
37	28Q/6797	AS.2229/504	} Rivet, csk/hd., 90 deg.	$\frac{3}{16}$ in. dia.				
38	28Q/7017	AS.2229/506						
39	28Q/6831	AS.2229/508						
40	28Q/10411	AS.2229/606						
41	28Q/10564	AS.2229/608						

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Table 3—continued

Item	Ref. No.	Part No.	Description	Size	Spec.
42	28Q/10412	AS.2230/404	Rivet, csk/hd., 120 deg.	1/8 in. dia.	L.69
43	28Q/10681	AS.2230/406			
44	28Q/10696	AS.2230/408			
45	28Q/10872	AS.2230/505		3/16 in. dia.	
46	28Q/10445	AS.2230/516	1/8 in. dia.		
47	28Q/6651	A.G.S.2046/406			
48	28Q/6877	A.G.S.2046/408	Rivet, Chobert, csk/hd.	1/8 in. dia.	
49	28Q/6881	A.G.S.2046/508			
50	28Q/6882	A.G.S.2046/510			
51	28Q/9922	A.G.S.2046/522	Rivet, Chobert, sn/hd.	3/16 in. dia.	
52	28Q/6886	A.G.S.2046/506			
53	28Q/6887	A.G.S.2046/508			
54	28Q/6982	A.G.S.2046/510			
55	28Q/9524	A.G.S.2041/508	Rivet, Chobert, csk/hd.	3/16 in. dia.	D.T.D.720
56	28Q/9525	A.G.S.2041/510			
57	28Q/10645	A.G.S.2041/609		1/16 in. dia.	
58	28Q/6248	A.G.S.2047/406	for 1/8 in. dia. rivet	D.T.D.423	
59	28Q/6726	A.G.S.2047/408			
60	28Q/6755	A.G.S.2047/506	for 3/16 in. dia. rivet		
61	28Q/6725	A.G.S.2047/508			
62	28Q/6824	A.G.S.2047/510	Pin, sealing	for 3/16 in. dia. rivet	
63	28Q/9923	A.G.S.2047/512			
64	28Q/8051	A.G.S.2042/508		for 3/16 in. dia. rivet	
65	28Q/9600	A.G.S.2042/510			
66	28Q/11841	A.G.S.2042/607	for 1/16 in. dia. rivet	S.1	
Screws, washers, etc.					
67	28A/2863	A.G.S.245/22	Screw	4 B.A.	
68	28M/13479	A.29/BP	Nut		
69	28S/6520	A.G.S.250/1A	Woodscrew, brass	No. 3 x 1/4 in.	
70	29D/1135	}	Nail, brass, wire, flathead	1/2 in. x 20 s.w.g.	
71	29D/1137			3/4 in. x 20 s.w.g.	
72	29D/1138			1-0 in. x 20 s.w.g.	
73	29D/2103			1/2 in. x 18 s.w.g.	
74	29D/			3/4 in. x 18 s.w.g.	
75	29D,			1-0 in. x 18 s.w.g.	
Miscellaneous					
76			Washer, langite	1/16 in. thick	
77	33B/556		Madapollam		
78	31A/99/100		Balsa	7/16 in. thick	
79	{ 33C/972		Adhesive, synthetic resin		
	{ 33C/973		Hardner		
80	32B/751		Fabric strip, serrated	2 1/4 in. wide	
81	33C/1427		Adhesive F.1	D.T.D.900/ 4479	
82	33C/1429		Thinners F.T.1		
83	33C/1428		Catalyst F.C.1		

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Special tools

20. In the following table are listed tools and gauges which may be required in effecting repairs described in Repair Leaflets issued in Part 4 of this Vol. 2.

Table 4
Special repair tools

Ref. No.	Part No.	Description	Application
26FK/1523	6703P	Extractor	Power plant retaining bolts
26BA/7253	9043	Spanner, hook	Jettison pipe
26BA/7254	9044	Spanner, hook	Jettison pipe
26BH/26172	6120P1	Spanner	Oil filter cap
26FK/1505	6755P1	Spanner, hook	Controls
26FK/1504	6757P1	Tool	U/c pin withdrawal
26BA/20320	R.S.18B	Block	For squeezers
26BH/20331	R.S.18D	Block	For squeezers
26BA/20301	R.S.18F	Block	For squeezers
26BA/20302	S.T.D.52/1A	Dolly	$\frac{3}{32}$ in. dia. snap-head rivets
26BA/20303	S.T.D.52/1B	Dolly	$\frac{1}{8}$ in. dia. " "
26BA/20304	S.T.D.52/1C	Dolly	$\frac{5}{32}$ in. dia. " "
26BA/20328	S.T.D.52/2A	Dolly, cranked	$\frac{3}{32}$ in. dia. " "
26BA/20305	S.T.D.52/2B	Dolly, cranked	$\frac{1}{8}$ in. dia. " "
26BA/20306	S.T.D.52/2C	Dolly, cranked	$\frac{5}{32}$ in. dia. " "
26BA/20329	S.T.D.52/3A	Dolly, cranked	$\frac{3}{32}$ in. dia. " "
26BA/20307	S.T.D.52/3B	Dolly, cranked	$\frac{1}{8}$ in. dia. " "
26BA/20308	S.T.D.52/3C	Dolly, cranked	$\frac{5}{32}$ in. dia. " "
26BA/20322	S.T.D.52/4A	Dolly, cranked	$\frac{3}{32}$ in. dia. " "
26BA/20309	S.T.D.52/4B	Dolly, cranked	$\frac{1}{8}$ in. dia. " "
26BA/20310	S.T.D.52/4C	Dolly, cranked	$\frac{5}{32}$ in. dia. " "
26BA/20311	S.T.D.52/5A	Dolly, cranked	$\frac{3}{32}$ in. dia. " "
26BA/20323	S.T.D.52/5B	Dolly, cranked	$\frac{1}{8}$ in. dia. " "
26BA/20312	S.T.D.52/5C	Dolly, cranked	$\frac{5}{32}$ in. dia. " "
26BA/20313	S.T.D.68	Dolly, cranked	Dome countersunk head rivets
			All sizes
26FK/1501	S.T.D.151/1	Dolly, stub	$\frac{3}{32}$ in. dia. mushroom head rivets
26FK/1502	S.T.D.151/2	Dolly, stub	$\frac{1}{8}$ in. dia. " " "
26FK/1503	S.T.D.151/3	Dolly, stub	$\frac{5}{32}$ in. dia. " " "
26BA/20522	S.T.D.20	Mandrel	$\frac{5}{32}$ in. dia. drift rivets
26BA/20319	R.S.18A	Snap	For squeezers. $\frac{3}{32}$ in. dia.
26BA/20332	R.S.18C	Snap	For squeezers. $\frac{1}{8}$ in. dia.
26BA/20321	R.S.18E	Snap	For squeezers. $\frac{5}{32}$ in. dia.

TABLE 4—continued

Stores Ref. No.	Part No.	Description	Application
26BA/20333	S.S.997	Snap, rivetting	De Berque. $\frac{1}{8}$ in. dia.
26BA/20335	S.S.998	Snap, rivetting	De Berque. $\frac{5}{32}$ in. dia.
26BA/20315	S.T.D.59A	Snap	$\frac{5}{32}$ in. dia. snap-head rivets
26BA/20324	S.T.D.59B	Snap	$\frac{1}{8}$ in. dia. " "
26BA/20316	S.T.D.59C	Snap	$\frac{5}{32}$ in. dia. " "
26BA/20325	S.T.D.63A	Snap, cranked	$\frac{3}{32}$ in. dia. " "
26BA/20326	S.T.D.63B	Snap, cranked	$\frac{1}{8}$ in. dia. " "
26BA/20336	S.T.D.63C	Snap, cranked	$\frac{5}{32}$ in. dia. " "
26BA/20317	R.S.18J	Squeezers	Solid rivets
26BA/20318	R.S.18P	Squeezers	Solid rivets
26BA/20337	S.T.D.54A	Tool, drawing-up	$\frac{3}{32}$ in. dia. dome countersunk head rivets
26BA/20338	S.T.D.54B	Tool, drawing-up	$\frac{1}{8}$ in. dia. dome countersunk head rivets
26BA/20339	S.T.D.54C	Tool, drawing-up	$\frac{5}{32}$ in. dia. dome countersunk head rivets
26BA/20314	S.T.D.56A	Tool, drawing-up	$\frac{3}{32}$ in. dia. snap-head rivets
26BA/20341	S.T.D.56B	Tool, drawing-up	$\frac{1}{8}$ in. dia. " "
26BA/20342	S.T.D.56C	Tool, drawing-up	$\frac{5}{32}$ in. dia. " "
26BA/20343	S.T.D.67A	Tool, drawing-up	$\frac{3}{32}$ in. dia. dome countersunk head rivets
26BA/20344	S.T.D.67B	Tool, drawing-up	$\frac{1}{8}$ in. dia. " "
26BA/20345	S.T.D.67C	Tool, drawing-up	$\frac{3}{32}$ in. dia. " "
26EW/2407	R3Y/10	Tool dimpling: set comprising	
	R3Y10/1		18
	R3Y10/3		20
	R3Y10/5	Punch	22
	R3Y10/7		24
	R3Y10/2		18
	R3Y10/4	Die	20
	R3Y10/6		22
	R3Y10/8		24
26EW/2408	R3Y/11	Tool dimpling: set comprising	
	R3Y11/1		18
	R3Y11/3		20
	R3Y11/5	Punch	22
	R3Y11/7		24
	R3Y11/2		18
	R3Y11/4	Die	20
	R3Y11/6		22
	R3Y/118		24
26EW/2409	R3Y/12	Tool dimpling: set comprising	
	R3Y12/1		18
	R3Y12/3		20
	R3Y12/5	Punch	22
	R3Y12/7		24
	R3Y12/2		18
	R3Y12/4	Die	20
	R3Y12/6		22
	R3Y12/8		24
26EW/2410	R3Y/13	Tool dimpling: set comprising	
	R3Y13/1		18
	R3Y13/3		20
	R3Y13/5	Punch	22
	R3Y13/7		24
	R3Y13/2		18
	R3Y13/4	Die	20
	R3Y13/6		22
	R3Y13/8		24
26EW/2411	R3Y/14	Tool dimpling: set comprising	
	R3Y14/1		18
	R3Y14/3		20
	R3Y14/5	Punch	22
	R3Y14/7		24
	R3Y14/2		18
	R3Y14/4	Die	20
	R3Y14/6		22
	R3Y14/8		24

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TABLE 4—continued

Stores Ref. No.	Part No.	Description	Application
26EW/2412	R3Y/15 R3Y15/1 R3Y15/3 R3Y15/5 R3Y15/7 R3Y15/2 R3Y15/4 R3Y15/6 R3Y15/8	Tool dimpling: set comprising Punch Die	18 20 22 Bottom skin $\frac{1}{4}$ in. dia., 120 degree 24 18 20 22 24
26EW/2413	R3Y/16 R3Y16/1 R3Y16/3 R3Y16/5 R3Y16/7 R3Y16/2 R3Y16/4 R3Y16/6 R3Y16/8	Tool dimpling: set comprising Punch Die	18 20 22 Top skin $\frac{3}{8}$ in. dia., 120 degree 24 18 20 22 24
26EW/2414	R3Y/17 R3Y17/1 R3Y17/3 R3Y17/5 R3Y17/7 R3Y17/2 R3Y17/4 R3Y/176 R3Y17/8	Tool dimpling: set comprising Punch Die	18 20 22 Bottom skin $\frac{3}{8}$ in. dia. 120 degree 24 18 20 22 24
26FE/1077 26FE/1078 26FE/1079 26FE/1080 26FE/1081	R.00.Y.1 R.00.Y.2 R.00.Y.3 R.00.Y.4 R.00.Y.5	Gauges, plug	Special gauges wear limit for engine mounting fittings, fuselage fittings, mainplane attachment fittings, control fittings, fin, rudder and tail plane fittings, elevator fittings, main undercarriage and nose wheel fittings
26FE/1082	R.00.Y.35A R.00.Y.17 R.00.Y.18 R.00.Y.19 R.00.Y.20 R.00.Y.21 R.00.Y.10 R.00.Y.11 R.00.Y.12 R.00.Y.13 R.00.Y.30 R.00.Y.34 R.00.Y.39	Tool kit for main plane root end fittings, comprising:— Reamers, oversize Guide bush Gauge, plug Key, ratchet Screwdriver, special Spanner, special Adjustable countersinking tool set, comprising:—	Main plane attachment fittings oversize For use with reamers. For main plane oversize attachment fitting For use with reamers
26FE/1083	R.OD.Y.48A S.T.D.200/1 S.T.D.200/2 S.T.D.200/3 S.T.D.200/4 S.T.D.200/5 S.T.D.200/6 S.T.D.200/7 S.T.D.200/8	Tool, countersinking, 90 degree Tool, countersinking 120 degree	$\frac{3}{8}$ in. dia. $\frac{1}{2}$ in. dia. $\frac{5}{8}$ in. dia. $\frac{7}{8}$ in. dia. $\frac{3}{4}$ in. dia. $\frac{1}{2}$ in. dia. $\frac{3}{8}$ in. dia. $\frac{1}{8}$ in. dia.

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TABLE 4—continued

Stores Ref. No.	Part No.	Description	Application
	R.00D./118	Template, main plane rib No. 11	} Fig. 6/57
	R.00D./119	Template, main plane rib No. 12	
	R.00D./120	Template, main plane rib No. 13	
	R.00D./121	Template, main plane rib No. 14	

Alternative bolts

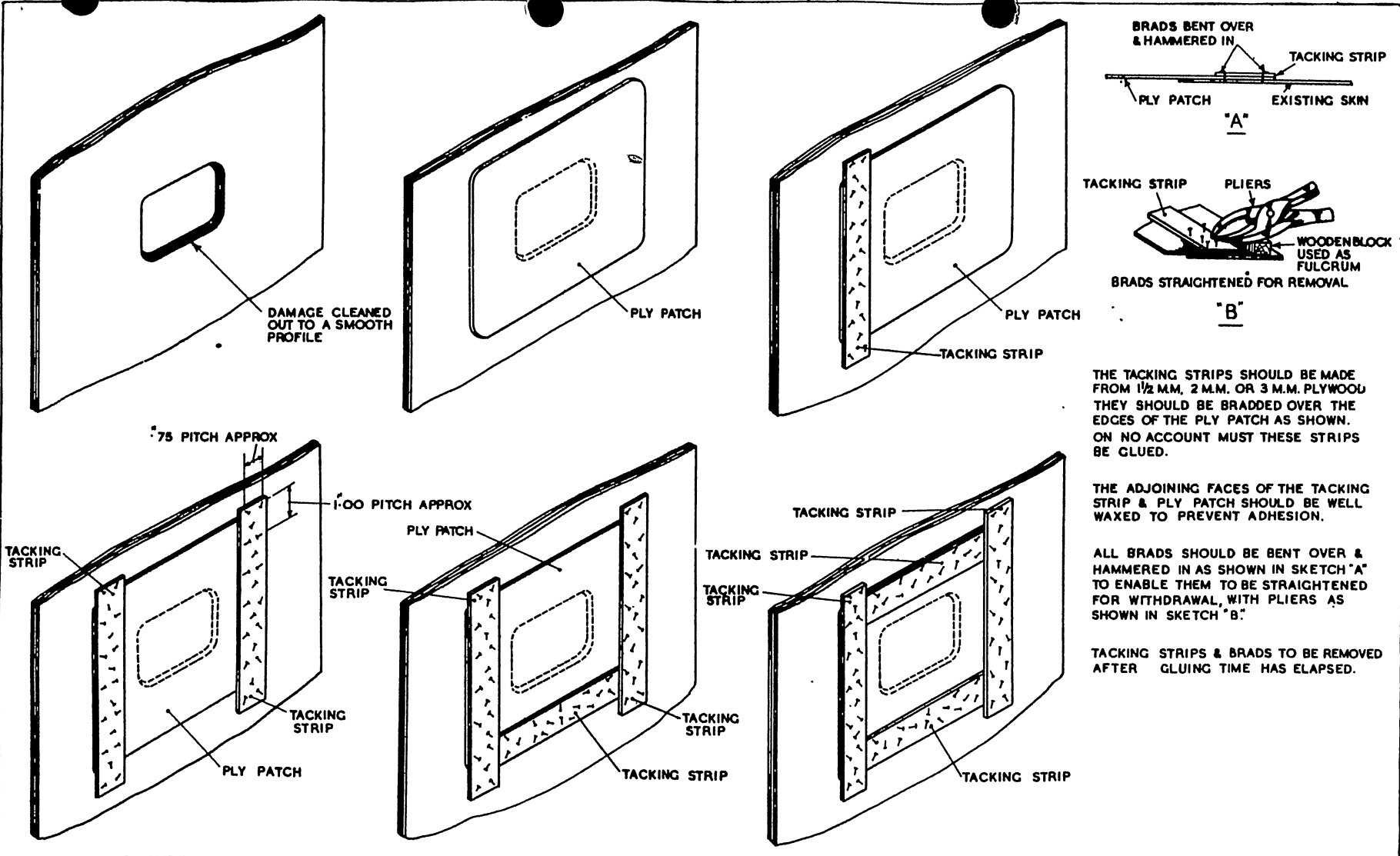
21. Bolts having part numbers commencing A.1/- are no longer provisioned for replacement purposes and have been superseded by bolts with part numbers commencing A.25/-. Any references in this Volume to A.1/- bolts, e.g. in the wear limit table for Fig. 4/32, should be read as A.25/-. The suffix numbers and letters denoting lengths and diameters respectively remain as before. Hence a bolt shown as part number A.1/6G should be replaced by a bolt with part number A.25/6G.

Fitting instructions for replacement components

22. When replacement components, such as canopies, are not fully interchangeable and are supplied with trim allowances, etc. the fitting instructions may be beyond the scope of the usual *dismantling and assembly* instructions in the Vol. 1. When further fitting instructions are required, they will be incorporated in this Vol. 2, Part 3 in an APPENDIX F to the relevant chapter.

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(A.L.24, May 57)



THE TACKING STRIPS SHOULD BE MADE FROM 1 1/2 MM, 2 M.M. OR 3 M.M. PLYWOOD THEY SHOULD BE BRADDED OVER THE EDGES OF THE PLY PATCH AS SHOWN. ON NO ACCOUNT MUST THESE STRIPS BE GLUED.

THE ADJOINING FACES OF THE TACKING STRIP & PLY PATCH SHOULD BE WELL WAXED TO PREVENT ADHESION.

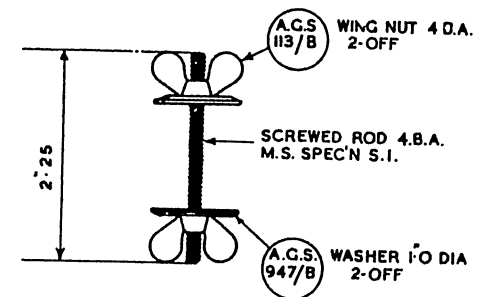
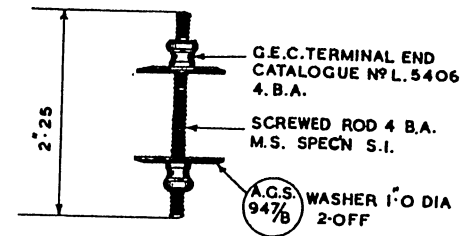
ALL BRADS SHOULD BE BENT OVER & HAMMERED IN AS SHOWN IN SKETCH "A" TO ENABLE THEM TO BE STRAIGHTENED FOR WITHDRAWAL, WITH PLIERS AS SHOWN IN SKETCH "B".

TACKING STRIPS & BRADS TO BE REMOVED AFTER GLUING TIME HAS ELAPSED.

FIG 1/1

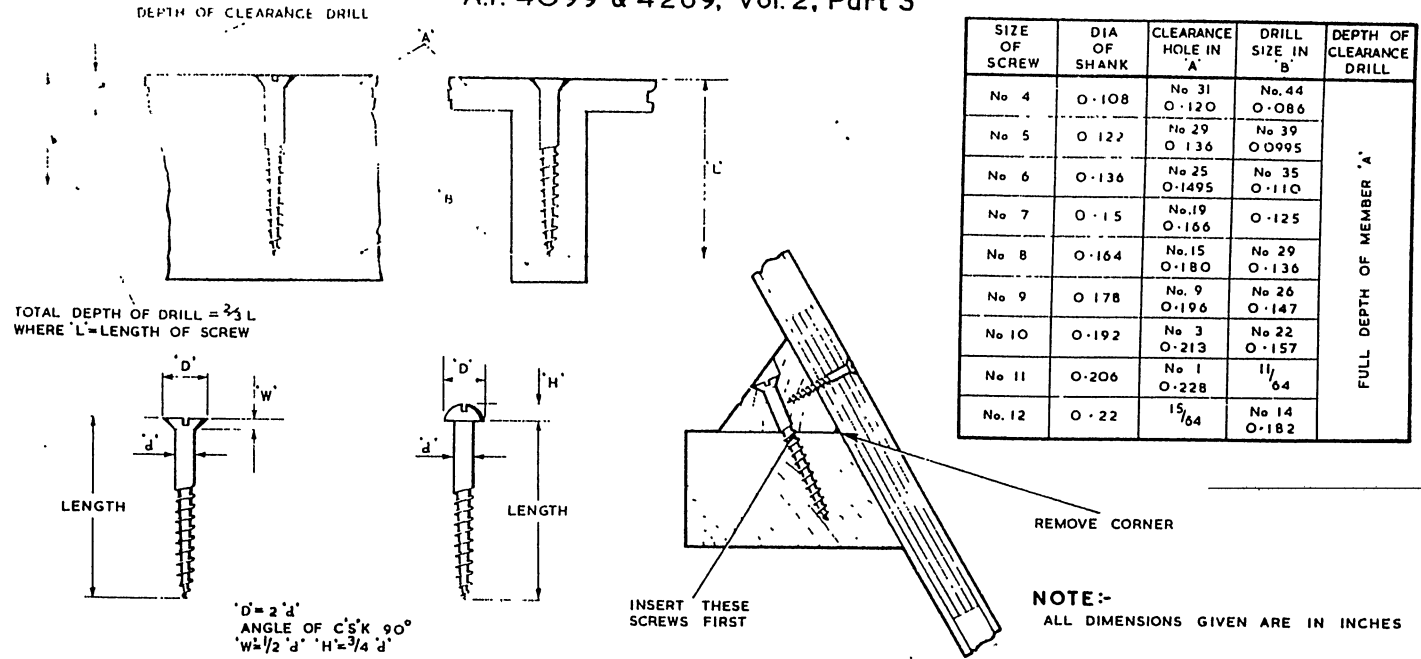
METHOD OF APPLYING TACKING STRIPS

FIG 1/1



This leaf issued with A.I. No. 15, Nov. 1955

A.P. 4099 & 4269, Vol. 2, Part 3

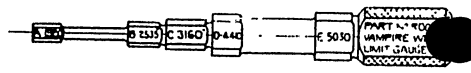


INSTRUCTIONS FOR GLUING & SCREWING JOINTS IN WOODEN MEMBERS

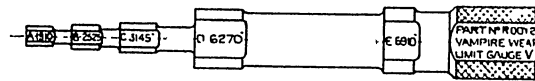
1. THE SURFACES TO BE JOINED, PARTICULARLY THE GLAZED SURFACES OF PLYWOOD, SHOULD BE SLIGHTLY ROUGHENED WITH GLASS PAPER BEFORE APPLYING GLUE
2. ANY DUST FORMED BY THE ROUGHENING PROCESS ON PLYWOOD SURFACES SHOULD BE REMOVED WITH A DAMP CLOTH AND THE PLYWOOD ALLOWED TO LIE UNTIL WATER STAINS DISAPPEAR
3. GLUE MUST NOT BE APPLIED TO A WET SURFACE
4. GLUE TO BE APPLIED IN ACCORDANCE WITH A.P. 2662, CHAR. 32
5. WOODSCREWS, WHERE CALLED FOR, ARE TO BE INSERTED WHILE GLUE IS WET. TACKING STRIPS, IF USED, SHOULD CONTAIN HOLES THROUGH WHICH THE SCREWS CAN BE INSERTED
6. WHERE CORNER STRENGTHENING BLOCKS ARE ADDED WITH WOODSCREWS AT DIFFERENT ANGLES, THOSE WITH GREATER WEDGING EFFECT MUST BE INSERTED FIRST (SEE ABOVE FIGURE)
7. WHERE PRESSURE IS APPLIED TO OBTAIN GLUED JOINT ON RIGHT-ANGLED SURFACES, SUCH AS SCARF JOINTS IN STRINGERS, CARE SHOULD BE TAKEN TO ENSURE THAT ONE SURFACE IS NOT CLAMPED OR SCREWED TO THE DETRIMENT OF THE OTHER
8. ANY SURPLUS FILLETS OF GLUE SHOULD BE REMOVED WHILE STILL WET AND MUST ON NO ACCOUNT BE REMOVED WITH A CHISEL WHEN DRY.

Fig. 1/3

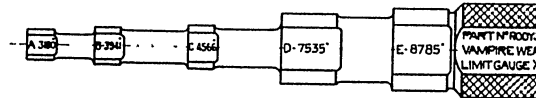
Fig. 1/3. Gluing and screwing data



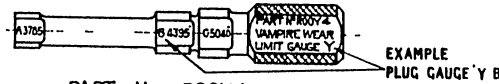
PART No. ROOY1.



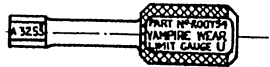
PART No. ROOY2.



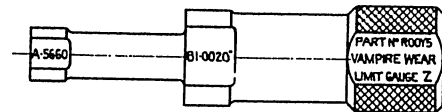
PART No. ROOY3.



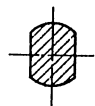
PART No. ROOY4.



PART No. ROOY54



PART No. ROOY5.



SCRAP VIEW.

NOTE:- PLUG GAUGES ARE MADE TO TOP LIMITS i.e. NO GO, AND HAVE FLATS AS SHOWN IN SCRAP VIEW. THIS IS TO ENABLE THE OPERATOR TO FIND OUT IF THE HOLE IS ELONGATED BY TRYING THE PLUG GAUGE IN VARIOUS POSITIONS.

FIG. I/4 SPECIAL PLUG GAUGES

RESTRICTED

CHAPTER 2

and for print 9-3-62

**ENGINE MOUNTING
AND COWLING**

CHAPTER 2

ENGINE MOUNTING AND COWLING

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ENGINE MOUNTING	PARA.
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Wear limits	3
ENGINE COWLING	
General	4
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Flange repair to engine cowling bulkheads	2/3
Stiffener repair to engine cowling	2/4
	2/5

ENGINE MOUNTING

General

1. The engine mounting is situated at the rear of the fuselage and comprises two welded structures of tubular steel. The tubes are to Specification T.45, and are not repairable at all. Replacement of the mounting or bracing members may be effected if damage makes this necessary. The power plant is dealt with in detail in A.P.4121A & B, Vol. 2, Part 3, to which reference should be made for further information.

Negligible damage

2. Smooth, isolated dents free from cracks, fractures or abrasions which do not exceed $\frac{1}{16}$ th of a tube diameter in depth, may be considered negligible provided they do not occur in the middle third of the affected member. The limit of bowing which may be considered negligible is defined in para. 12, Chap. 1.

Wear limits

3. Wear limits for all male and female parts of the engine mounting are given in the table facing fig. No. 2/1. Reference should be made to para. 15, Chap. 1, for instructions in the application of the data given in this table.

ENGINE COWLING

General

4. The engine cowling comprises an aluminium alloy and alclad skin reinforced with bulkheads and stringers of the same material. The arresting hook fairing is illustrated on fig. 2/2A.

Negligible and repairable damage

5. The definitions of negligible and repairable damage, will be found in the following table, where also reference is made to the figures illustrating the methods to be adopted in effecting repairs within the limits given.

ENGINE COWLING

Definitions of negligible and repairable damage

Component	Definition of damage		Repair fig. No.	Repair item No.
	Negligible	Repairable		
Skin	Dents or bruises 3.0 in. dia., 0.15 in. deep, 12.0 in. apart	0.5 in. dia., 12.0 in. apart 1.0 in. dia., 12.0 in. apart	2/3	17, 38, 45, 51
Bulkheads	Dents or bruises 1.0 in. dia., 0.1 in. deep, 12.0 in. apart	2.0 in. dia., 18.0 in. apart 3.0 in. dia., 24.0 in. apart		
Stiffeners	Dents or bruises 1.0 in. x 0.5 in., 0.1 in. deep, 12.0 in. apart	1.0 in. x 1.0 in., 18.0 in. apart 1.0 in. long. One repair only for each stiffener	2/5	19, 29, 53

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ENGINE MOUNTING

Key to items on fig. No. 2/1

Assembly L.0020

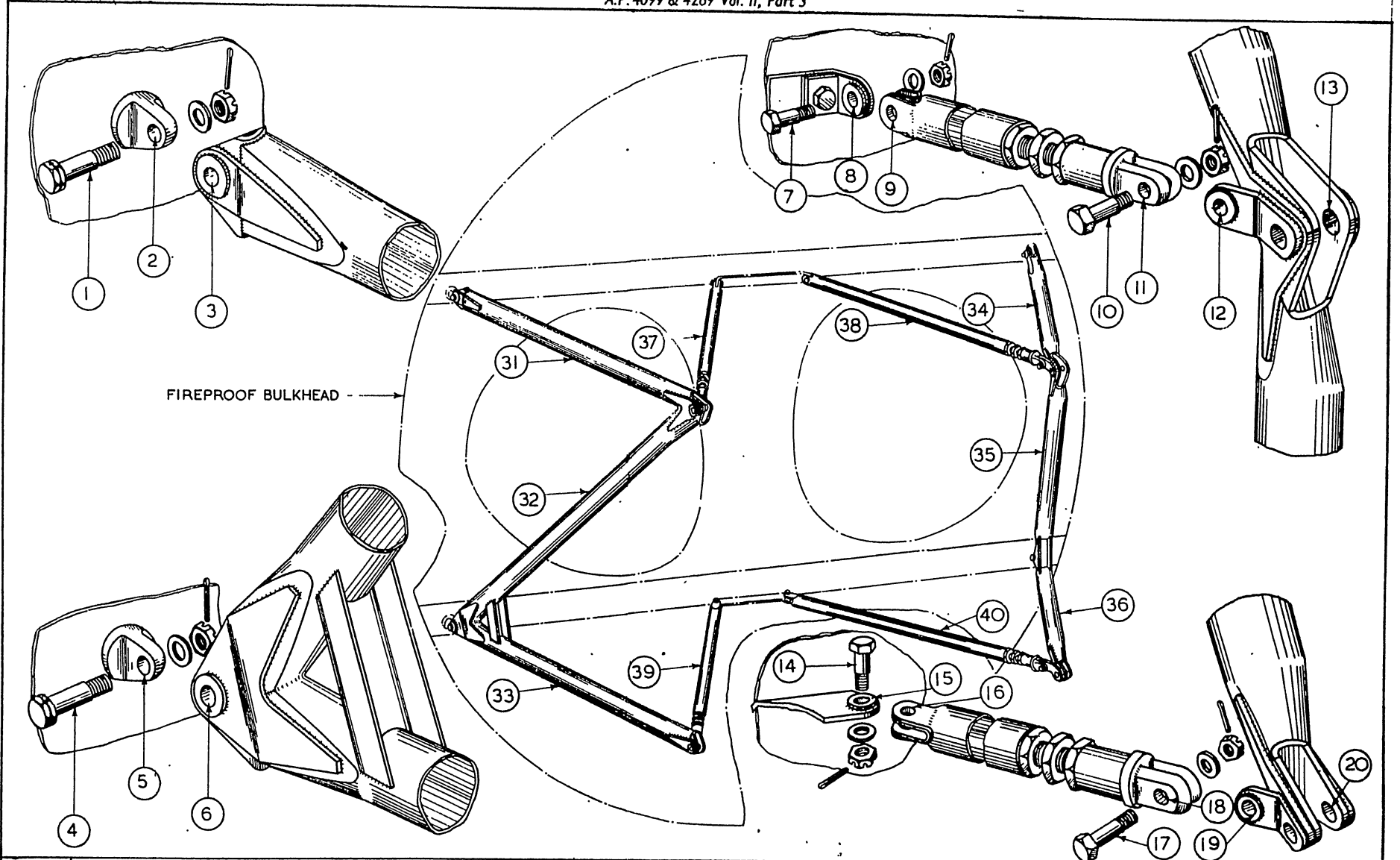
Item No.	Sub-assembly No.	Part No. of tube	Outside diameter	S.W.G.	Specification
31	L.00151	L.00154 ND	1 1/4 in.	17	T.45
32	L.00151	L.00155 ND	1 1/4 in.	17	T.45
33	L.00151	L.00156 ND	1 1/4 in.	17	T.45
34	L.00150	L.00154 ND	1 1/4 in.	17	T.45
35	L.00150	L.00155 ND	1 1/4 in.	17	T.45
36	L.00150	L.00156 ND	1 1/4 in.	17	T.45
37	L.001269	L.001255	1 1/4 in.	17	T.45
38	L.001269	L.001255	1 1/4 in.	17	T.45
39	L.001268	L.001254	1 1/4 in.	17	T.45
40	L.001268	L.001254	1 1/4 in.	17	T.45

ENGINE MOUNTING FITTINGS

Limits of wear for items shown on fig. No. 2/1

Key No.	Part No.	Description of Part	Nominal Diameter	Female High or Male Low Limits	Maximum Limits Wear	Plug Gauge
1	L.00559	Engine mounting pick-up bolt	0.4375	-0.0012	-0.0025	Micrometer
2	A.00802	Eye bolt	0.4375	+0.0004	+0.0020	YB
3	L.00150-1	Side frame—R.H. and L.H.	0.4375	+0.0004	+0.0020	YB
4	L.00559	Engine mounting pick-up bolt	0.4375	-0.0012	-0.0025	Micrometer
5	A.00803	Eye bolt	0.4375	+0.0004	+0.0020	YB
6	L.00150-1	Side frame—R.H. and L.H.	0.4375	+0.0004	+0.0020	YB
7	A.25.5G	Bolt, standard	0.3125	-0.0035	-0.0045	Micrometer
8	L.00168	Bracket, top bracing strut	0.3160	+0.0075	+0.0095	UA
9	L.001255 or L.001263	Bracing struts, top	0.3160	+0.0075	+0.0095	UA
10	A.25.5G	Bolt, standard	0.3125	-0.0035	-0.0045	Micrometer
11	L.00171	Fork-end, bracing struts	0.3160	+0.0075	+0.0095	UA
12	L.00150-1	Bracing strut attachment lug	0.3160	+0.0075	+0.0095	UA
13	L.00150-1	Side frame—R.H. and L.H.	0.4375	+0.0004	+0.0020	YB
14	A.25.5G	Bolt, standard	0.3125	-0.0035	-0.0045	Micrometer
15	L.00169	Bracket, bottom bracing struts	0.3160	+0.0075	+0.0095	UA
16	L.001254 or L.001262	Bracing strut, bottom	0.3160	+0.0075	+0.0095	UA
17	A.25.5G	Bolt, standard	0.3125	-0.0035	-0.0045	Micrometer
18	L.00171	Fork-end, bracing struts	0.3160	+0.0075	+0.0095	UA
19	L.00150-1	Bracing strut attachment lug	0.3160	+0.0075	+0.0095	UA
20	L.00150-1	Side frame—L.H. and R.H.	0.4375	+0.0004	+0.0020	YB

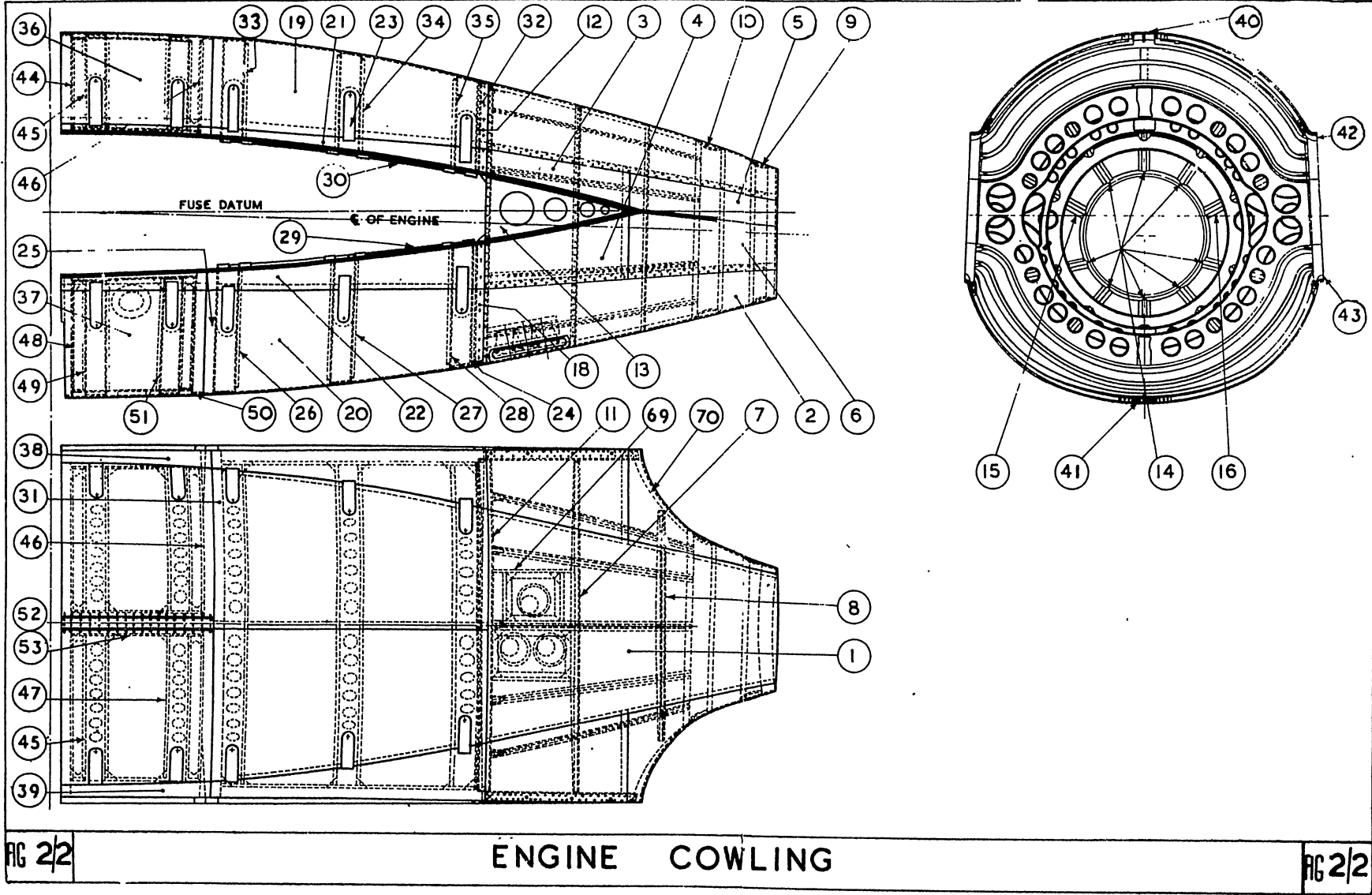
RESTRICTED



ENGINE COWLING (Assembly L.001A)
Key to items shown on fig. No. 2/2

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	L.H.	R.H.					
1	L.00865ND		Alclad	D.T.D.390 or L.38	20	Upper centre skin	Assembled on L.00853A
2	L.00864ND				20	Lower centre skin	
3	L.00860ND	L.00863ND	Alum. or Mang. alum.	L.16 or D.T.D.213	20	Upper front skin	
4	L.00867ND	L.00862ND			20	Lower front skin	
5	L.00868ND	L.00869ND	Alclad	D.T.D.390 or L.38	20	Upper rear skin	
6	L.00870ND	L.00871ND			20	Lower rear skin	
7	L.0075A		Alclad	D.T.D.390 or L.38	20	Centre bulkhead	Assembled on L.00853A
8	L.00856				18	Rear bulkhead	
9	L.00854		Mang. alum.	D.T.D.213	18	Aft ring	
10	L.00855				18	Forward ring	
11	L.00857		Alclad	D.T.D.390 or L.38	20	Front bulkhead	
12	L.00487ND				20	Upper landing	
13	L.0085	L.0086	Alclad	D.T.D.390 or L.38	18	End rib	
14	L.00845ND					Stiffener	
15	L.00897ND		Section X.124			Stiffener	
16	L.00896ND					Stiffener	
18	L.00488	L.00488	Section X.143			Lower landing	
19	L.00497ND	L.00498ND				20	Upper panel skin
20	L.00505ND	L.00506ND	Alclad	D.T.D.390 or L.38	18	Lower panel skin	Assembled on L.0057 and 8A
21	L.00499ND	L.00500ND			18	Upper panel skin fillet	
22	L.00507ND	L.00508ND	18	Lower panel skin fillet			
23	L.0053A		Assembly of toggle fastener				
24	L.00502ND		Alclad	Section Z981481/D	18	Stiffener	Assembled on L.0057 and 8A
25	L.00501ND					Stiffener	
26	L.00601		Alclad	D.T.D.390 or L.38	18	Channel	
27	L.00603				18	Channel	
28	L.00605		Section Z981481/D		18	Channel	
29	L.00503ND	L.00504ND			Stiffener		
30	L.00495ND	L.00495ND	Stiffener				
31	L.00493ND		Stiffener				
32	L.00494ND		Stiffener				
33	L.00600		Alclad	D.T.D.390 or L.38	18	Channels	
34	L.00602				18	Channels	
35	L.00604		Alclad	D.T.D.390 or L.38	18	Channels	
36	L.00641ND	L.00647ND			18	Upper door skin	
37	L.00652ND	L.00658ND	Alum. alloy	Section A.690	18	Lower door skin	Assembled on L.0050 and 51A
38	L.00643ND	L.00649ND				18	
39	L.00654ND	L.00660ND	Alclad	D.T.D.390 or L.38	18	Lower skin fillet	
40	L.0065				Hinge rail		
41	L.0066		Alclad	D.T.D.390 or L.38	18	Hinge rail	
42	L.00651ND	L.00645ND			18	Special section-edge stiffener (upper)	
43	L.00656ND	L.00662ND	18	Special section-edge stiffener (lower)			
44	L.00644ND	L.00650ND	Section Z981481/D			Stiffening section	
45	L.00421	L.00422	Alclad	D.T.D.390 or L.38	18	Channel stiffener	
46	L.00642ND	L.00648ND	Section Z981481/D			Stiffening section	
47	L.00425	L.00426	Alclad	D.T.D.390 or L.38	18	Channel stiffener	
48	L.00655ND	L.00661ND	Section Z981481/D			Stiffening section	
49	L.00423	L.00424	Alclad	D.T.D.390 or L.38	18	Channel stiffener	
50	L.00653ND	L.00659ND	Section Z981481/D			Stiffening section	
51	L.00427	L.00428	Alclad	D.T.D.390 or L.38	18	Channel stiffener	
52	L.00646ND	L.00646ND	Section X.142			Centre stiffening, upper section	Assembled on L.0050 and 51A
53	L.00657ND	L.00657ND				Centre stiffening, lower section	
69	L.00950		Mounting of downward identification lamps				
70	L.00892		Alclad	D.T.D.390	20	Trailing edge stiffener	

Note . . . Items 54 to 68 are parts of the arresting hook assembly and with item 17 are shown on the table overleaf.



ARRESTING HOOK FAIRING (Assembly L.002216)

Mark 20 Aircraft only

Key to Items shown on fig. No. 2/2A

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	Port	Starboard					
17	L.002538A	L.002538	Alum. Mag.	D.T.D.213	20	Mounting of downward identification lamps Top skin (front)	
54	L.002252ND	L.002252ND					
55	L.002249ND	L.002250ND					
56	L.002260ND	L.002260ND					
57	L.002220	L.002220					
58	L.002221	L.002222	Alclad	D.T.D.390	20	Lower skin	
59	L.002223	L.002224					
60	L.002225	L.002226					
61	L.002227	L.002228					
62	L.002229	L.002229					
63	L.002251ND	L.002251ND	Stainless steel	D.T.D.171	20	Rear skin	
64	L.002235ND	L.002236ND	Alclad	D.T.D.390	20	Centre member	
65	L.002231	L.002232					
66	L.002233	L.002234					
67	L.002261ND	L.002261ND	Stainless steel	D.T.D.171	18	Diaphragm No. 1 (top)	
68	L.002371ND	L.002371ND					
							Diaphragm No. 2 (top)
							Diaphragm No. 3 (top)
							Diaphragm No. 4 (top)
							Diaphragm No. 5 (top)
							Bottom skin
							Side channel
							Diaphragm No. 1 (bottom)
							Diaphragm No. 2 (bottom)
							Rear diaphragm assembled on L.002372
							Fairing assembled on L.002370A

Note . . . The items shown above are exclusive to Sea Vampire Mark 20 Aircraft. For details of the rest of the members of the assembly see key to fig. 2/2.

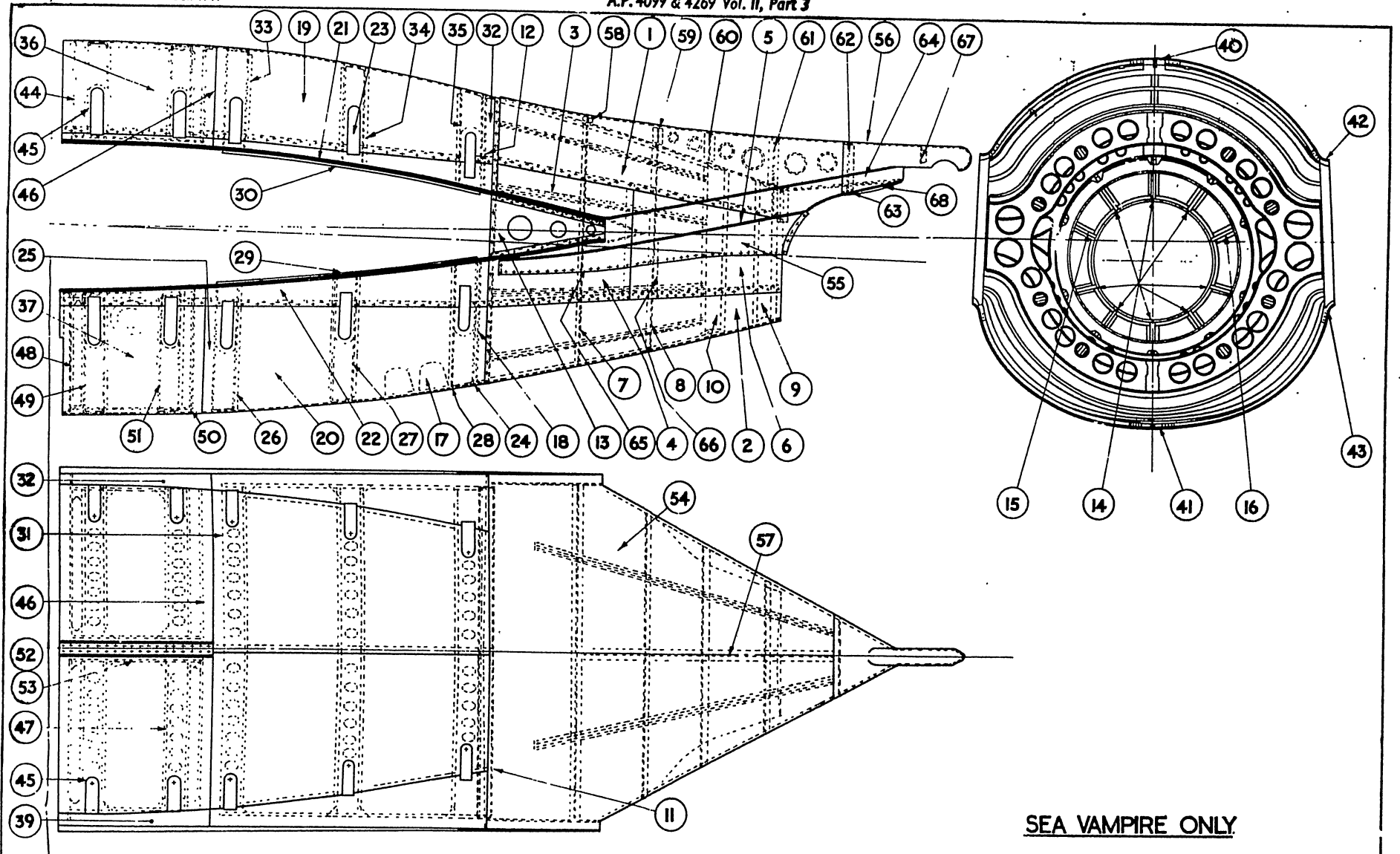
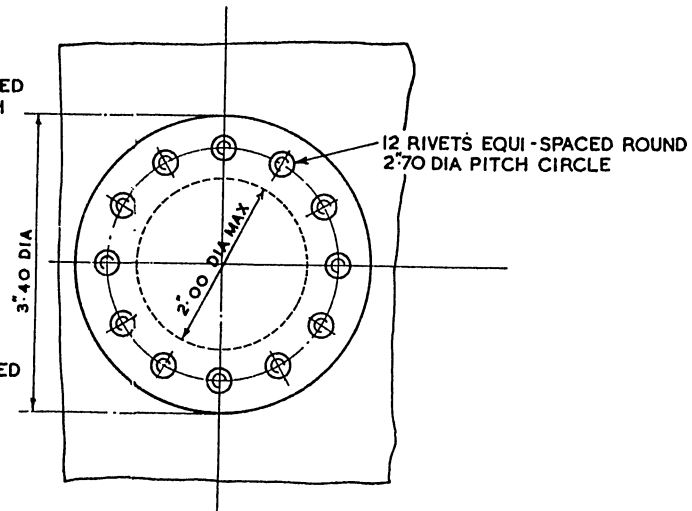
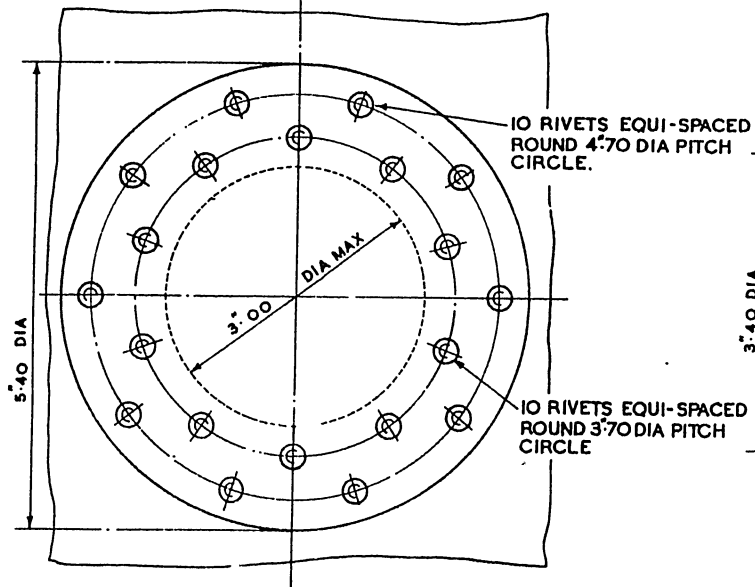
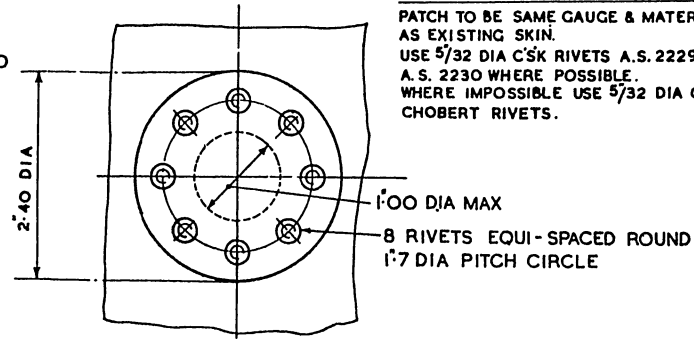
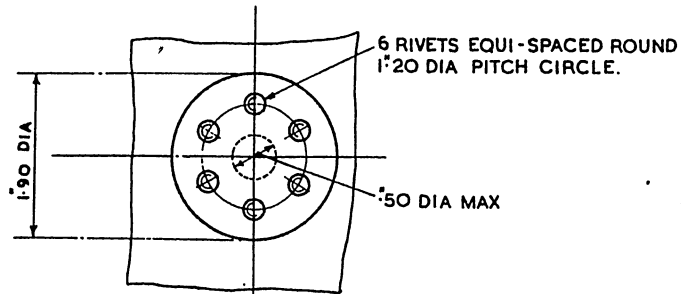


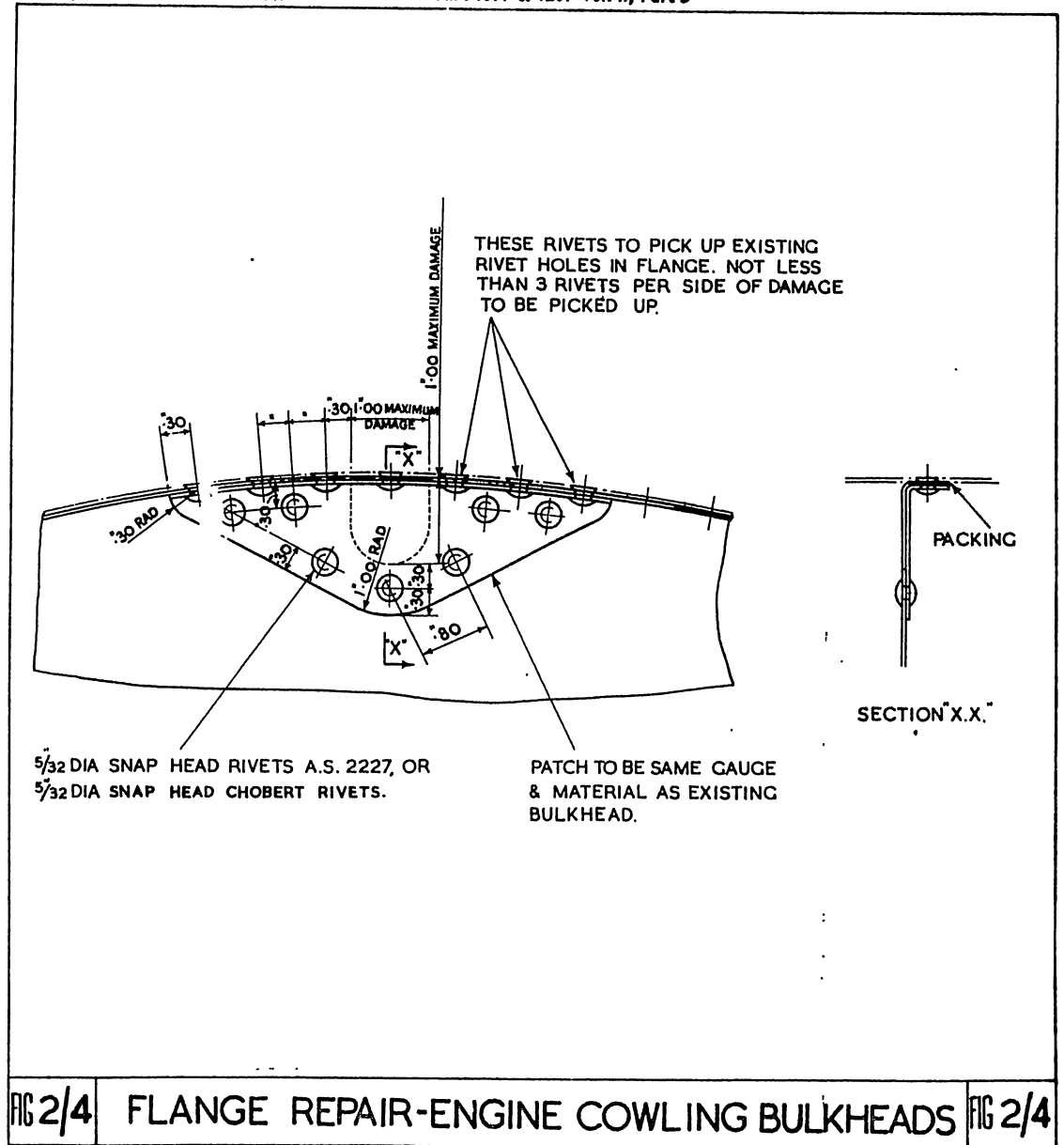
FIG.2/2A

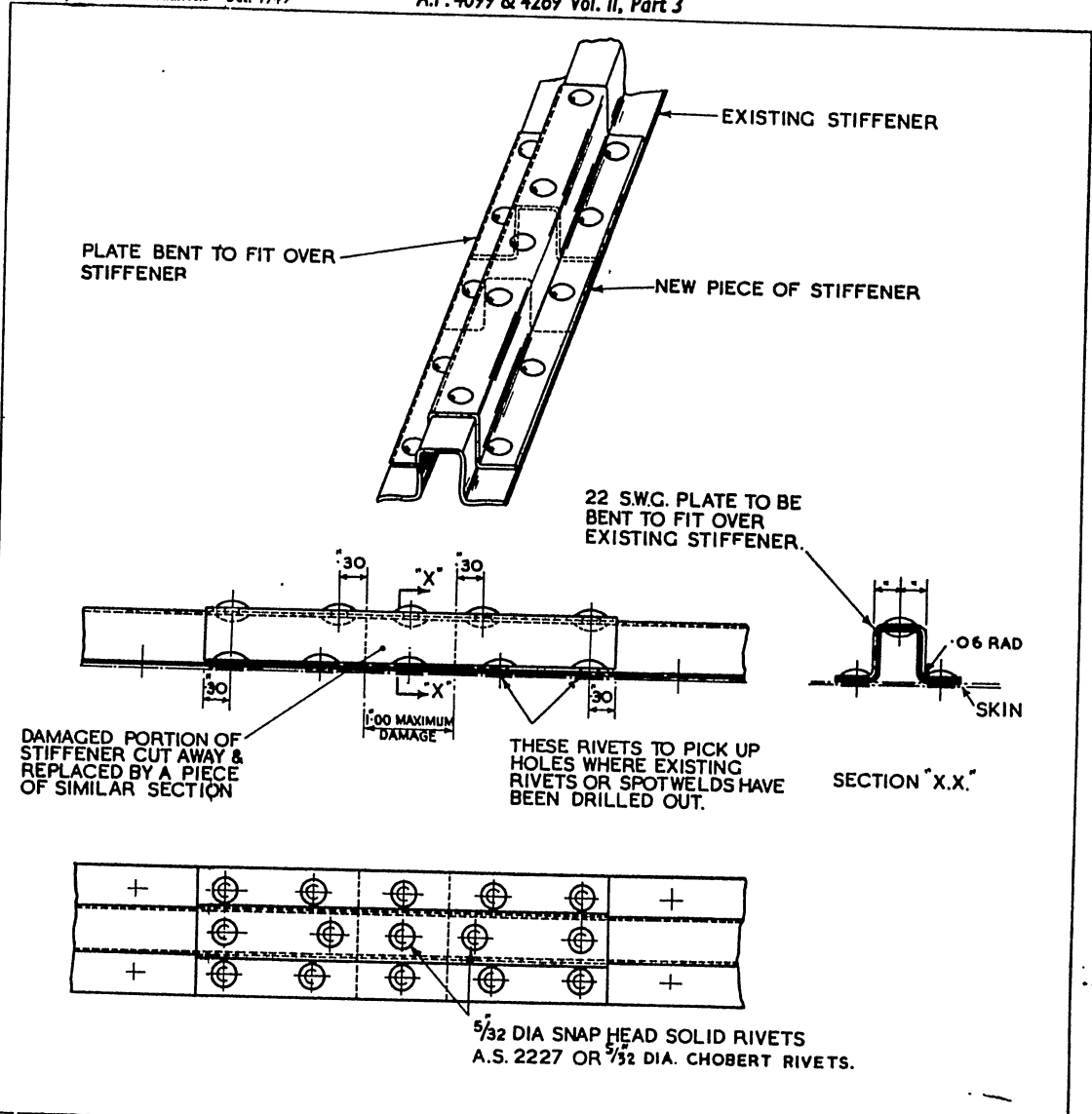
ENGINE COWLING & ARRESTING HOOK FAIRING.

FIG.2/2A

NOTES APPLYING TO ALL REPAIRS.
PATCH TO BE SAME GAUGE & MATERIAL
AS EXISTING SKIN.
USE 5/32 DIA C'SK RIVETS A.S. 2229 OR
A.S. 2230 WHERE POSSIBLE.
WHERE IMPOSSIBLE USE 5/32 DIA C'SK
CHOBERT RIVETS.







CHAPTER 3

SYSTEMS

CHAPTER 3

SYSTEMS

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Tanks

General information

1. There are nine fuel tanks in the aircraft. The main tank is constructed of manganese aluminium alloy to Specification D.T.D.213A with self sealing covering to Specification D.T.D.1053 (see fig. 3/1) and is in the main fuselage between the firewall and No. 3 bulk-head. The wing tanks, items 6, 29, 32 and 33, may be of similar construction to the main tank in some Mark 3 aircraft but usually they are Marston bag-type tanks of "Formvar" material to Specification D.T.D.1094. All tanks are self sealing and repair methods for large damage to the Marston tanks are now in process of perfecting. Two additional drop tanks are fitted (item 41) to the underside of the main plane at rib No. 6. All fuel passes into the main tank for delivery to the engine. The hydraulic tank, of similar material to the main tank, is fitted to the canopy fairing and, with the general run of hydraulic pipes, is shown

in fig. 3/2. The pneumatic, vacuum, oxygen and fire extinguisher systems are shown in fig. No. 3/4, 3/5, and 3/6, and facing each will be found a key table referenced to the various items, together with particulars of replacements. Further details can be ascertained by reference to A.P.4117A.

Pressure-testing after repair

2. After repair, a tank must be tested as set out in the following table before being refitted to the aircraft:—

Tank	Material	Test pressure per sq. in.
Main fuel tank	Manganese alum.	4.1 lb.
Wing fuel tanks	Formvar	1.0 lb.
No. 1		
No. 2		
No. 3		
No. 4		
Hydraulic tank	Manganese alum.	2.25 lb.

Tank straps

3. Usually the tank attachment straps are replaced complete with end fittings but, as an emergency repair, the end fittings can be detached from a damaged strap and a new strap riveted to them.

Piping

4. The illustrations, together with the key tables facing, give a list of the pipes used in the various systems, and fig. No. 3/8 shows the assembly of fuel pipe end fittings.

Negligible and repairable damage definitions

5. The table overleaf defines permissible negligible damage and lists the illustrations of repairs for the defined damage.

TANKS, TANK STRAPS AND PIPING
Definitions of negligible and repairable damage

Component	Damage definition		Repair fig. No.	Repair material item No.	Key diagram fig. No.
	Negligible	Repairable			
Metal tanks, fuel and hydraulic	Small, smooth dents which do not occur near baffles or external fittings, nor are close to corners	Patch repair to manganese aluminium tanks (items 1, 2 and 3) for damage, 4.0 in. dia.	3/7	12. 62	3/1
Tank straps	Dents up to 0.25 in. dia.	Replacement of end fittings	See para. 3 above	24	3/1 to 3/6
Piping— Rigid	Smooth, isolated dents up to 0.02 in. deep	In accordance with instructions in A.P.1464D, Vol. 1, Part 2, Sect. 3, Chap. 3			
Flexible	—	Replacement of end fittings	3/8		

FUEL AND VENTING SYSTEM

Key to items shown on Fig. 3/1

Mark 3 Aircraft

Key No.	Part No.		Material	Specification	S.W.G.	Diameter	Description	
	L.H.	R.H.						
1	P.00917	P.00917	Aluminium alloy	D.T.D.310	20	3/4 in. o/d	Fuel transfer pipe	
2	—	Flexible	Hose	—	—	1/2 in. i/d	Hose connection	
3	P.002579ND	P.002579ND	Aluminium alloy	D.T.D.310	20	3/4 in. o/d	Fuel transfer pipe	
4	P.001907ND	P.001907ND				3/4 in. o/d		
5	P.001906ND	P.001906ND				3/4 in. o/d		
6	AM.528 P	AM.528 S				3/4 in. o/d		
7	P.00274ND	P.00274ND	Aluminium alloy	D.T.D.310	20	3/4 in. o/d	Wing tank No. 1	
8	P.00444A	—	Aluminium	T.9	—	—	Fuel transfer pipe	
9	—	Flexible	Hose	—	—	1 in. i/d	Fuel vent pipe	
10	—	Flexible	Hose	—	—	1/2 in. i/d	Hose connection	
11	P.00306ND	—	Aluminium alloy	D.T.D.310	20	3/4 in. o/d	Vent pipe	
12	L.002200ND	—				22	1 in. o/d	Drain pipe
13	P.001193AND	—				20	1 in. o/d	Vent pipe
14	L.001157ND	—				22	1 in. o/d	Drain pipe
15	P.00304ND	—				20	1 in. o/d	Vent pipe
16	P.001987A	—	Aluminium	T.9	17G	1-0 in. o/d	Tank vent pipe	
17	P.001913ND	P.001913ND	Aluminium alloy	D.T.D.310	20	3/4 in. o/d	Fuel vent pipe	
18	P.001918ND	P.001918ND				3/4 in. o/d	Vent pipe	
19	P.001905ND	P.001905ND				1-0 in. o/d	Fuel pipe	
20	P.001904ND	P.001904ND				1-0 in. o/d	Fuel pipe	
21	P.001915ND	P.001915ND	Copper	T.7	20	1/2 in. o/d	Vent pipe	
22	P.001131A	P.001132A				1-0 in. o/d	Feed pipe	
23	P.00131ND	P.00131ND	Flexatex	Grade 7	—	1-0 in. i/d	Flexible hose	
24	—	—	—	—	—	—	Banjo, fuel filter	
25	—	—	Spe-Kog	P.20.B.500	—	—	Assembly	
26	P.002009	—	—	G.P.H.	—	—	Fuel filter	
27	P.002027	P.002027	—	—	—	1 1/2 in. bore	Fuel pipe	
28	P.001806	P.001807	—	—	—	1-0 in. bore	Flexible hose	
29	AM.570 P	AM.570 S	—	—	—	—	Rubber elbow	
30	P.001919ND	P.001919ND	Aluminium alloy	D.T.D.310	22	1-0 in. o/d	Wing tank No. 2	
31	P.00657ND	P.00657ND	Rubber hose	—	—	2-0 in. i/d	Fuel pipe	
32	AM.573P	AM.573S	—	—	—	—	Hose connection	
33	AM.571P	AM.571S	—	—	—	—	Wing tank No. 4	
34	P.001916ND	P.001916ND	Aluminium alloy	D.T.D.310	20	1/2 in. o/d	Wing tank No. 3	
35	P.002619ND	P.002620ND				20	1/2 in. o/d	Vent pipe
36	P.002759ND	—				20	3/4 in. o/d	Vent pipe
37	P.001184	—				D.T.D.424/D7 or D.T.D.425 casting	20	3/4 in. o/d
38	P.002559	—	Aluminium alloy	D.T.D.424/D7 or D.T.D.425 casting	—	—	Banjo	
39	P.002760	—	—	D.T.D.310	20	3/4 in. o/d	Fuel transfer pipe	
40	P.002423A	—				—	—	—
41	P.002049A	P.002050A	—	—	—	—	Assembly of drop tank	

FUEL AND VENTING SYSTEM

Key to Items shown on Fig. 3/1

ASSEMBLY P.00677 (Mark 5 and Mark 20 Aircraft)

Key No.	Part No.		Material	Specification	S.W.G.	Diameter	Description
	L.H.	R.H.					
1	P.002723ND	P.002724ND	Aluminium alloy	D.T.D.310	20	$\frac{3}{4}$ in. o/d	Fuel transfer pipe
2	—	—	Flexible hose	—	—	$\frac{3}{4}$ in. i/d	Hose connection
3	P.002707ND	P.002708ND	Aluminium alloy	D.T.D.310	20	$\frac{3}{4}$ in. o/d	Fuel transfer pipe
4	P.002705ND	P.002706ND				$\frac{3}{4}$ in. o/d	
5	P.002821ND	P.002822ND				$\frac{3}{4}$ in. o/d	
6	AM.904P	AM.904.S				$\frac{3}{4}$ in. o/d	
7	P.002711ND	P.002712ND	Aluminium alloy	D.T.D.310	20	$\frac{3}{4}$ in. o/d	Wing tank No. 1
8	P.00444A	—	Aluminium	T.9	—	$\frac{3}{4}$ in. o/d	Fuel transfer pipe
9	—	—	Flexible hose	—	—	—	Fuel vent pipe
10	—	—	Flexible hose	—	—	1-0 in. i/d	Hose connection
11	P.00306ND	—	Aluminium alloy	D.T.D.310	20	$\frac{1}{2}$ in. i/d	
12	L.001413AND	—	Aluminium alloy	D.T.D.310	22	$\frac{1}{2}$ in. o/d	Vent pipe
13	P.003125AND	—	—	—	—	$\frac{3}{8}$ in. o/d	Drain pipe
14	L.001157ND	—	—	—	—	—	Vent pipe
15	P.00304ND	—	Aluminium alloy	D.T.D.310	22	$\frac{3}{8}$ in. o/d	Drain pipe
16	P.002605A	—	Aluminium alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Vent pipe
17	P.002716ND	—	Aluminium	T.9	17G	1-0 in. o/d	Tank vent pipe
18	P.002717ND	—	Aluminium alloy	D.T.D.310	20	$\frac{3}{4}$ in. o/d	Fuel vent pipe
19	P.002727ND	P.002728ND	Aluminium alloy	D.T.D.310	20	$\frac{1}{2}$ in. o/d	Vent pipe
20	P.002729ND	P.002730ND	Aluminium alloy	D.T.D.310	22	1-0 in. o/d	Fuel pipe
21	P.00727ND	P.00728ND				1-0 in. o/d	Fuel pipe
22	P.001131A	P.001132A				$\frac{1}{2}$ in. o/d	Vent pipe
23	P.002861ND	P.002861ND	Copper	T.7	20	1-0 in. o/d	Feed pipe
24	—	—	Flytex	No. 4	—	1-0 in. i/d	Flexible hose
25	—	—	—	—	—	—	Banjo, fuel filter assembly
26	P.002009	—	Tecalemit	FD.2151Mod.6	—	—	Fuel filter
27	P.002027	P.002027	—	—	—	$1\frac{1}{4}$ in. bore	Fuel pipe
28	P.001806	P.001807	—	—	—	1-0 in. bore	Flexible hose
29	AM.905P	AM.905S	—	—	—	—	Rubber elbow
30	P.001919ND	P.001919ND	Aluminium alloy	D.T.D.310	22	1-0 in. o/d	Wing tank No. 2
31	P.00657ND	P.00657ND	Rubber hose	—	—	2-0 in. i/d	Fuel pipe
32	AM.907.P	AM.907.S	—	—	—	—	Hose connection
33	AM.906.P	AM.906.S	—	—	—	—	Wing tank No. 4
34	P.002709ND	P.002710ND	—	—	—	—	Wing tank No. 3
35	P.00133ND	P.00134ND	Aluminium alloy	D.T.D.310	20	$\frac{1}{2}$ in. o/d	Vent pipe
36	P.002617ND	—				$\frac{3}{4}$ in. o/d	Vent pipe
37	P.001184	—				$\frac{3}{4}$ in. o/d	Fuel transfer pipe
38	P.002559	—	Aluminium alloy	D.T.D.424/D7 or D.T.D.425 casting	—	—	Banjo
39	P.002618	—	—	—	—	—	—
40	P.002665	—	Aluminium alloy	D.T.D.310	20	$\frac{3}{4}$ in. o/d	Fuel transfer pipe
41	P.002049A	P.002050A	—	—	—	—	Assembly of main fuel tank
42	P.003057ND	—	Aluminium	T.9	22	$\frac{1}{2}$ in. o/d	Assembly of drop tank
43	—	P.003051ND	Aluminium	T.9	22	$\frac{1}{2}$ in. o/d	Fuel pipe

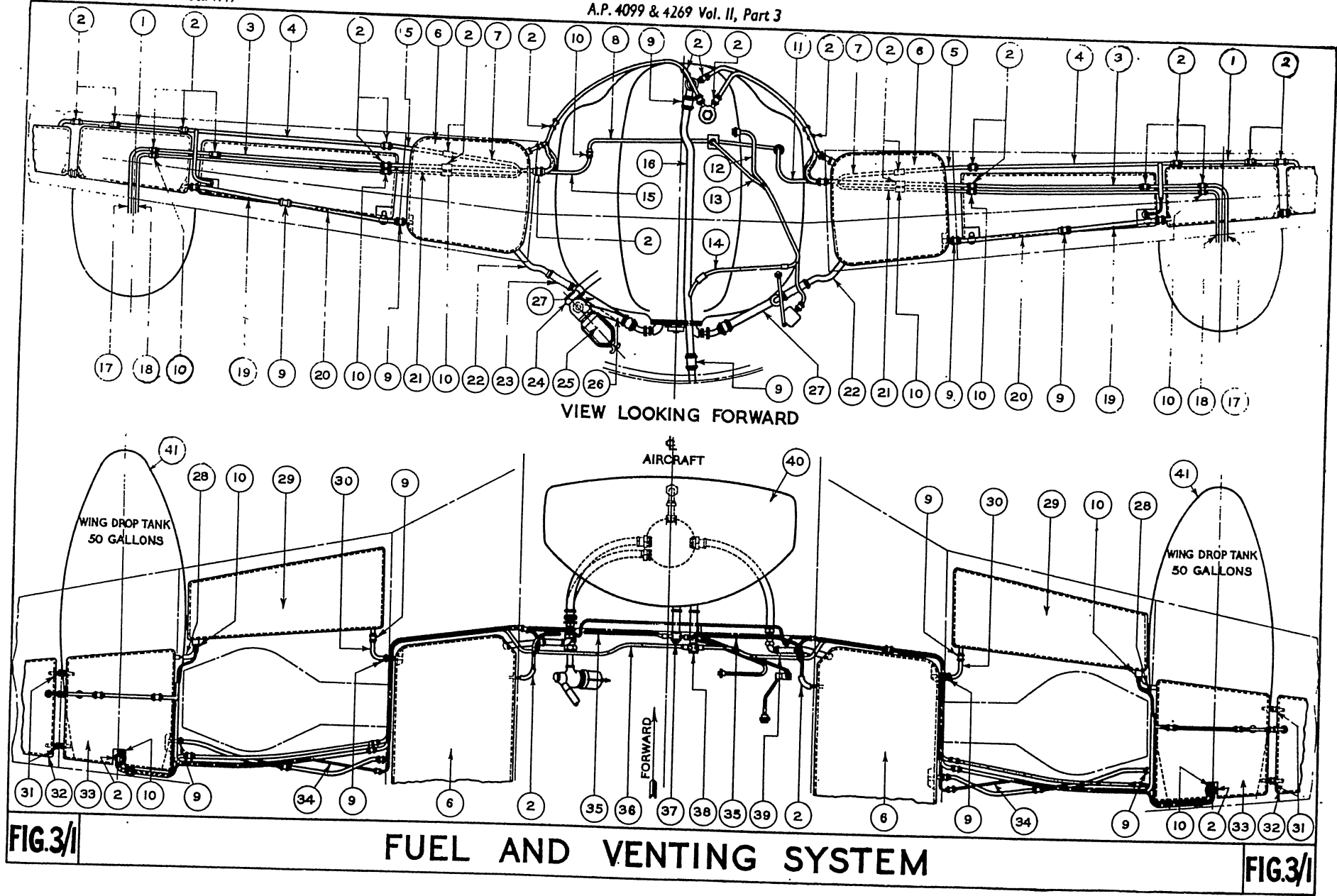


FIG.3/1

FUEL AND VENTING SYSTEM

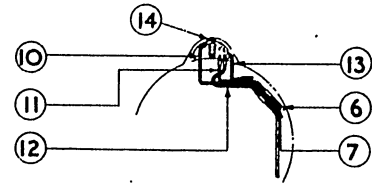
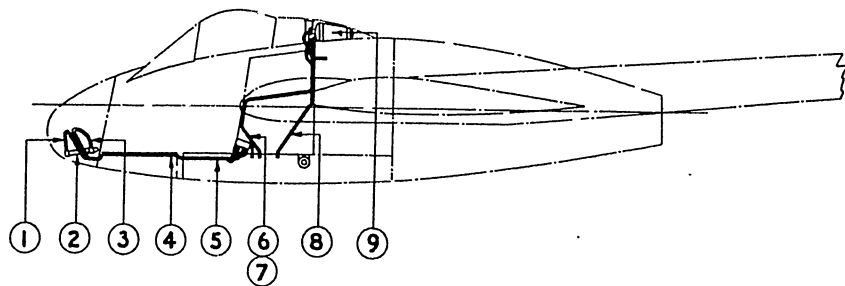
FIG.3/1

HYDRAULIC SYSTEM
Key to Items shown on fig. No. 3/2

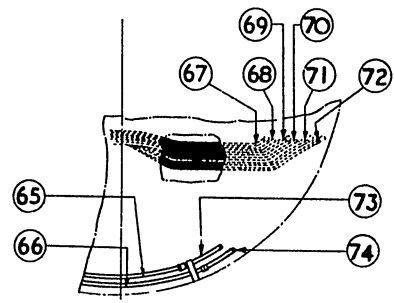
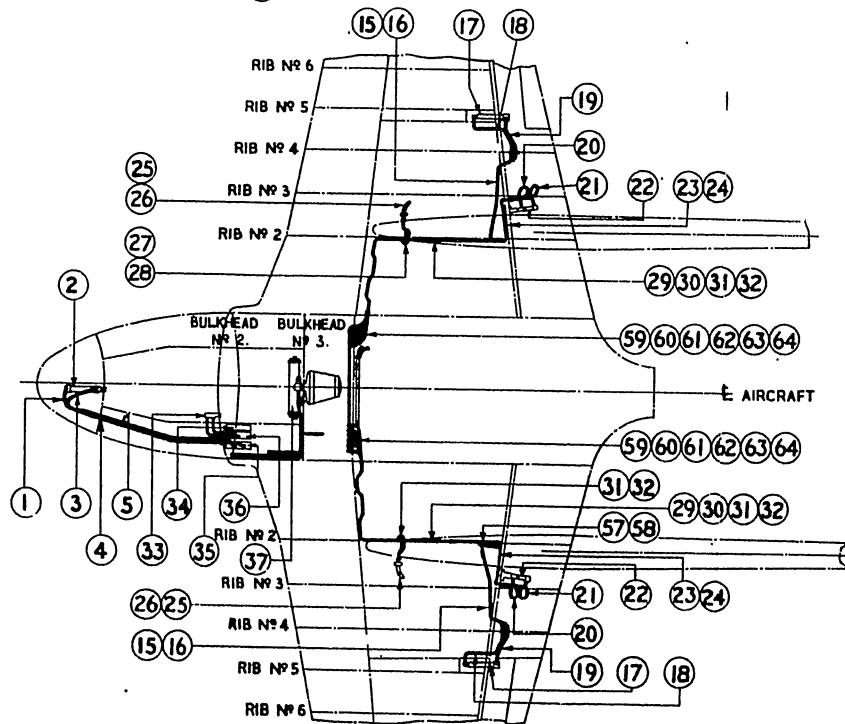
Key No.	Part No.		Material	Specification	S.W.G.	Diameter (in.)	Description
	L.H.	R.H.					
1		AIR.31832	—	—	—	—	Hose, nose wheel "down"
2		AIR.40542	—	—	—	—	Nose wheel jack
3		AIR.34490	—	—	—	—	Hose, nose wheel "up"
4		Q.00441ND	Steel	D.T.D.503	24	7/8 o/d	Pipe, nose wheel "up"
5		Q.00443ND	Steel	D.T.D.503	24	7/8 o/d	Pipe, nose wheel "down"
6		Q.003761AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, hand pump suction
7		Q.00621AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, main return
8		Q.00619AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, main suction
9		Q.003567A	—	—	—	—	Hydraulic reservoir
10		Q.003591AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, main return
11		Q.003761AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, hand pump suction
12		Q.00623AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, hand pump suction
13		Q.00627AND	Alum. alloy	L.56	20 or 22	1 1/8 o/d	Pipe, vent
14		Q.003573	Silicon	L.33	—	—	Filler neck
15	Q.00339ND	Q.002472ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "on"
16	Q.00337ND	Q.002470ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "off"
17	AIR.40022	AIR.40022	—	—	—	—	Dive brake jack
18	AIR.31832	AIR.31832	—	—	—	—	Hose, dive brake "on"
19	AIR.34490	AIR.34490	—	—	—	—	Hose, dive brake "off"
20	AIR.31836	AIR.31836	—	—	—	—	Hose, flap "up"
21	AIR.31832	AIR.31832	—	—	—	—	Hose, flap "down"
22	AIR.40008	AIR.40008	—	—	—	—	Flap jack
23	Q.002436ND	Q.002466ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flap "up"
24	Q.002434ND	Q.002468ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flap "down"
25	AIR.31836	AIR.31836	—	—	—	—	Hose, U/C "up"
26	AIR.34492	AIR.34492	—	—	—	—	Hose, U/C "down"
27	Q.00313ND	Q.002458ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, U/C "up"
28	Q.00314ND	Q.002460ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, U/C "down"
29	Q.002428ND	Q.002452ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "on"
30	Q.002426ND	Q.002450ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "off"
31	Q.002442ND	Q.002462ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flap "up"
32	Q.002444ND	Q.002464ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flap "down"
33	Q.00473A	—	—	—	—	—	Accumulator release valve
34	AIR.40272	—	—	—	—	—	Dive brake selector
35	AIR.40272	—	—	—	—	—	U/C selector
36	AIR.40272	—	—	—	—	—	Flap selector
37	AIR.40016	—	—	—	—	—	Hydraulic accumulator
38	Q.0036ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, hand pump pressure
39	Q.002213ND	—	Tungum	—	20	0-060 - 004 - 0 i/d	Pipe, flaps "up" (special)
40	Q.002214ND	—	Tungum	—	20	0-060 - 004 - 0 i/d	Pipe, flaps "down" (special)
41	Q.00482ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, U/C "up"
42	Q.00484ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, U/C "down"
43	Q.003723AND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, (for'd) dive brake "on"
44	Q.003731AND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, (aft) dive brake "on"
45	Q.003721AND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, (for'd) dive brake "off"
46	Q.003729AND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, (aft) dive brake "off"
47	Q.00494ND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, dive brake pressure
48	Q.00496ND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, dive brake pressure
49	Q.00498ND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, dive brake return
50	Q.003725AND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, engine pump pressure
51	Q.00502ND	—	Steel	D.T.D.503	22	7/8 o/d	Pipe, accumulator pressure
52	Q.00504ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, pressure to selectors
53	Q.00506ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, pressure to selectors
54	Q.00508ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, return from selectors
55	Q.00510ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, pressure to selectors
56	Q.003727AND	—	Alum. alloy	L.56	22	7/8 o/d	Pipe, engine pump suction
57	Q.002432ND	—	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "on"
58	Q.002430ND	—	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "off"
59	Q.00534ND	Q.00536ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "off"
60	Q.00528ND	Q.00538ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, dive brake "on"
61	Q.00532ND	Q.00540ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flaps "up"
62	Q.00526ND	Q.00542ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, flaps "down"
63	Q.00530ND	Q.00546ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, U/C "up"
64	Q.00524ND	Q.00544ND	Tungum	D.T.D.323	24	7/8 o/d	Pipe, U/C "down"
65	Q.003697AND (Mk. 20)	—	Tungum	D.T.D.323	22	7/8 o/d	Pipe, engine pump pressure
66	15.S.1359AND (Mk. 5 and 9)	—	Tungum	D.T.D.323	20	7/8 o/d	Pipe, engine pump pressure
67	Q.003701AND (Mk. 20)	—	Steel	D.T.D.503	20	7/8 o/d	Pipe, engine pump suction
68	15.S.1357AND (Mk. 5 and 9)	—	Tungum	D.T.D.323	20	7/8 o/d	Pipe, engine pump suction
69	Q.00388ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, engine pump suction
70	Q.00389ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, dive brakes "off"
71	Q.00390ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, dive brakes "on"
72	Q.00391ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, flaps "up"
73	Q.00394ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, flaps "down"
74	Q.00393ND	—	Steel	D.T.D.503	24	7/8 o/d	Pipe, U/C "up"
75	Q.003781AND	—	—	—	—	—	Pipe, U/C "down"
76	Q.002233AND	—	—	—	—	—	Flexible hose, pump pressure
77			—	—	—	—	Flexible hose, pump suction

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(A.L.23, Feb. 57)



VIEW LOOKING AFT ON BULKHEAD Nº 3.



ENLARGED VIEW ON FIREPROOF BULKHEAD LOOKING FORD.

FOR PARTICULARS OF PIPES IN FUSELAGE WHICH ARE NOT SHOWN ON THIS DRAWING SEE RELEVANT SCHEDULE, KEY NUMBERS 38-56 INCLUSIVE.

FIG3/2

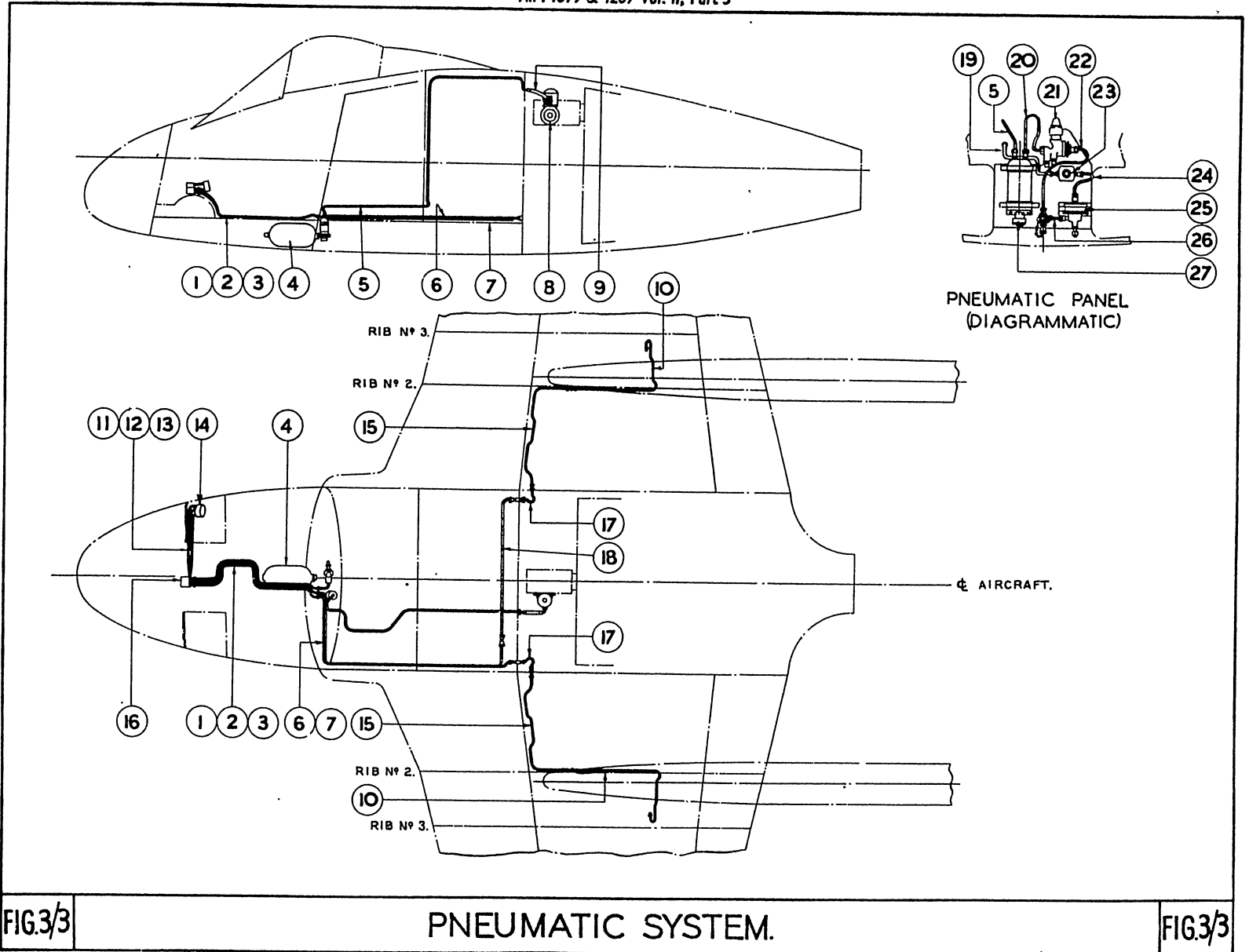
HYDRAULIC SYSTEM.

FIG3/2

PNEUMATIC SYSTEM
Key to items shown on fig. No. 3/3

Key No.	Part No.		Material	Specification	S.W.G.	Diameter	Description
	L.H.	R.H.					
1	Q.00585ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
2	Q.00587ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, starboard brake pressure
3	Q.00589ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, port brake pressure
4			Stores Ref. 6G/128				Air reservoir
5	Q.00467		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
6	Q.00512		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, starboard brake pressure
7	Q.00514		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Piper pot, brake pressure
8			Stores Ref. 37G/501				Heywood air compressor
9	L.00637A		Silvoflex, Skyflex or Weatherhead flex			1/4 in. i/d	Flexible hose
10	Q.002456ND	Q.002438ND	Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
11	Q.00586ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
12	Q.00588ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, starboard brake pressure
13	Q.00590ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, port brake pressure
14							Brake pressure gauge
15	Q.00315ND	Q.00363ND	Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
16			Dunlop AHO.8241				Brake control unit
17	Q.00548ND	Q.00550ND	Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
18		Q.00392ND	Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, starboard brake pressure
19	Q.00700A		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, brake pressure
20	Q.00907ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Oil and water trap to regulator valve
21			Stores Ref. 37G/706				Regulator valve
22	Q.00903ND		Alum. alloy	D.T.D.310	22	1/4 in. o/d	Pipe, regulator valve to reservoir
23			Dunlop AHO.5712				Reducing valve
24	Q.00905ND		Alum. alloy	D.T.D.310	20	1/4 in. o/d	Pipe, reducing valve to air filter
25			Dunlop AHO.2337				Air filter
26	Q.00889		Alum. alloy	D.T.D.310	20	1/4 in. o/d	Pipe, reservoir to air filter
27			Stores Ref. 37G/653				Oil trap

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VACUUM SYSTEM

Key to items shown in fig. No. 3/4

Key No.	Part No.	Material	Specification	S.W.G.	Diameter	Description
1	Q.98782					Flexible hose
2	Q.00596ND	Alum. alloy	D.T.D.310	22	$\frac{1}{2}$ in. o/d	Pipe, vacuum pump suction
3						Vacuum suction gauge
4	Q.00562ND	P.R. hose			$\frac{1}{4}$ in. i/d	Hose connection
5	DHS.36-3	P.R. hose			$\frac{1}{2}$ in. i/d	Hose connection
6	Q.002089ND	Alum. alloy	D.T.D.310	22	$\frac{1}{2}$ in. o/d	Pipe, C/seal to "T" piece
7	Q.00430ND	Alum. alloy	D.T.D.310	22	$\frac{1}{2}$ in. o/d	Pipe, vacuum pump suction
8	L.001285ND	P.R. hose			$\frac{1}{2}$ in. i/d	Pipe, vacuum pump to bulk-
9	R.0035					head canopy seal valve
10	L.00200	Alum. alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Pipe, vacuum pump connec-
11						tion
12	Q.00736	Alum. alloy	D.T.D.310	22	$\frac{1}{4}$ in. o/d	"Pesco" vacuum pump
13	Q.00597ND	Alum. alloy	D.T.D.310	22	$\frac{1}{2}$ in. o/d	Pipe, "T" piece to front
14	P.002039ND		T.9	20	$\frac{1}{4}$ in. o/d	armour
15	AHO19682					Pipe to vacuum pump suction
						gauge
						Pipe
						Pressure reducing valve

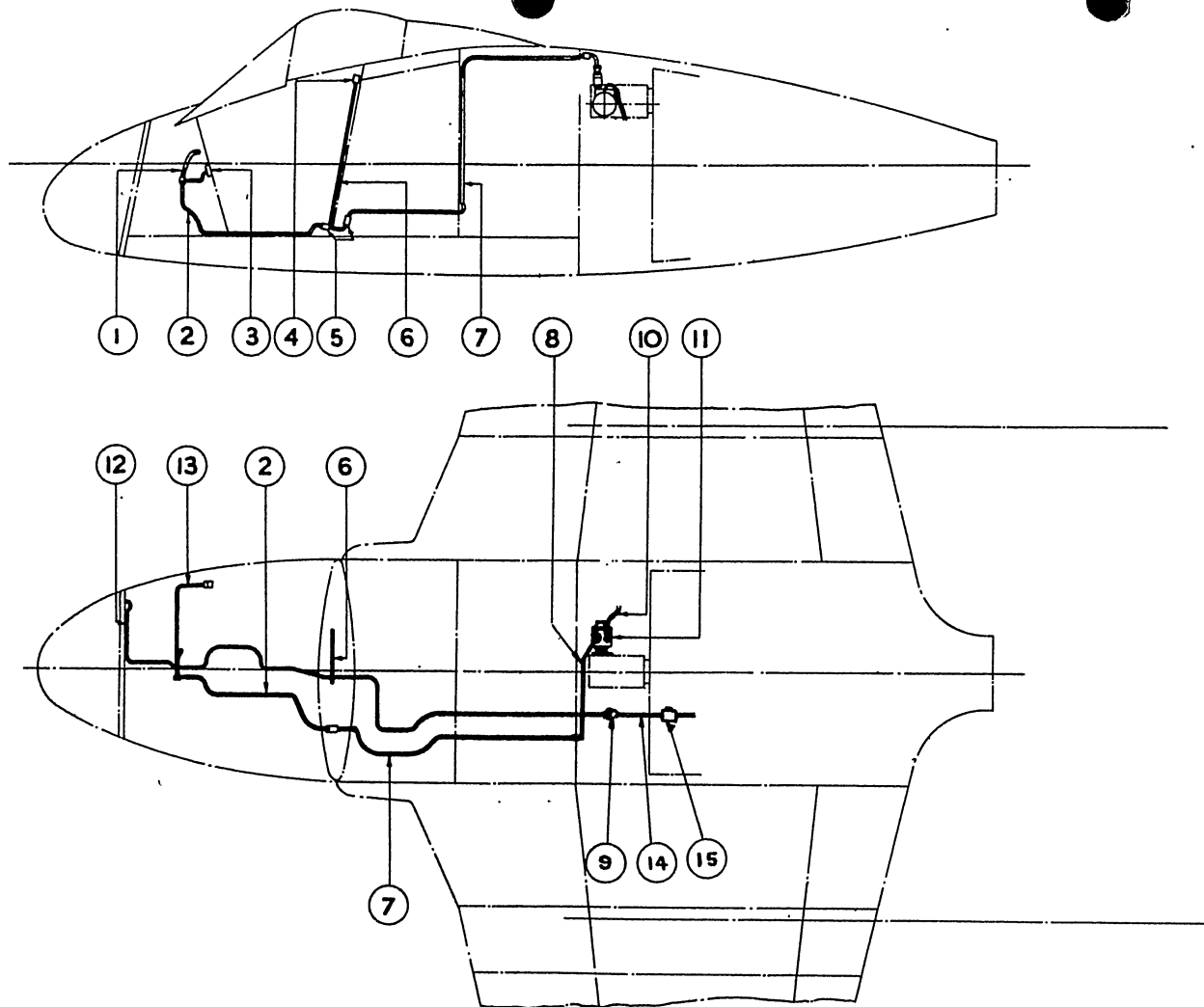


FIG3/4

VACUUM SYSTEM - PRESSURE CABIN TYPE.

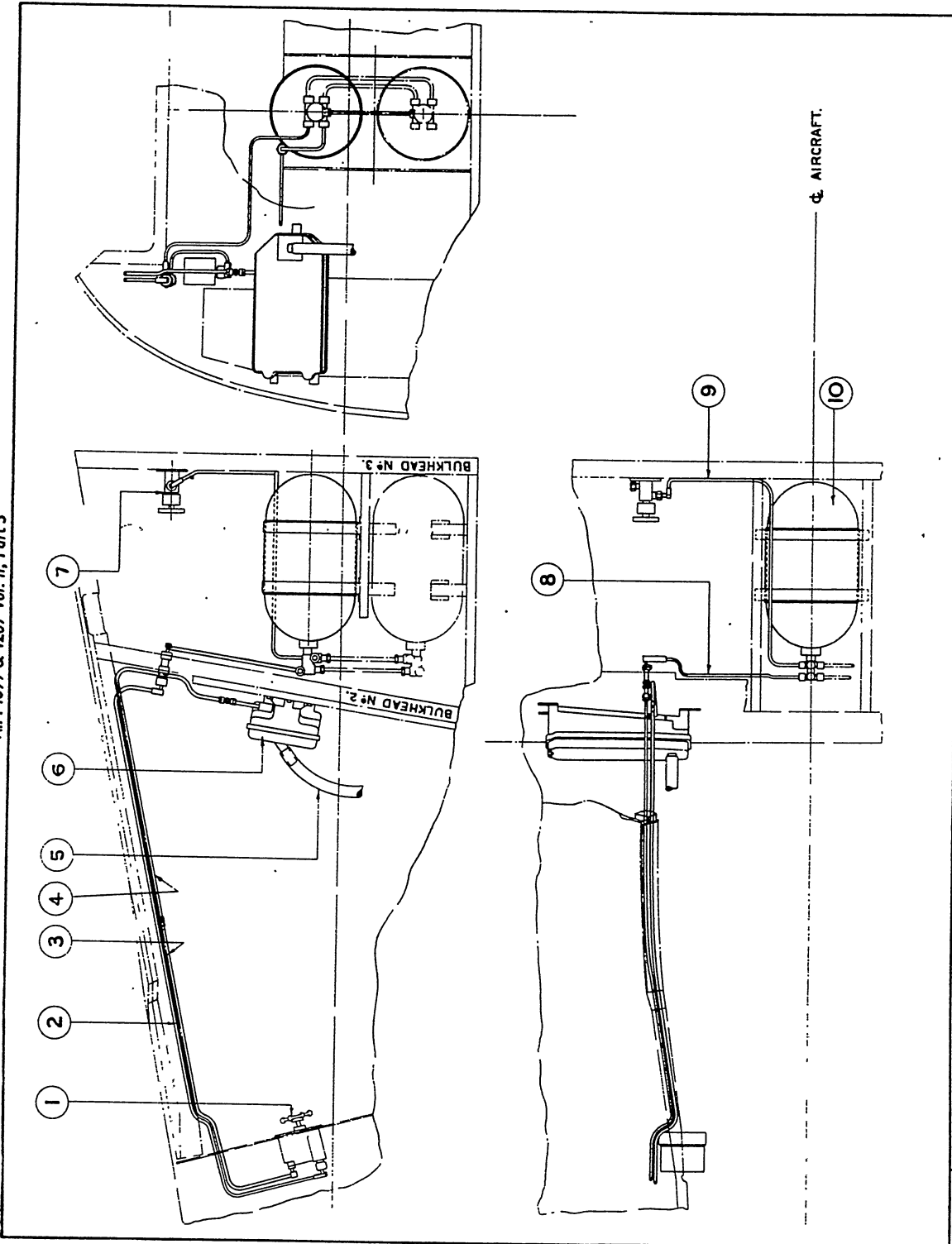
FIG3/4

OXYGEN SYSTEM
Key to items shown on fig. No. 3/3

Key No.	Part No.	Material	S.W.G.	Diameter	Description
1		Stores Ref. 6D/695			Pressure regulator
2	Q.00408ND	Copper	22	$\frac{1}{8}$ in. o/d	Pipe
3	Q.001003ND	Aluminium	22	$\frac{1}{8}$ in. o/d	Pipe
4	Q.001004ND				
5		Stores Ref. 6D/573			Flexible hose
6		Stores Ref. 6D/606			Economiser, Mk. 2
7		Stores Ref. 6D/223			Control valve
8	Q.00765ND	Copper	22	$\frac{1}{8}$ in. o/d	Pipe
9	Q.00402ND	Copper	22	$\frac{1}{8}$ in. o/d	Pipe
10		Stores Ref. 6D/483			Cylinder, Mk. 5C

This leaf issued with A.L.No 5 Oct. 1949

A.P. 4099 & 4269 Vol. II, Part 3



FIRE EXTINGUISHER SYSTEM

Key to items on fig. No. 3/6

Key No.	Part No.	Material	Specification	S.W.G.	Diameter	Description
1	L.001279ND	Alum. alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Pipe, front ring
2	L.001280ND	Alum. alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Pipe, front ring
3	L.00784					"T"-piece
4	L.001123ND	Alum. alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Pipe, rear ring
5	L.001132ND	Avioflex				Flexible hose
6	L.00931	Avioflex				Flexible hose
7	L.00197	Brass	B.S.886	20	$\frac{1}{2}$ in. o/d	Pipe
8	Messrs. Gravier's drawing No. 753					Fire extinguisher bottle
9	L.001121	Alum. alloy	D.T.D.310	20	$\frac{1}{2}$ in. o/d	Pipe
10	L.00923	Alum. alloy	D.T.D.310	20	$\frac{3}{8}$ in. o/d	Pipe, rear ring

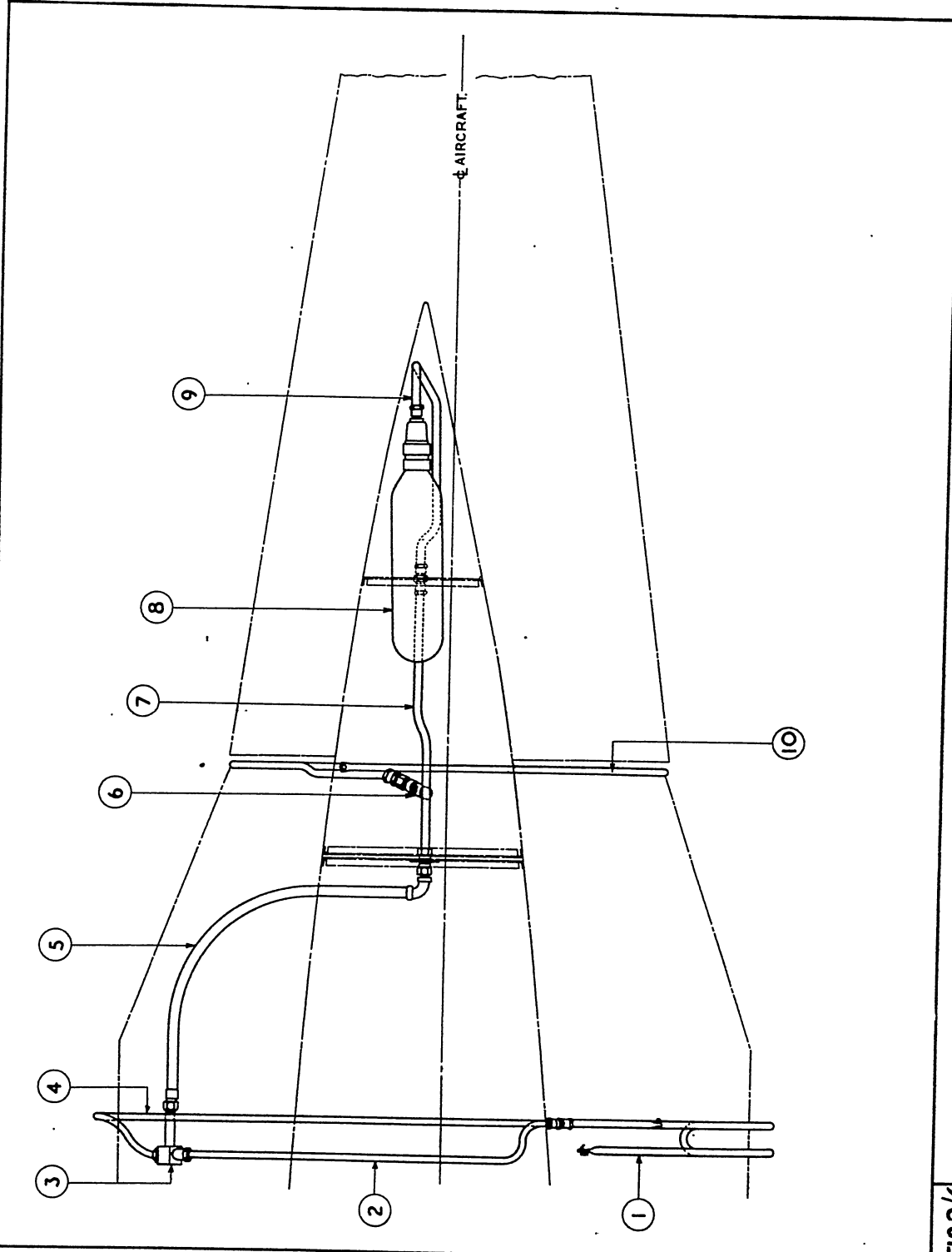
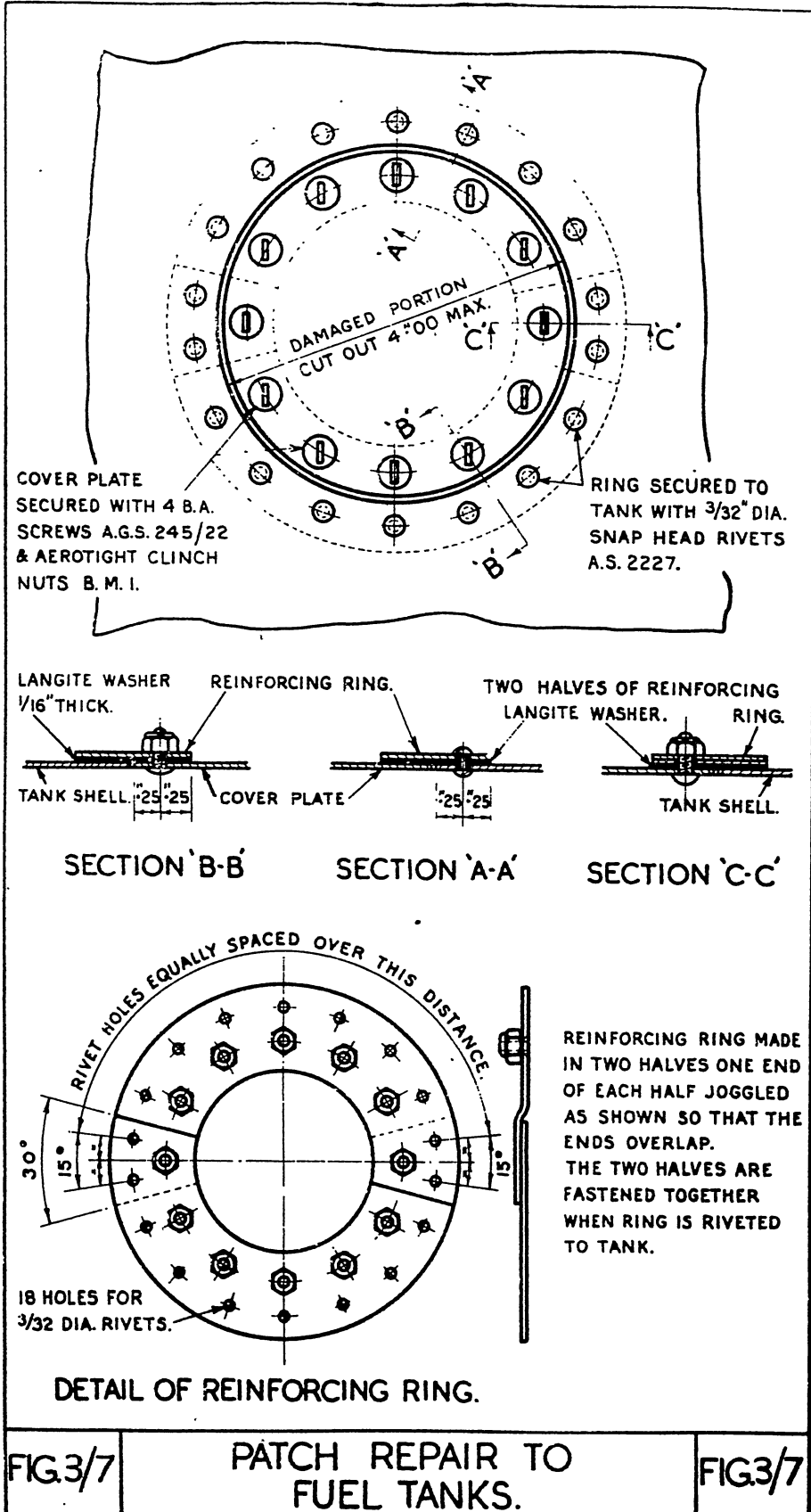


FIG.3/6

FIRE EXTINGUISHER SYSTEM.

FIG3/6



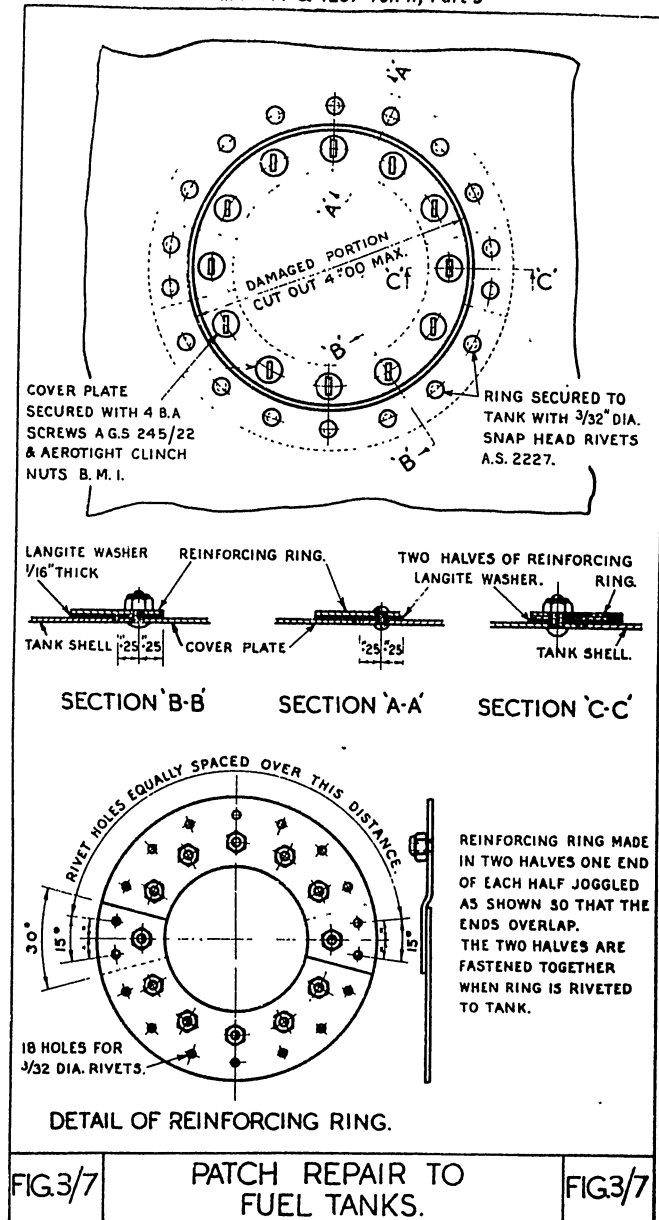


FIG.3/7

PATCH REPAIR TO FUEL TANKS.

FIG.3/7

CHAPTER 4

FUSELAGE

4

Chapter 4 FUSELAGE

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F.S./1

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FUSELAGE
Definitions of negligible and repairable damage

Component	Type of aircraft two or single seater	Definition of damage		Repair Fig. No.	Repair material Item No.	Key dia. Fig. No.	
		Negligible	Repairable				
FUSELAGE							
Skin	Single seater and two seater	Bruises one lamination deep 0.75 in. across and 2.0 in. along the grain 12.0 in. apart	0.6 in. × 1.8 in. 12.0 in. apart	4/25	2, 71	4/1, 4/11 and 4/12A	
			3.0 in. dia. 12.0 in. apart	4/27	2, 12, 72		
			6.0 in. dia. 18.0 in. apart	4/26	2, 3, 12, 72		
			8.0 in. dia. 24.0 in. apart	4/30	2, 3, 12, 72		
Members	Single seater and two seater	Bruises 0.1 in. deep, 0.5 in. across and 2.0 in. along the grain 12.0 in. apart	Damage in excess of negligible	4/31	1, 2, 3, 9, 10, 72	4/2 and 4/12	
BULKHEADS							
No. 1 and 4 Laminated rings	Both types	Bruises 0.05 in. deep, 0.5 in. across and 1.0 in. along the grain 12.0 in. apart	Damage in excess of negligible cannot be repaired with squadron equipment			4/2 and 4/33	
			Damage in excess of negligible, insert new portion of ply with one in ten scarf		1, 3, 69, 73		
Facing ply	Both types	Bruises one lamination deep, 0.5 in. across and 1.0 in. along the grain 10.0 in. apart	Holes up to 3.0 in. dia.		4/33	37, 38, 39, 56, 16, 20	
Diaphragms	Two seater	Dents 0.1 in. deep, 0.75 in. dia., 12.0 in. apart	Replacement of bottom segment		4/22	20a, 20b, 35, 38	
No. 2 and 3 Skin	Single seater	Holes 0.5 in. dia. not involving a member 12.0 in. apart					
	Two seater	Bruises one lamination deep 0.75 in. across and 2.0 in. along the grain					
Spruce members	Both types	Bruises 0.1 in. deep, 0.5 in. across and 1.0 in. along the grain 12.0 in. apart				4/14 and 4/15	
DOORS							
Nose door Skin	Both types	Bruises one lamination deep, 0.5 in. across and 1.0 in. along the grain 12.0 in. apart	0.6 in. × 1.8 in. 12.0 in. apart		4/25	2, 71	4/1
			3.0 in. dia. 18.0 in. apart		4/27	2, 71	
			Isolated holes 0.6 in. × 1.8 in. one only per door		4/29	1, 72	4/11 and 4/12A

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Description

1. The fuselage construction is illustrated in fig. 4/1 for single-seater marks and in 4/11 and 4/12A for two-seater marks of the aircraft. Ply and balsa sandwiched between spruce members is used for the construction of both types with nose and wheel fairing of metal. Construction of bulkheads, doors and floors is illustrated in the various figures. Whilst the method of repair to be used in treating damage is mainly the same, there are exceptions and before adopting a repair, note should be made whether such a method is applicable for the mark of aircraft which has been damaged (*para.* 4).

Repair restrictions

2. The fuselage shell may be repaired only within the specified limits, in the areas shown shaded on fig. 4/1, 4/12 and 4/12C. In such

area repair cannot be undertaken where damage involves an inter-skin member nor if the damage approaches a main member so closely that there is no room for the appropriate patch lap.

Wear limits

3. Wear limits for all male and female parts of the principal fittings in the fuselage are given in the table facing fig. 4/32 and reference should be made to Chap. 1, para. 14 for the method of application of the data shown.

Negligible and repairable damage definitions

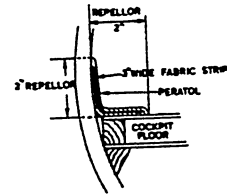
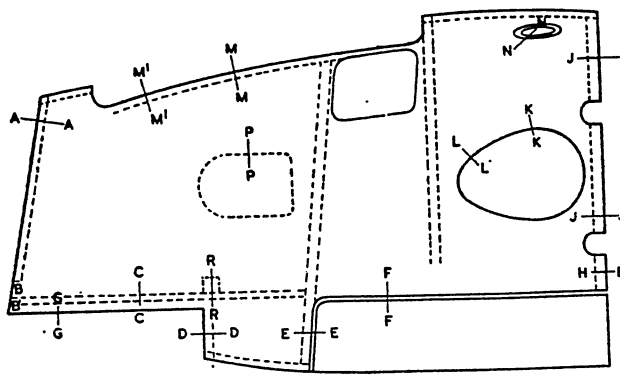
4. The table opposite lists definitions negligible and repairable damage affecting the various members of the fuselage. References are also included to the pertinent figures illustrating repair procedures for the various sizes of damage specified in column 3 of the table.

FUSELAGE—cont.

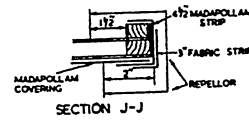
Component	Type of aircraft two or single seater	Definitions of damage		Repair Fig. No.	Repair material item number	Key diagram Fig. No.
		Negligible	Repairable			
DOORS—cont. Nose door—cont.						
Spruce members	Both types	Bruises 0·1 in. deep 0·5 in. across and 1·0 in. along the grain 12·0 in. apart	Minor damage	4/31	1, 2, 3, 72	4/14 and 4/15
Cannon door Skin	Two seater	Bruises 0·1 in. deep 0·5 in. across and 1·0 in. along the grain 12·0 in. apart	Isolated holes 0·6 in. × 1·8 in. no more than 3 per door 12·0 in. apart	4/29	1, 72	4/16 and 4/17
Members		Bruises 0·1 in. deep 1·0 in. dia.	3·0 in. dia. 12·0 in. apart Larger damage Minor damage	4/30 4/31 4/31	1, 3, 71 1, 2, 3, 72 1, 2, 3, 72	
COCKPIT and CANNON FLOORS Skin	Single seater	Bruises one lamination deep 0·75 in. across and 2·0 in. along the grain Holes 0·5 in. dia. 18·0 in. apart	0·6 in. × 1·8 in. 18·0 in. apart 3·0 in. dia. 18·0 in. apart 5·0 in. dia.	4/29 4/30 4/31	1, 72 1, 3, 71 1, 2, 3, 72	4/6 and 4/7
Members	Single seater	Bruises 0·1 in. deep 0·5 in. across and 1·0 in. along the grain 12·0 in. apart	Minor damage	4/31	1, 2, 3, 72	
METAL FAIRINGS and DOORS Skin	Both types	Dents 0·1 in. deep, 1·0 in. dia. 12·0 in. apart	Damage more than 0·5 in. dia. and less than 5·0 in. 18·0 in. apart	4/33	20a, 20b, 40, 41	
Stiffeners	Both types	Dents 0·1 in. deep, 0·75 in. long 8·0 in. apart	Flange and web 1·0 in. long, 0·5 in. deep in web 18·0 in. apart	4/28	24, 28, 29, 34, 35, 20a, 20b	

Note.—No damage to wooden members can be considered negligible if the fibres of the wood have been damaged. Only grade 'A' spruce and birch ply should be used in effecting repairs to components.

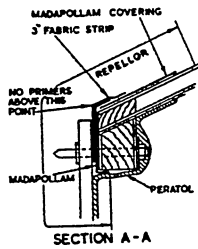
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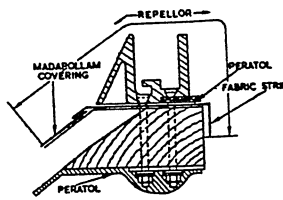
SECTION C-C



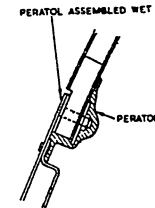
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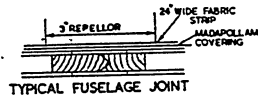
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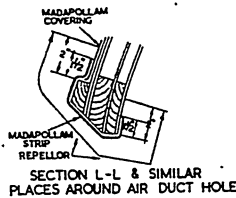
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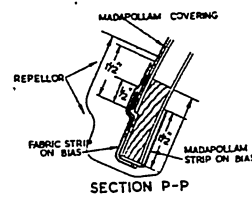
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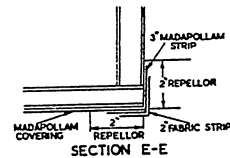
TYPICAL FUSELAGE JOINT



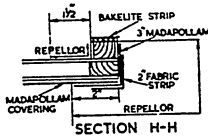
SECTION L-L & SIMILAR PLACES AROUND AIR DUCT HOLE



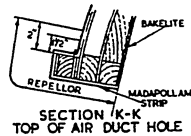
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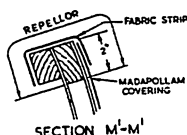
SECTION E-E



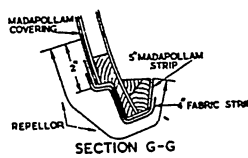
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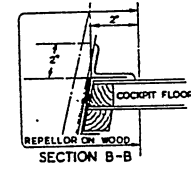
SECTION K-K TOP OF AIR DUCT HOLE



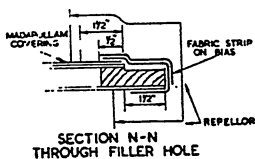
SECTION M'-M'



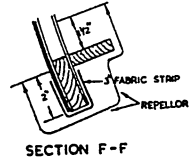
SECTION G-G



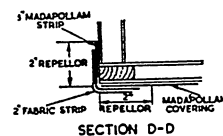
SECTION B-B



SECTION N-N THROUGH FILLER HOLE



SECTION F-F



SECTION D-D

Details of fuselage construction

5. Details of construction are shown above for the single-seater fuselage. In all cases the fuselage must be made good after repair with the detail construction of the section affected as originally produced. Where necessary, dimensions are shown but generally the essential parts must be replaced as originally fitted. Details for the two-seater fuselage are shown on fig. 4/24.

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Fabric repairs

6. Madapollam fabric (D.T.D.343) is used on the fuselage as part of the external plywood protective treatment and any damage should be repaired as soon as possible to prevent secondary damage to the ply surface. A new method of adhesion (D.T.D.900/4479), which differs from that described in A.P.2662A (D.T.D.912A), has been used on later aircraft; therefore, before commencing a repair, identify the scheme used from the specification stencilled on the starboard side of the fuselage. Should there be a letter 'R' within a circle preceding the specification D.T.D.912A then refer to the aircraft log book to ascertain the location of a previous repair to the fabric (*Note to para. 7 (12)*).

7. Where the scheme to D.T.D.912A has been used initially, proceed as follows:—

- (1) Pull back sufficient of the fabric to clear the damaged area and trim it squarely with a sharp knife taking extreme care not to damage the plywood.
- (2) Remove all traces of paint and dope from the edges of the remaining fabric for a distance of 1.25 in. using paint remover to D.T.D.226A (*Ref. No. 33B/927*) and dope thinners to D.T.D.843. Cut the fabric at 45 deg. at corners to allow the edges to be lifted away from the plywood and pin the fabric back.
- (3) Thoroughly clean the exposed ply skin to remove all traces of dope, and smooth the surface with fine sandpaper.
- (4) Cut a new piece of madapollam fabric to butt against the existing edges.
- (5) Prepare the necessary amount of serrated tape (*Ref. No. 32B/751*) to cover the butt-joints and mitre at 45 deg. at the corners; allow at these corners an overlap of 0.25 in. away from the direction of flight.
- (6) Prepare the adhesive by mixing ten parts adhesive F.1 (*Chap. 1, Table 3*) with approximately an equal volume of thinners F.T.1 to obtain the required viscosity (when taping, the adhesive should be more viscid), and then adding one part catalyst F.C.1. Stir thoroughly.

Note . . .

The pot life of the mixture is not more than four hours and thinning after this period is inadvisable.

F.S./3

- (7) Apply a brush coat of the mixed adhesive over the exposed area of the ply skinning and leave for a half an hour.
- (8) Brush a second coat of the adhesive over the same area, leave until tacky and smooth down the free edges of the existing fabric.
- (9) Lay on the new fabric starting at the top edge and spreading downward and fore and aft, ensuring that no creases or wrinkles are formed (the stretching of the fabric as the operation proceeds will probably eliminate this possibility). Cut and fit the fabric around projections, etc.
- (10) Apply a further coat of the adhesive over the new area, brushing it well into the fabric.

Note . . .

During this operation, and whilst taping (sub-para. 11), small blisters may be found where the fabric has lifted. These can be padded into position using a cloth dipped in the F.T.1 thinners.

- (11) As soon as possible after the operation given in sub-para. 10, brush a coat of adhesive over the area to be covered by tape, i.e., 1.25 in. on either side of the butt-joint, and spread the tape in position ensuring that the tapes are placed in the correct sequence in order to obtain the overlap at the mitred corners (*sub-para. 5*). Apply a further coat of the adhesive brushing it well into the tape.
- (12) Finally, leave the repair for 24 hours to allow the adhesive to cure before applying filler and the appropriate paint scheme.

Note . . .

When a partial replacement of the fabric has been carried out, the letter 'R' within a circle should be stencilled on the starboard side of the fuselage immediately in front of the specification D.T.D.912A, and the location of the repair entered in the aircraft log book. If the entire fabric covering has been renewed, the new specification D.T.D.900/4479 should replace D.T.D.912A. In each of the above, the stencil size should be as originally.

RESTRICTED

8. On fuselages where the scheme to D.T.D. 900/4479 has been used, the repair should be as follows:—

- (1) Remove all traces of paint from the area to be covered by the repair, i.e. the fabric insert and tape.
- (2) Mark out the area to be renewed by cutting with a sharp knife using just sufficient pressure to penetrate the weave and not damage the ply, and remove the fabric.

Note . . .

Due to the strong adhering qualities of this adhesive, difficulty may be found in removing the large areas of fabric; this could probably be overcome by pulling it off in narrow strips.

- (3) Prepare the madapollam fabric and tapes as in para. 7 (4) and (5) and the adhesive as in para. 7 (6). Continue the repair as detailed from para. 7 (8) onwards.

Note . . .

When a repair has been carried out on the fuselage plywood skin, it is only necessary to apply the first coat of adhesive (para. 7 (7)).

Initial preparation for plywood skin repairs

9. When cleaning out damage prior to repair, make a record of all construction details such as screw location, pitch, length and size; the dimensions, grain directions and relative positions of skins, packing and internal members should also be noted. When repairing areas of ply skin which have a 45 deg. grain direction, wastage can be avoided by using the correct sheet (*Chap. 1, Table 3*). These details may not be apparent from a study of the surrounding structure after the damage has been cleaned out and may not be illustrated in this volume. A sketch made during the process of removal of damaged material and incorporating construction details, will save time during the repair.

FUSELAGE—SINGLE-SEATER AIRCRAFT

Key to items shown on fig. No. 4/1

Assembly A.004006

Key No.	Part Number		Description
	L.H.	R.H.	
1	A.02592	A.002593	Fuselage shell halves
2	A.00237A	A.00238A	Assembly of bulkhead No. 1
3	A.004007	A.004008	Assembly of bulkhead No. 2
4	A.004029	A.004030	Assembly of bulkhead No. 3
5	A.0025A	A.0026A	Assembly of bulkhead No. 4
6	A.007	A.008	Arrangement of fuselage ply skinning
7		A.00172A	G.A. of top structure
8	A.00165A	A.00166A	Canopy rails and cockpit openings
9		A.00717A	Fixed nosing
10		A.00891A	Detachable nose panel
11		G.00297	Nose wheel fairing
12		G.00258	Nose wheel fixed fairing
13		A.001125	Nose wheel housing
14	S.00159A	S.00160A	Detachable panels
15		G.00253	Nose wheel door
16		A.001953-4	Cannon beam
17	A.002573	A.002574	Assembly of ammunition access doors
18	A.00333A	A.00334A	Assembly of cannon doors
19	A.002585	A.002585	Assembly of members for joint 'A'
20	A.002586	A.002587	Assembly of joint 'A'
21	A.002585	A.002585	Assembly of members for joint 'B'
22	A.002588	A.002589	Assembly of joint 'B'
23	A.00889A	A.00890A	Assembly of joint plates for joint 'C'
24	A.00753A	A.00754A	Assembly of joint 'C'
25	A.00397A	A.00398A	Bracing tube

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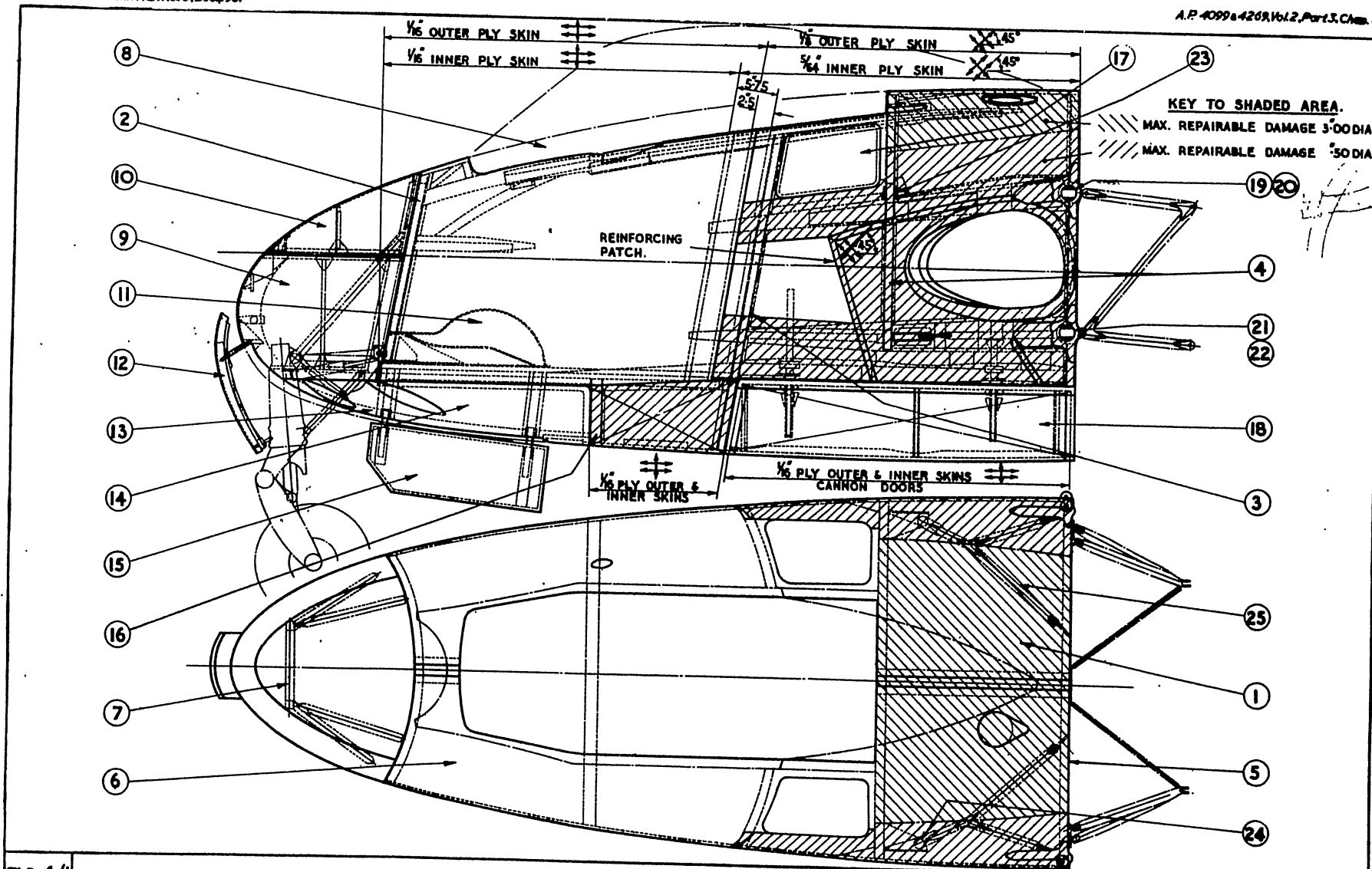


FIG.4/1

FUSELAGE DIAGRAM.

FIG.4/1

RESTRICTED

BULKHEAD RINGS, No. 1 and 4—Single-seater Aircraft

Key to items shown on fig. No. 4/2

RING No. 1, Assembly, A.00237-8A

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.00479ND	A.00480ND	Spruce	D.T.D.36B	Laminated bend
2	A.00481ND	A.00482ND	$\frac{1}{8}$ in. birch ply	V3	Facing plies
3	A.00483ND	A.00484ND	$\frac{1}{8}$ in. birch ply	V3	Facing plies
4	A.00485ND	A.00486ND	$\frac{1}{8}$ in. birch ply	V3	Screwing strip
5	A.00487ND	A.00488ND	$\frac{1}{8}$ in. birch ply	V3	Screwing strip
6	A.00489ND	A.00490ND	Spruce	D.T.D.36B	Laminated bend
7	A.00491ND	A.00492ND	Spruce	D.T.D.36B	Laminated bend
8	A.00495	A.00496	Veneered Bakelite	D.H.A.32	Bakelite packing

RING No. 4, Assembly, A.0025-6A

1	A.00261ND	A.00262ND	$\frac{1}{8}$ in. birch ply	V3	Facing plies
2	A.00263ND	A.00264ND	$\frac{1}{8}$ in. birch ply	V3	Facing plies
3	A.00265ND	A.00266ND	$\frac{1}{8}$ in. birch ply	V3	Facing plies
4	A.00267ND	A.00268ND	$\frac{1}{8}$ in. spruce	D.T.D.36B	Laminated bend
5	A.00269ND	A.00270ND	Spruce	D.T.D.36B	Laminated bend
6	A.00271ND	A.00272ND	Spruce	D.T.D.36B	Laminated bend
7	A.00273ND	A.00274ND	Spruce	D.T.D.36B	Laminated bend
8	A.00275ND	A.00276ND	Spruce	D.T.D.36B	Laminated bend
9	A.00277ND	A.00278ND	$\frac{1}{8}$ in. birch ply	V3	Screwing strip
10	A.00279ND	A.00280ND	$\frac{1}{8}$ in. birch ply	V3	Screwing strip
11	A.00281ND	A.00282ND	$\frac{1}{8}$ in. birch ply	V3	Screwing strip
12	A.00285ND	A.00286ND	Veneered bakelite	D.H.A.32	Insert
13	A.00287ND	A.00288ND	Veneered bakelite	D.H.A.32	Insert
14	A.00289ND	A.00290ND	Veneered bakelite	D.H.A.32	Insert

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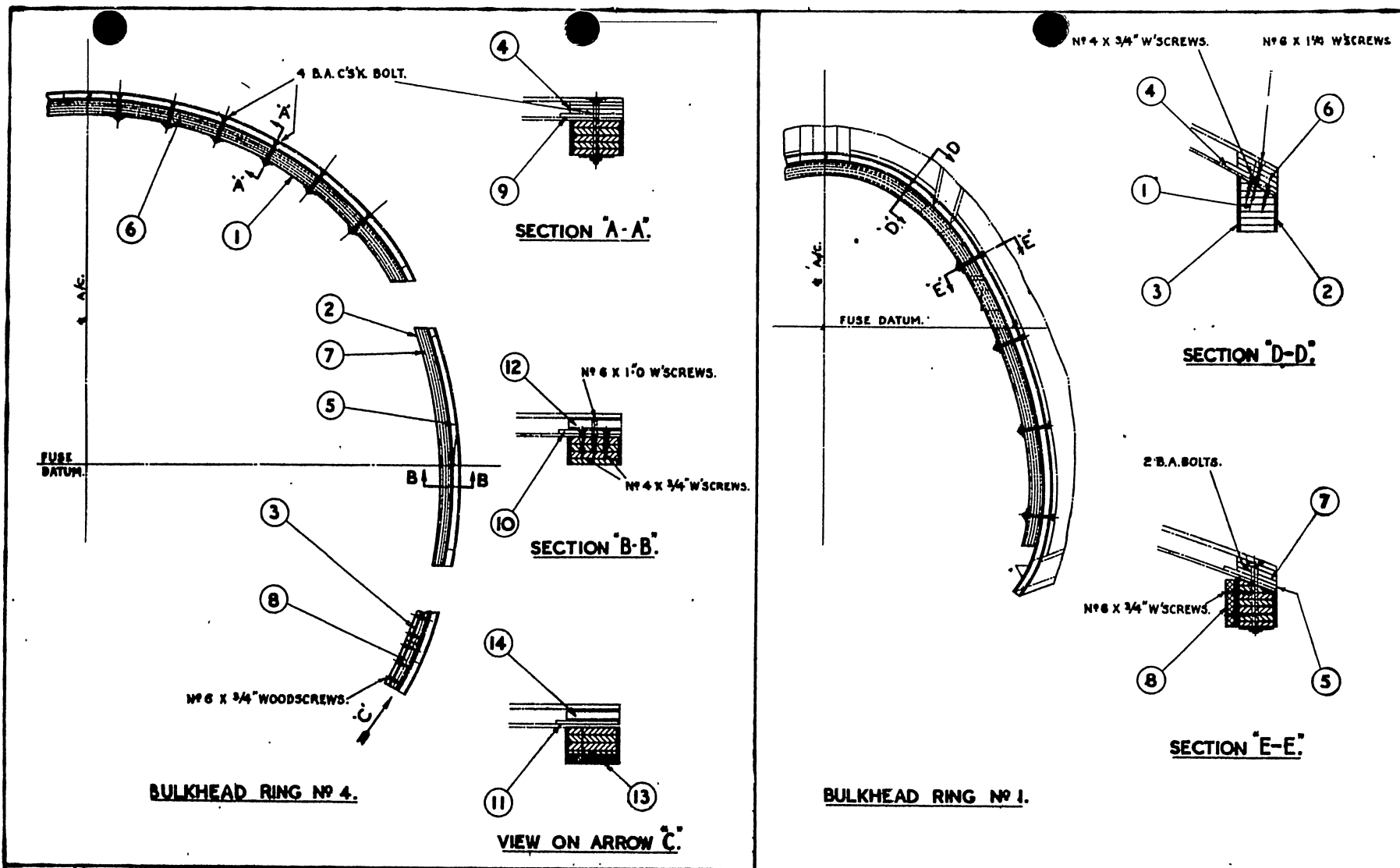


FIG.4/2

BULKHEAD RINGS NOS 1 & 4.

FIG.4/2

RESTRICTED

BULKHEAD No. 2—Single-seater Aircraft

Key to items shown on fig. No. 4/3

Assembly, A.004007

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.00741ND	A.00742ND	Spruce	D.T.D.36B	Member
2	A.00935ND	A.00936ND	Spruce	D.T.D.36B	Member
3	A.001364ND		Spruce	D.T.D.36B	Taper packing
4	A.001365ND		Spruce	D.T.D.36B	Taper packing
5	A.004092A				Packing block
6	A.002100ND	A.002101ND	1/16 in. birch ply	V.3	Front ply
7	A.002097ND	A.002098ND	1/16 in. birch ply	V.3	Rear ply
8	A.002785ND		Spruce	D.T.D.36B	Insert
9	A.002765ND		Spruce	D.T.D.36B	Insert
10	A.002090ND	A.002090ND	Spruce	D.T.D.36B	Insert
11	A.001379ND	A.001380ND	Spruce	D.T.D.36B	Laminated bend
12	A.001381ND	A.001382ND	Spruce	D.T.D.36B	Insert
13	A.001383ND		Spruce	D.T.D.36B	Insert
14	A.001385ND	A.001385ND	Spruce	D.T.D.36B	Insert
15	A.001386ND		Spruce	D.T.D.36B	Insert
16		A.001387ND	Spruce	D.T.D.36B	Insert
17		A.001388ND	Spruce	D.T.D.36B	Insert
18	A.001389ND		Spruce	D.T.D.36B	Insert
19	A.001384ND	A.001384ND	Spruce	D.T.D.36B	Insert
20	A.001391ND	A.001391ND	Spruce	D.T.D.36B	Insert
21	A.001392ND		Spruce	D.T.D.36B	Insert block
22	A.001393ND		Spruce	D.T.D.36B	Insert block
23	A.001394ND		Spruce	D.T.D.36B	Insert
24	A.001395ND		Spruce	D.T.D.36B	Insert
25	A.001396ND		Spruce	D.T.D.36B	Insert
26	A.001397ND	A.001397ND	Spruce	D.T.D.36B	Insert
27	A.001398ND		Spruce	D.T.D.36B	Insert block
28	A.001399ND		Spruce	D.T.D.36B	Insert block
29		A.001400ND	Spruce	D.T.D.36B	Insert block
30		A.001401ND	Spruce	D.T.D.36B	Insert block
31		A.001402ND	Spruce	D.T.D.36B	Insert
32		A.001403ND	Spruce	D.T.D.36B	Insert block
33		A.001404ND	Spruce	D.T.D.36B	Insert
34		A.001405ND	Spruce	D.T.D.36B	Insert
35	A.001406ND	A.001406ND	Spruce	D.T.D.36B	Insert
36	A.001407ND	A.001407ND	Spruce	D.T.D.36B	Insert
37	A.001408ND	A.001408ND	Spruce	D.T.D.36B	Insert
38	A.001409ND	A.001409ND	Spruce	D.T.D.36B	Insert
39	A.001410ND	A.001410ND	1/16 in. birch ply	V.3	Gusset
40	A.001411ND	A.001411ND	1/16 in. birch ply	V.3	Gusset
41	A.001412ND		5/64 in. birch ply	V.3	Ply patch
42		A.002766ND	Spruce	D.T.D.36B	Insert
43	A.002269ND	A.002269ND	Spruce	D.T.D.36B	Insert
44		A.004009ND	Spruce	D.T.D.36B	Insert
45	A.001436ND		Spruce	D.T.D.36B	Insert block
46	A.001461ND	A.001461ND	Bakelite	LF.S.23	Strip
47	A.001462ND	A.001462ND	Bakelite	LF.S.23	Strip
48	A.001463ND	A.001463ND	Spruce	D.T.D.36B	Block
49	A.001456ND	A.001456ND	Alclad, 16 s.w.g.	D.T.D.390	Plate
50	A.001458ND	A.001458ND	Alclad, 16 s.w.g.	D.T.D.390	Plate
51	A.00615ND	A.00616ND	Spruce	D.T.D.36B	Bend
52	A.00617ND	A.00618ND	Spruce	D.T.D.36B	Bend
53	A.00619ND	A.00620ND	Spruce	D.T.D.36B	Bend
54	A.00621ND	A.00622ND	Spruce	D.T.D.36B	Bend
55	A.00623ND	A.00624ND	1/8 in. birch ply	V.3	Screwing strip
56	A.00625ND	A.00626ND	1/8 in. birch ply	V.3	Screwing strip
57	A.00627ND	A.00628ND	1/8 in. birch ply	V.3	Screwing strip
58	A.00629ND	A.00630ND	1/8 in. birch ply	V.3	Screwing strip
59	A.001610ND		Walnut		Datum block
60		A.001609ND	Spruce	D.T.D.36B	Insert block

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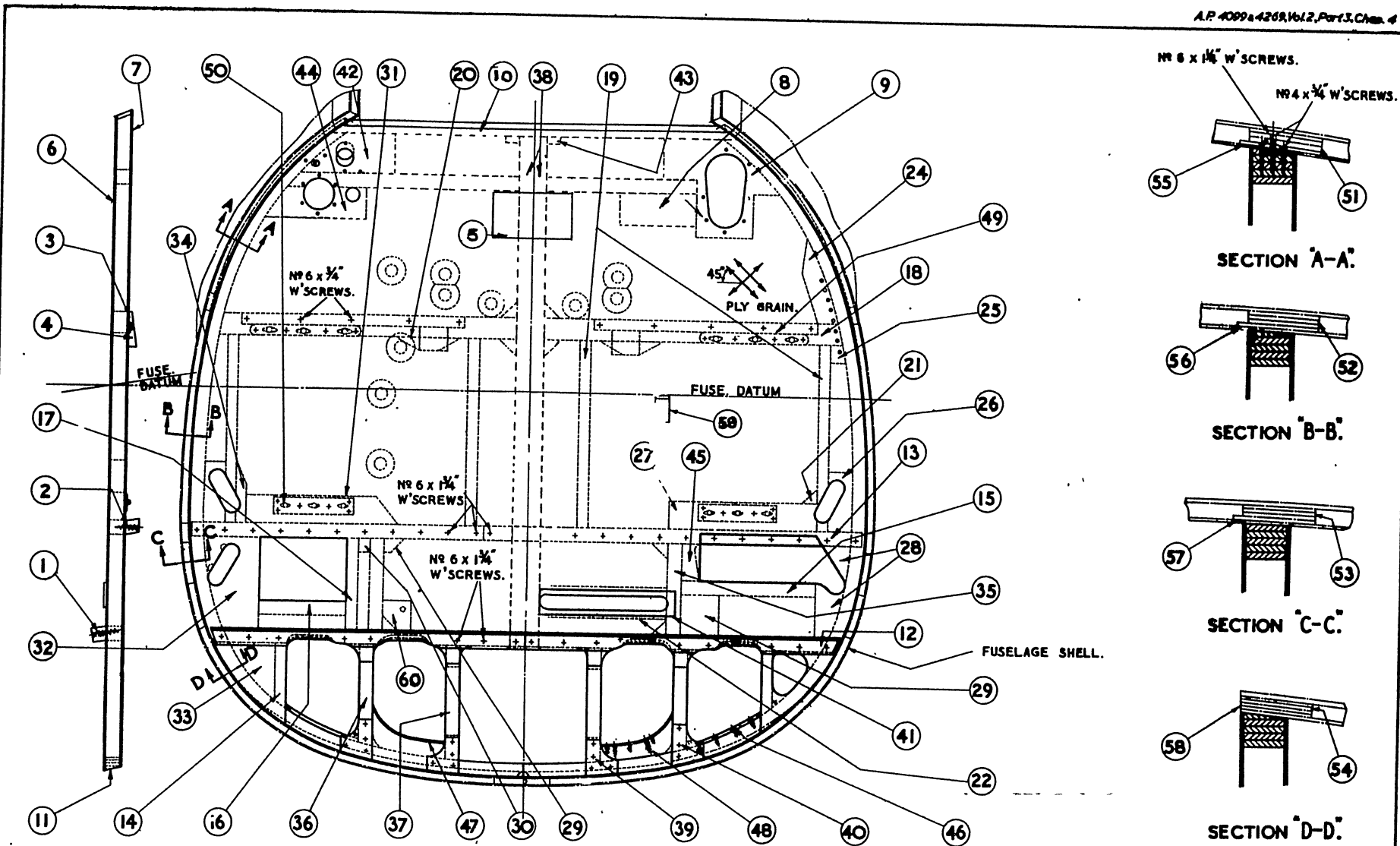


FIG. 4/3

BULKHEAD NO. 2.

FIG. 4/3

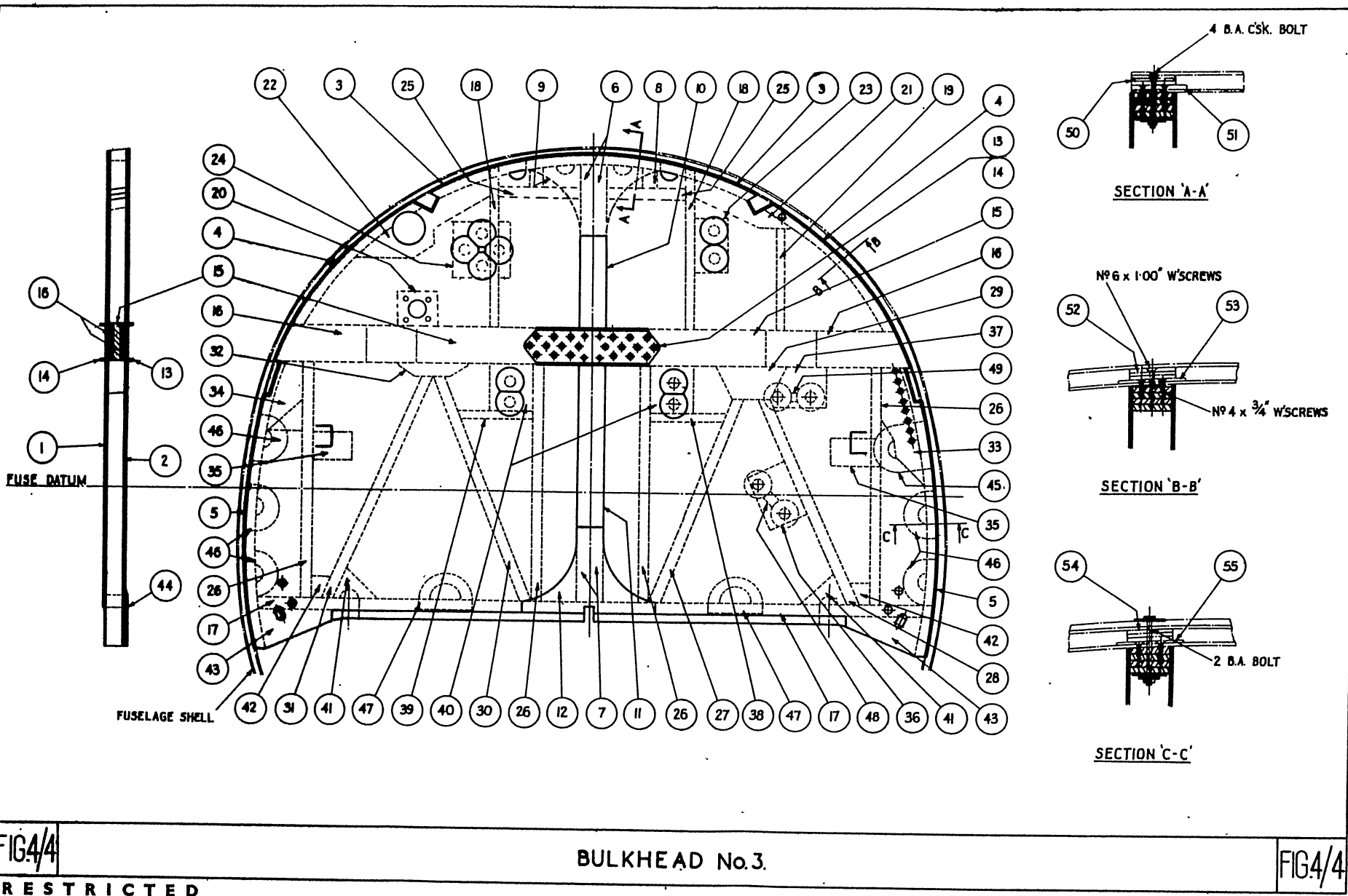
BULKHEAD No. 3—Single-seater Aircraft

Key to items shown on fig. No. 4/4

Assembly, A.004029-30

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.002237ND	A.002238ND	2 mm. birch ply	V.3	Front ply
2	A.002239ND	A.002240ND	2 mm. birch ply	V.3	Rear ply
3	A.002242ND	A.002243ND	Laminated spruce	D.T.D.36B	Bend—top
4	A.002241ND	A.002242ND	Laminated spruce	D.T.D.36B	Bend—centre
5	A.00187ND	A.00190ND	Laminated spruce	D.T.D.36B	Bend—bottom
6	A.00191ND	A.00191ND	Spruce	D.T.D.36B	Member 1-00 in. × 1-12 in.
7	A.00192ND	A.00192ND	Spruce	D.T.D.36B	Member 1-00 in. × 1-12 in.
8	A.002135ND		2 mm. birch ply	V.3	Front lap strip
9	A.00173ND		2 mm. birch ply	V.3	Rear lap strip
10	A.00174ND		3 mm. birch ply	V.3	Lap strip
11	A.00175ND		3 mm. birch ply	V.3	Lap strip
12	A.00176ND		2 mm. birch ply	V.3	Lap strip
13	A.001663		Alclad, 12 s.w.g.	D.T.D.390	Joint plate
14	A.001664		Alclad, 12 s.w.g.	D.T.D.390	Joint plate
15	A.00177ND	A.00177ND	Douglas fir	D.T.D.469	Member 2-75 in. × 1-12 in.
16	A.001661	A.001662	$\frac{3}{8}$ in. laminated fabric with birch ply facing	D.H.A.27	Packing block
17	A.00199ND	A.00199ND	Spruce	D.T.D.36B	Member 0-90 in. × 1-12 in.
18	A.00193ND	A.00193ND	Spruce	D.T.D.36B	Member 0-62 in. × 1-12 in.
19	A.002133ND		Spruce	D.T.D.36B	Member 0-62 in. × 1-12 in.
20		A.002136ND	Spruce	D.T.D.36B	Member 0-62 in. × 1-12 in.
21	A.002137ND		Spruce	D.T.D.36B	Block 1-12 in. thick
22		A.002138ND	Spruce	D.T.D.36B	Block 1-12 in. thick
23	A.001579ND		Spruce	D.T.D.36B	Block 1-12 in. thick
24		A.002136ND	Spruce	D.T.D.36B	Block 1-12 in. thick
25	A.002134ND	A.002134ND	2 mm. birch ply	V.3	Reinforcing patch, 1-0 in. × 1-12 in.
26	A.00198ND	A.00198ND	Spruce	D.T.D.36B	Member 0-75 in. × 1-12 in.
27	A.00990ND		Spruce	D.T.D.36B	Member 0-75 in. × 1-12 in.
28	A.00991ND		Spruce	D.T.D.36B	Block 1-12 in. thick
29	A.00989ND		Spruce	D.T.D.36B	Member 0-75 in. × 1-12 in.
30		A.00196ND	Spruce	D.T.D.36B	Member 0-75 in. 1-12 in.
31		A.00197ND	Spruce	D.T.D.36B	Block 1-12 in. thick
32		A.00201ND	Spruce	D.T.D.36B	Block 1-12 in. thick
33	A.002803ND		Spruce	D.T.D.36B	Block 1-12 in. thick
34		A.004936ND	Spruce	D.T.D.36B	Block 1-12 in. thick
35	A.00998ND	A.00998ND	Spruce	D.T.D.36B	Block 1-12 in. thick
36	A.001588ND		Spruce	D.T.D.36B	Block 1-12 in. thick
37	A.001589ND		Spruce	D.T.D.36B	Block 1-12 in. thick
38	A.001505ND		Spruce	D.T.D.36B	Member 0-62 in. × 1-12 in.
39		A.001572ND	Spruce	D.T.D.36B	Member 0-62 in. × 1-12 in.
40	A.001573ND	A.001573ND	Spruce	D.T.D.36B	Block 1-12 in. thick
41	A.001705ND	A.001705ND	Spruce	D.T.D.36B	Block 1-12 in. thick
42	A.00203ND	A.00203ND	Spruce	D.T.D.36B	Block 1-12 in. thick
43	A.00202ND	A.00202ND	Spruce	D.T.D.36B	Block 1-12 in. thick
44	A.00207	A.00208	Veneered bakelite	D.H.A.32	Packing
45	A.004036ND		2 mm. birch ply	V.3	Reinforcing patch
46	A.001191ND	A.001191ND	2 mm. birch ply	V.3	Reinforcing patch
47	A.00978ND	A.00978ND	2 mm. birch ply	V.3	Reinforcing plate
48	A.001590ND		2 mm. birch ply	V.3	Packing
49	A.001591ND		2 mm. birch ply	V.3	Packing
50	A.00497ND	A.00498ND	Lamd. spruce	D.T.D.36B	Insert bend
51	A.00503ND	A.00504ND	$\frac{1}{8}$ in. birch ply	V.3	Screwing strip
52	A.00499ND	A.00500ND	Lamd. spruce	D.T.D.36B	Insert bend
53	A.00505ND	A.00506ND	$\frac{1}{8}$ in. birch ply	V.3	Screwing strip
54	A.00501ND	A.00502ND	Lamd. spruce	D.T.D.36B	Insert bend
55	A.00507ND	A.00508ND	$\frac{1}{8}$ in. birch ply	V.3	Screwing strip

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RESTRICTED

ACCESS DOORS—Single-seater Aircraft

Key to items shown on fig. No. 4/5

Assembly, A.00333-4

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.00233ND	A.00234ND	$\frac{1}{8}$ in. birch ply	V.3	Inner skin
2	A.00235ND	A.00236ND	$\frac{1}{8}$ in. birch ply	V.3	Outer skin
3	A.00349ND	A.00350ND	Spruce	D.T.D.36B	Laminated member
4	A.00351ND	A.00352ND	Spruce	D.T.D.36B	Member
5	A.00353ND	A.00354ND	Spruce	D.T.D.36B	Laminated member
6	A.00355ND	A.00356ND	Spruce	D.T.D.36B	Member
7	A.00357ND	A.00358ND	Spruce	D.T.D.36B	Laminated member
8		A.00369ND	Spruce	D.T.D.36B	Block
9	A.00370ND		Spruce	D.T.D.36B	Block
10	A.00371ND		Spruce	D.T.D.36B	Laminated member
11		A.00372ND	Spruce	D.T.D.36B	Insert
12	A.00373ND		Spruce	D.T.D.36B	Block
13	A.00374ND	A.00374AD	Spruce	D.T.D.36B	Laminated member
14	A.00375ND	A.00375ND	Spruce	D.T.D.36B	Laminated member
15	A.00376ND		Spruce	D.T.D.36B	Block
16		A.00377ND	Spruce	D.T.D.36B	Block
17	A.00379ND		Spruce	D.T.D.36B	Block
18	A.00380ND		Spruce	D.T.D.36B	Block
19		A.00381ND	Spruce	D.T.D.36B	Block
20		A.00382ND	Spruce	D.T.D.36B	Block
21	A.00383ND		Spruce	D.T.D.36B	Block
22	A.00384ND		Spruce	D.T.D.36B	Block
23		A.00385ND	Spruce	D.T.D.36B	Corner block
24		A.00386ND	Spruce	D.T.D.36B	Corner block
25	A.00387ND		Spruce	D.T.D.36B	Block
26	A.00388ND		Spruce	D.T.D.36B	Block
27		A.00389ND	Spruce	D.T.D.36B	Block
28		A.00390ND	Spruce	D.T.D.36B	Block
29	A.00395ND	A.00395ND	$1\frac{1}{2}$ mm. ply		Strips
30	A.00396ND	A.00396ND	$1\frac{1}{2}$ mm. ply		Strips
31	A.00436ND	A.00436ND	Spruce	D.T.D.36B	Block
32	A.00359ND	A.00360ND	Spruce	D.T.D.36B	Member
33	A.001068ND	A.001068ND	Spruce	D.T.D.36B	Block
34	A.001137	A.001137	Spruce	D.T.D.36B	Block

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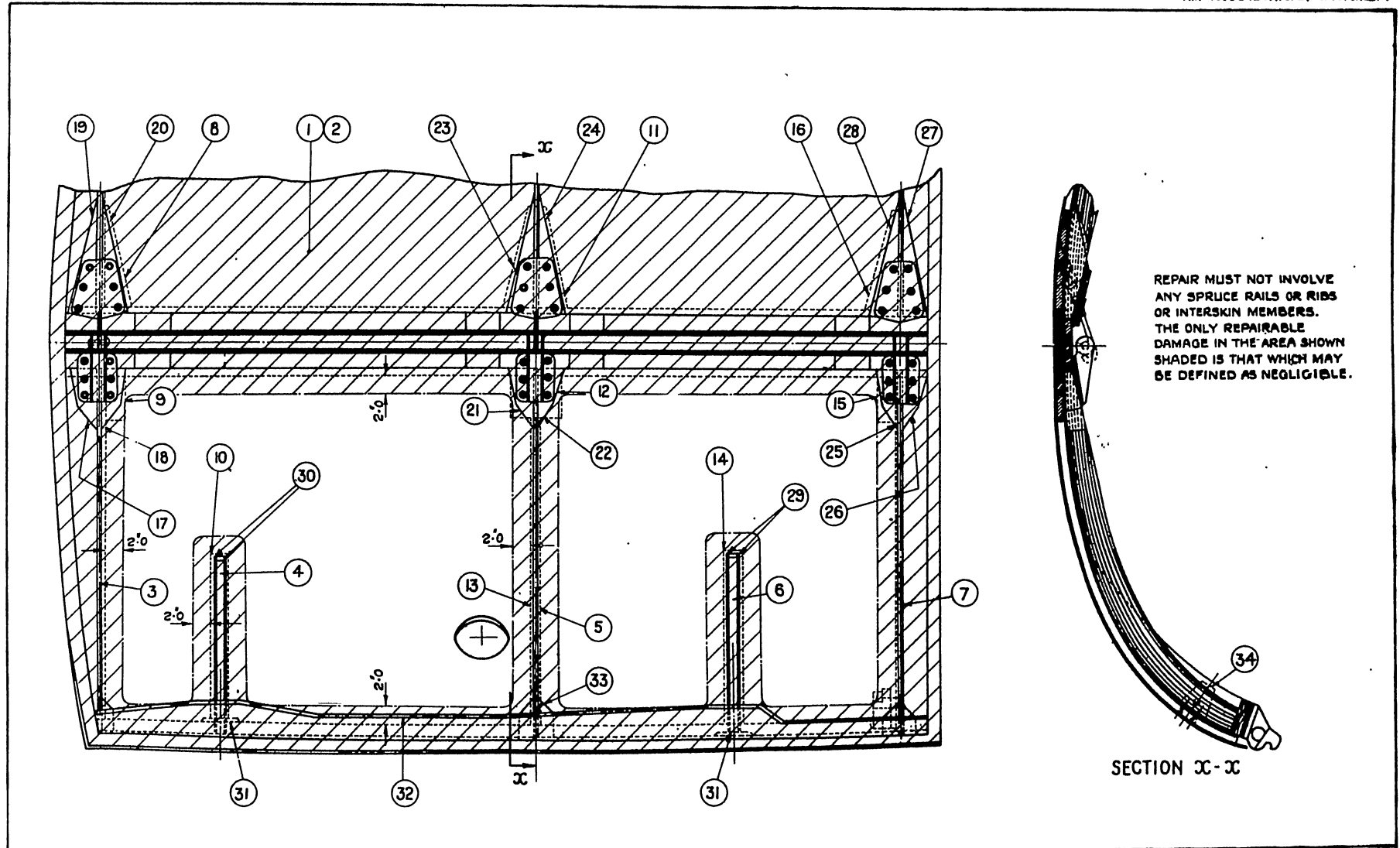


FIG 4/5

ACCESS DOORS, FUSELAGE

FIG 4/5

COCKPIT FLOOR—Single-seater Aircraft

Key to items shown on fig. No. 4/6

Assembly, A.001501-2

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.001506ND	A.001508ND	$\frac{3}{4}$ in. birch ply	V.3	Top ply
2	A.001507ND	A.001509ND	$\frac{1}{8}$ in. birch ply	V.3	Bottom ply
3	A.001475ND	A.001476ND	Laminated spruce	D.T.D.36B	Side member 1-0 in. × 0-88 in.
4		A.001477ND	Spruce	D.T.D.36B	Insert member 1-75 in. × 0-88 in.
5		A.001478ND	Spruce	D.T.D.36B	Insert member 0-75 in. × 0-88 in.
6	A.001510ND		Spruce	D.T.D.36B	Insert member 1-0 in. × 0-88 in.
7	A.002121ND	A.002121ND	Spruce	D.T.D.36B	Insert member 1-0 in. × 0-88 in.
8	A.001483ND	A.001484ND	Spruce	D.T.D.36B	Insert member 1-0 in. × 0-88 in.
9	A.001485ND	A.001486ND	Spruce	D.T.D.36B	Member 1-0 in. × 1-0 in.
10	A.002717ND	A.002719ND	Spruce	D.T.D.36B	Insert member 1-5 in. × 0-88 in.
11	A.001479ND	A.001480ND	Spruce	D.T.D.36B	Insert member 1-0 in. × 0-88 in.
12		A.001482ND	Spruce	D.T.D.36B	Insert member 0-75 in. × 0-88 in.
13	A.001492ND	A.001492ND	Spruce	D.T.D.36B	Block, 1-0 in. × 0-88 in.
14		A.001487ND	Spruce	D.T.D.36B	Block 2-5 in. × 0-88 in.
15	A.001488ND	A.001488ND	Spruce	D.T.D.36B	Corner block 0-88 in. thick
16	A.001491ND	A.001491ND	Spruce	D.T.D.36B	Block 1-7 in. × 0-88 in.
17	A.001494ND	A.001494ND	Spruce	D.T.D.36B	Block 0-88 in. thick
18	A.001495ND	A.001495ND	Spruce	D.T.D.36B	Block 0-88 in. thick
20	A.001195		Veneered bakelite	D.H.A.27	Rubbing strip
21	A.001497ND	A.001498ND	$\frac{1}{8}$ in. Birch ply	V.3	Packing
22	A.001499ND	A.001500ND	Veneered bakelite	D.H.A.27	Packing
23	A.001496ND	A.001496ND	$\frac{1}{8}$ in. birch	V.3	Packing
24	Z.00296		M.S. bar	S.1	Special stud

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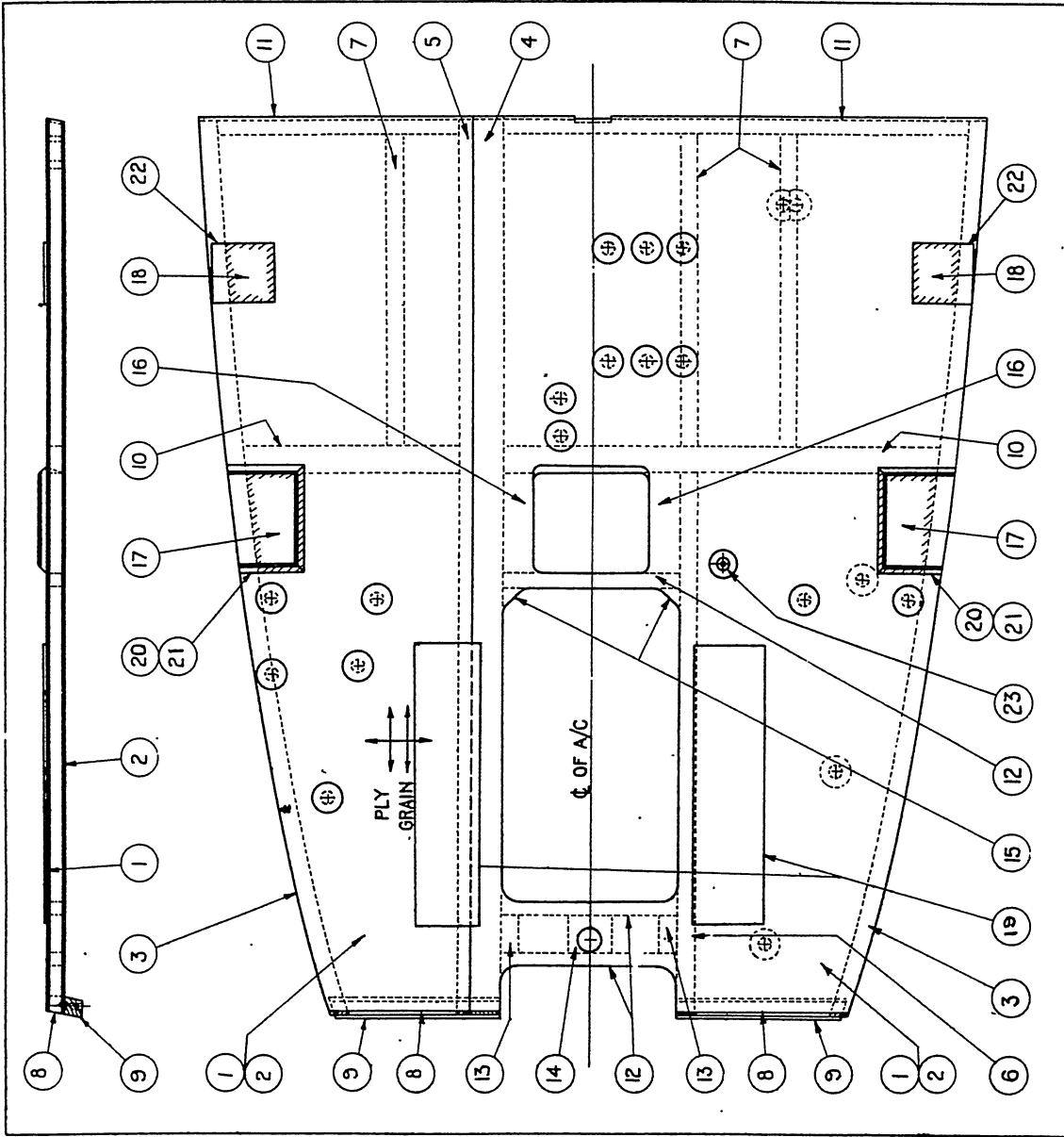


FIG4/6

COCKPIT FLOOR

FIG4/6

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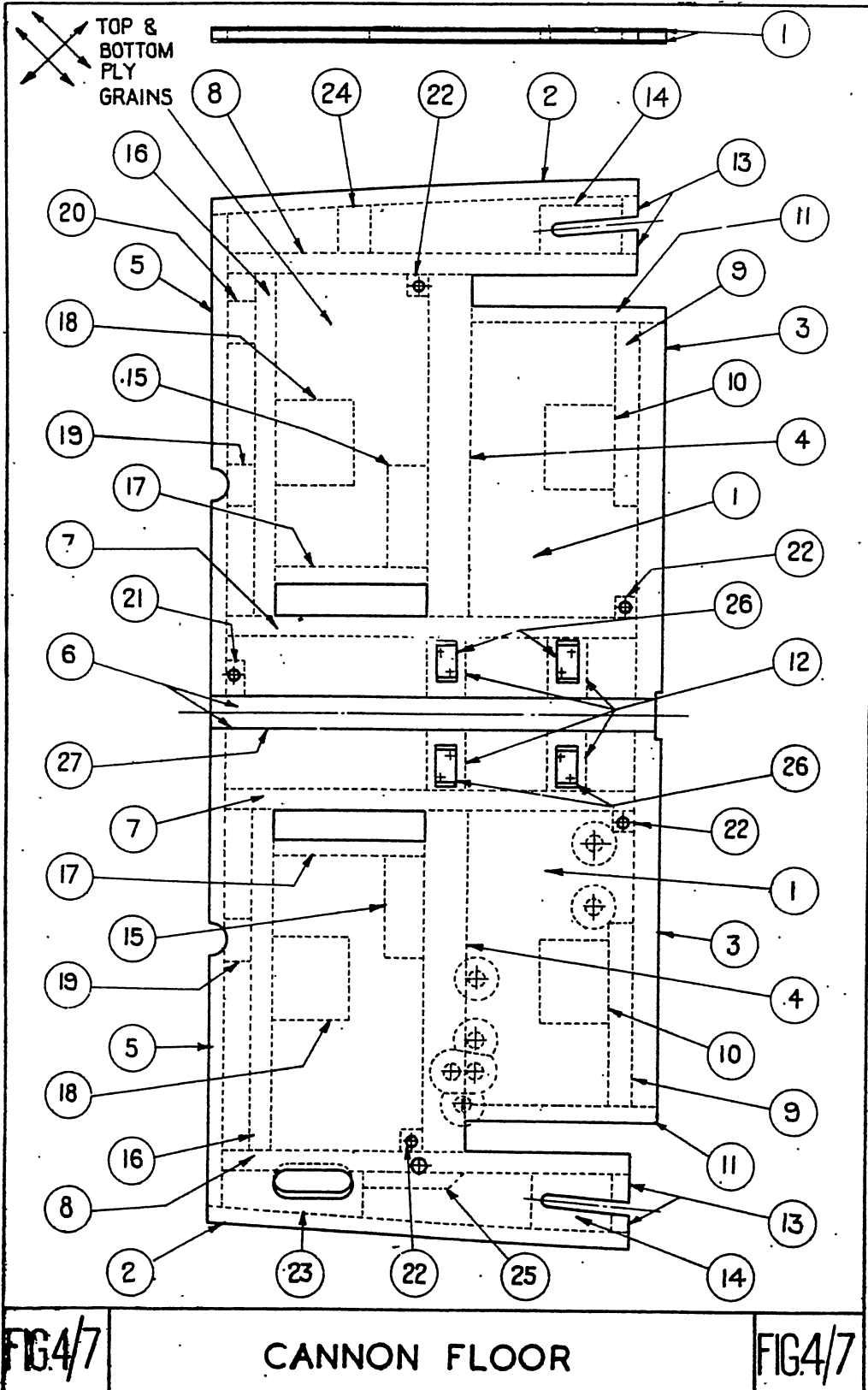
CANNON FLOOR—Single-seater Aircraft

Key to items shown on fig. No. 4/7

Assembly, A.0019A

Key No.	Part number		Material	Specification	Description
	L.H.	R.H.			
1	A.001535ND	A.001535ND	$\frac{1}{8}$ in. birch ply	V.3	Top and bottom plies
2	A.001552ND	A.001552ND	Laminated spruce	D.T.D.36B	Insert bend 0.75 in. × 0.48 in.
3	A.001553ND	A.001553ND	Spruce	D.T.D.36B	Insert member 1.2 in. × 0.48 in.
4	A.001541ND	A.001541ND	Spruce	D.T.D.36B	Insert block 1.95 in. × 0.48 in.
5	A.001536ND	A.001536ND	Spruce	D.T.D.36B	Insert member 0.75 in. × 0.48 in.
6	A.001556ND	A.001556ND	Spruce	D.T.D.36B	Insert member 0.75 in. × 0.48 in.
7	A.001557ND	A.001557ND	Spruce	D.T.D.36B	Insert member 0.95 in. × 0.48 in.
8	A.001548ND	A.001548ND	Spruce	D.T.D.36B	Insert member 0.95 in. × 0.48 in.
9	A.001555ND	A.001555ND	Spruce	D.T.D.36B	Insert member 0.95 in. × 0.48 in.
10	A.001540ND	A.001540ND	Spruce	D.T.D.36B	Insert block 1.12 in. × 0.48 in.
11	A.001550ND	A.001550ND	Spruce	D.T.D.36B	Insert block 4.0 in. × 3.2 in. × 0.48 in.
12	A.001560ND	A.001560ND	Spruce	D.T.D.36B	Insert member 0.75 in. × 0.48 in.
13	A.001554ND	A.001554ND	Spruce	D.T.D.36B	Insert block 1.85 in. × 0.48 in.
14	A.001551ND	A.001551ND	Spruce	D.T.D.36B	Insert member 0.75 in. × 0.48 in.
15	A.001543ND	A.001543ND	Spruce	D.T.D.36B	Insert block 2.38 in. × 0.48 in.
16	A.001537ND	A.001537ND	Spruce	D.T.D.36B	Insert block 1.85 in. × 0.48 in.
17	A.001545ND	A.001545ND	Spruce	D.T.D.36B	Insert member 0.95 in. × 0.48 in.
18	A.001539ND	A.001539ND	Spruce	D.T.D.36B	Insert member 0.75 in. × 0.48 in.
19	A.001538ND	A.001538ND	Spruce	D.T.D.36B	Insert block 3.6 in. × 0.48 in.
20		A.002028ND	Spruce	D.T.D.36B	Insert block 2.0 in. × 0.48 in.
21		A.001592ND	Spruce	D.T.D.36B	Insert block 2.0 in. × 0.48 in.
22	A.001544ND	A.001544ND	Spruce	D.T.D.36B	Insert block 0.85 in. × 0.48 in.
23	A.001546ND		Spruce	D.T.D.36B	Insert block 1.0 in. × 1.0 in. × 0.48 in.
24		A.001547ND	Spruce	D.T.D.36B	Insert block 0.48 in. thick
25	A.001549ND		Spruce	D.T.D.36B	Insert block 1.5 in. × 0.48 in.
26	A.001533ND	A.001533ND	Spruce	D.T.D.36B	Insert block 0.75 in. × 0.48 in.
27	A.001558ND		2 mm. birch ply	V.3	Location blocks 0.25 in. thick Butt strap

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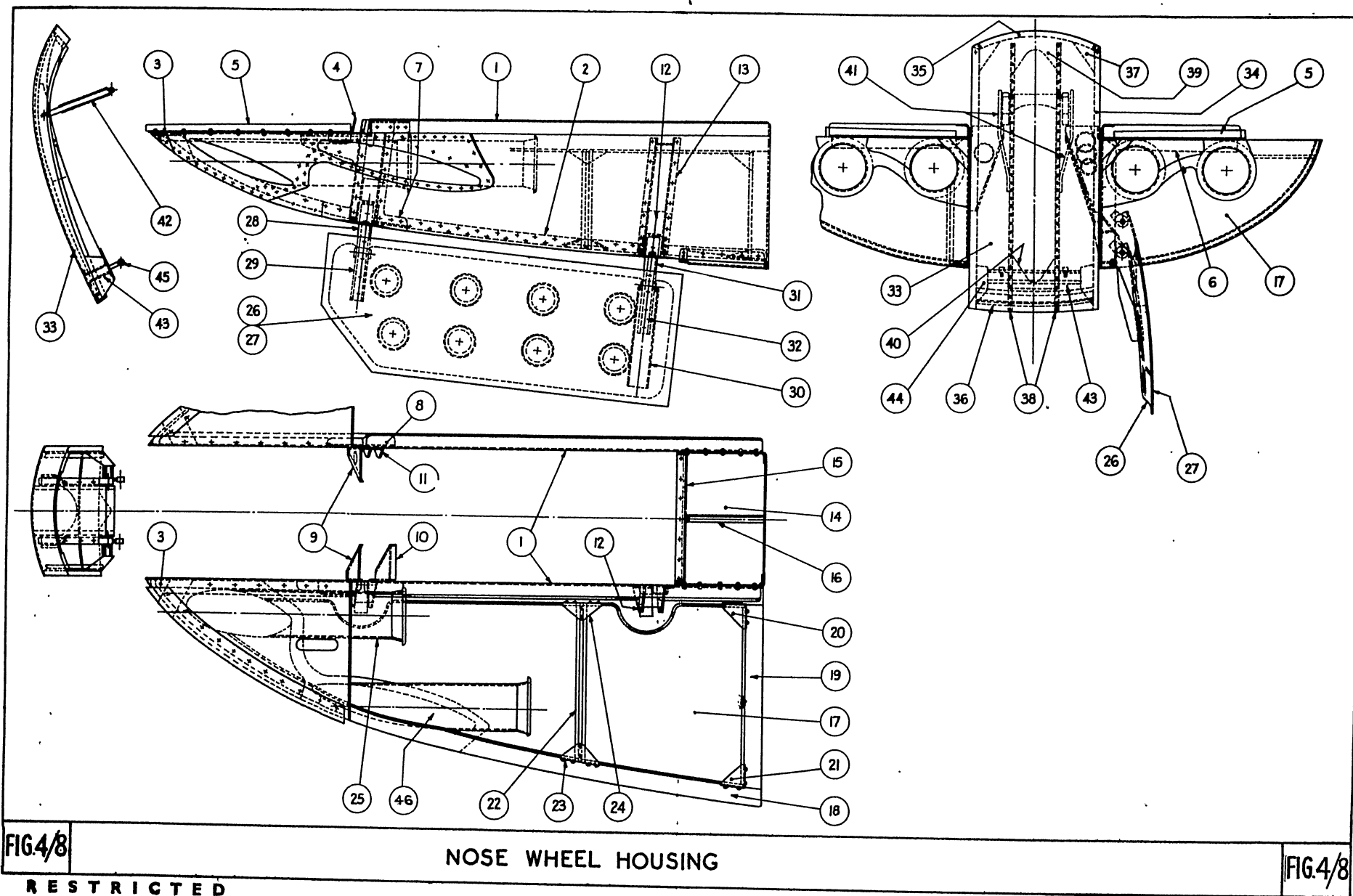
NOSE WHEEL HOUSING—Single-seater Aircraft

Key to items shown fig. No. 4/8

Key No.	Part number		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	A.001081ND	A.001082ND	Alclad	D.T.D.390 or L.38	20	Side plate
2	A.001083ND	A.001084ND	M.S.P.	S.3 or D.H.A.28	18	Angle
3	A.001423ND	A.001422ND	M.S.P.	S.3	18	Fairing
4	A.00653ND	A.00654ND	Alclad	D.T.D.390 or L.38	20	Cover plate
5	A.00663ND	A.00664ND			20	Angle
6	A.001077ND	A.001078ND	Magnesium alloy	D.T.D.59A	18	Angle
7	A.001363				Casting	Front hinge bracket
8		A.001416		Bracket		
9	A.00635	A.00636	Alclad	D.T.D.390 or L.38	16	Diaphragm
10	A.00634				16	Diaphragm
11		A.00633		Link guide bracket		
12	A.001124B		M.S.P.	S.3 or D.T.D.124A	18	Rear hinge bracket
13	A.001123		Alclad	D.T.D.390 or L.38	20	Assembled on A.001124A
14		A.00661ND			Stiffener	
15		A.00659ND		Fixed fairing	22	Assembled on A.00648A
16		A.00660ND		Angle	20	
17	S.00165ND	S.00166ND		Angle	20	
18	S.00657ND	S.00658ND	M.S.P.	S.3	18	Fairing
19	S.00161ND	S.00162ND	M.S.P.	S.3	18	Stiffening member
20	S.00158ND	S.00158ND	Alclad	D.T.D.390	20	Gusset
21	S.00163ND	S.00164ND	Alclad	D.T.D.390	20	Gusset
22	S.00167ND	S.00168ND	Alclad	Section ZH311/20		Stiffener
23	S.00169ND	S.00170ND				Gusset
24	S.00175ND	S.00175ND	Alclad	D.T.D.390	20	Gusset
25	S.00163ND	S.00164ND	M.S.P.	D.T.D.171/B	18	Cannon spouts
26	G.00253B		Alclad	D.T.D.390 or L.38	20	Inner plate
27	G.00253C		Alclad	D.T.D.390 or L.38	20	Outer plate
28	G.00514ND		Alum. alloy	D.T.D.298	Casting	Front hinge. Assembled on G.00254A
29	G.00256		P/F. Lam. sheet	L.F.S.23		Packing
30	G.00253ND		Alclad	D.T.D.390 or L.38	18	Reinforcing plate
31	G.00515ND		Alum. alloy	D.T.D.298	Casting	Rear hinge. Assembled on G.00255A
32	G.00257		P/F. Lam. sheet	L.F.S.23		Packing
33		G.00578				Fairing
34	G.00585	G.00584			18	Side member
35		G.00579			18	Front member
36		G.00592			18	Edge member
37	G.00591	G.00590	Alclad	D.T.D.390 or L.38	18	Cornet gusset
38	G.00583	G.00582			18	Stiffener
39		G.00588			18	Fish plate
40		G.00589			18	Fish plate
41	G.00587	G.00586			18	Stiffener
42		G.00267A				Assembly of bridge link
43		G.00259A				Assembly of rear member
44	G.00266	G.00266	Alclad	D.T.D.390 or L.38	20	Gusset plate
45	G.00653	G.00653	M.S.	S.6 or S.1	Bar	Eye-bolt
46	S.00165ND	S.00165ND	M.S.P.	D.T.D.171B	18	Cannon spout

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D (AL10)



FIXED NOSING—Single-seater Aircraft

Key to items shown on fig. No. 4/9

Assembly, A.00717A

Key No.	Part number		Material	Specification	S.W.G.	Description		
	L.H.	R.H.						
1	A.001011ND	A.001012ND	Alclad	D.T.D.390	20	Skin		
2	A.00718ND	A.00718ND			16	Butt strap		
3	A.001922	A.001922			20	Lap plate		
4	A.001894	A.001894			20	Front bracket		
5	A.001907	A.001908			20	Stiffening channel		
6	A.001903	A.001904			20	Mid stiffener		
7	A.001905	A.001906			20	Rear stiffener		
8	A.001897	A.001898			20	Bottom stiffener		
9	A.001911	A.001911			20	Gusset		
10	A.001912	A.001912			20	Gusset		
11	A.001913	A.001913			20	Gusset		
12	A.001914	A.001914			20	Gusset		
13	A.001915	A.001915			20	Gusset		
14	A.001916	A.001916			20	Gusset		
15	A.004088	A.004088			20	Gusset		
16	A.001923	A.001923			20	Angle		
17	A.001895	A.001896			20	Top channel		
18	A.00917A	A.00917A			Alum. alloy	D.T.D.213A	20	Assembly of front peg
19	A.001899	A.001900					20	Support brackets
20	A.00927ND	A.00927ND			Alum. alloy	D.T.D.213A	20	Packing strip
21	A.001901	A.001902					20	Stiffening bracket
22	A.004070	A.004070			20	Assembly of seal for camera aperture		
23	A.00757A	A.00757A	Alclad	D.T.D.390	16	Front attachment bracket		
24	A.00738A	A.00738A	Alclad	D.T.D.390	20	Assembly of inlet for cockpit ventilator duct		
25	A.00912A	A.00912A				Assembly of spring plunger		
26		A.001269ND				Frame		
27		A.001270ND	16	Cover plate				
28	A.004089ND	A.004084ND	Alclad	D.T.D.390	20	Stiffener		
29	A.004083ND				20	Stiffener		
30	A.004079ND				20	Stiffener		
31	A.004081ND				20	Stiffener		
32		B.001182ND	Lead	—	20	Ballast weight		
33	B.001184ND	Ballast weight						
34	B.001185ND	Ballast weight						
35	B.001183ND	Ballast weight						

Note . . . Items 32 to 35 are for Sea Vampire only

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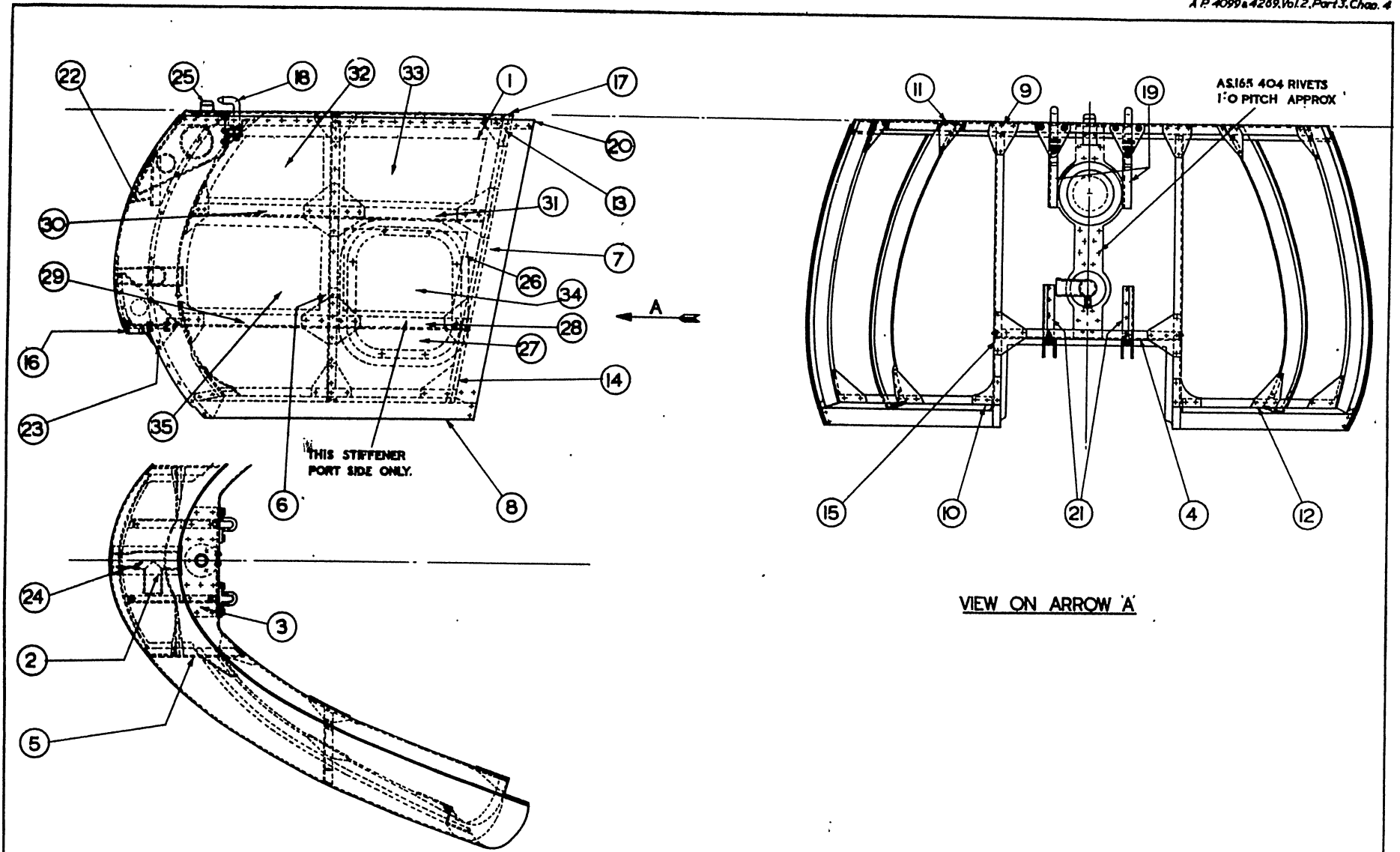
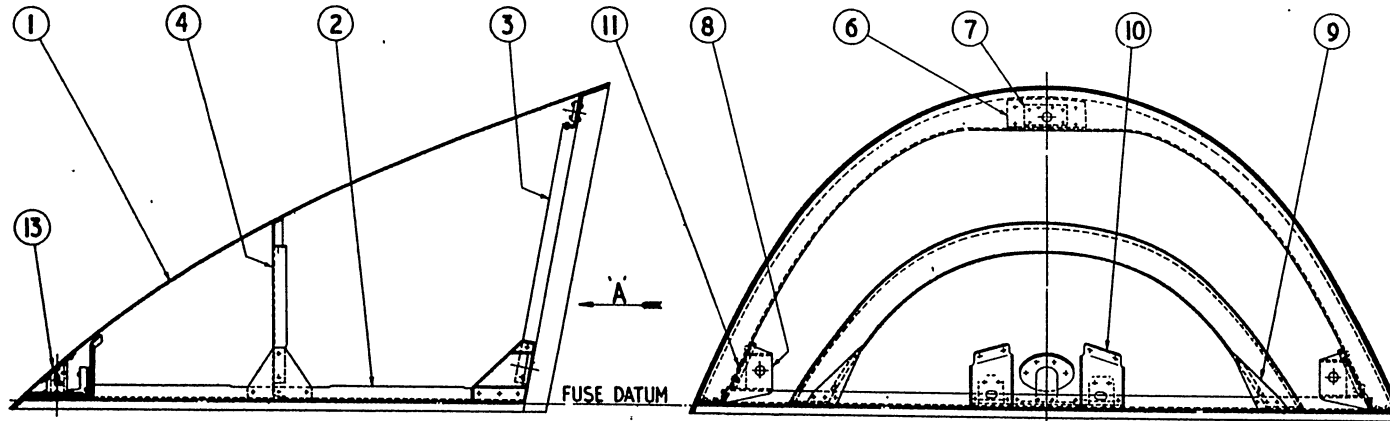


FIG. 4/9

FIXED NOSING
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FIG. 4/9



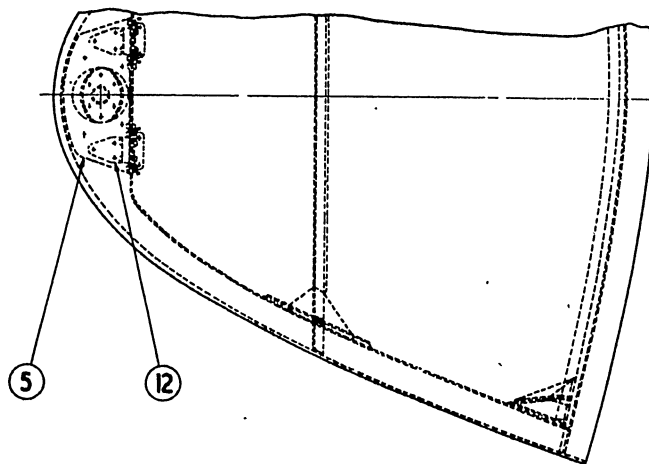
SECTION THRO' C.

VIEW ON ARROW 'A'

DETACHABLE NOSING

Key to items

Assembly, A.00691A



Key No.	Part number		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	A.00692ND				20	Skin
2	A.001931	A.001932			20	Stiffener
3	A.001929	A.001930			20	Stiffener
4	A.002763		Alclad	D.T.D.390 or L.38	20	Stiffener
5	A.002709				20	Front lap plate
6	A.002711				20	Lap plate
7	A.00900ND		M.S.P.	S.3	10	Block
8	A.00901ND		M.S.P.	S.3	10	Block
9	A.001935		Alclad	D.T.D.390 or L.38	20	Gusset
10	A.001925	A.001926	M.S.P.	S.3	20	Front bracket
11	A.00905ND	A.00906ND	M.S.P.	S.3	20	Rear bracket
12	A.00907		Aluminium alloy	L.I or D.T.D.423		Cleat
13	A.00908					

FIG.4/10 DETACHABLE NOSING

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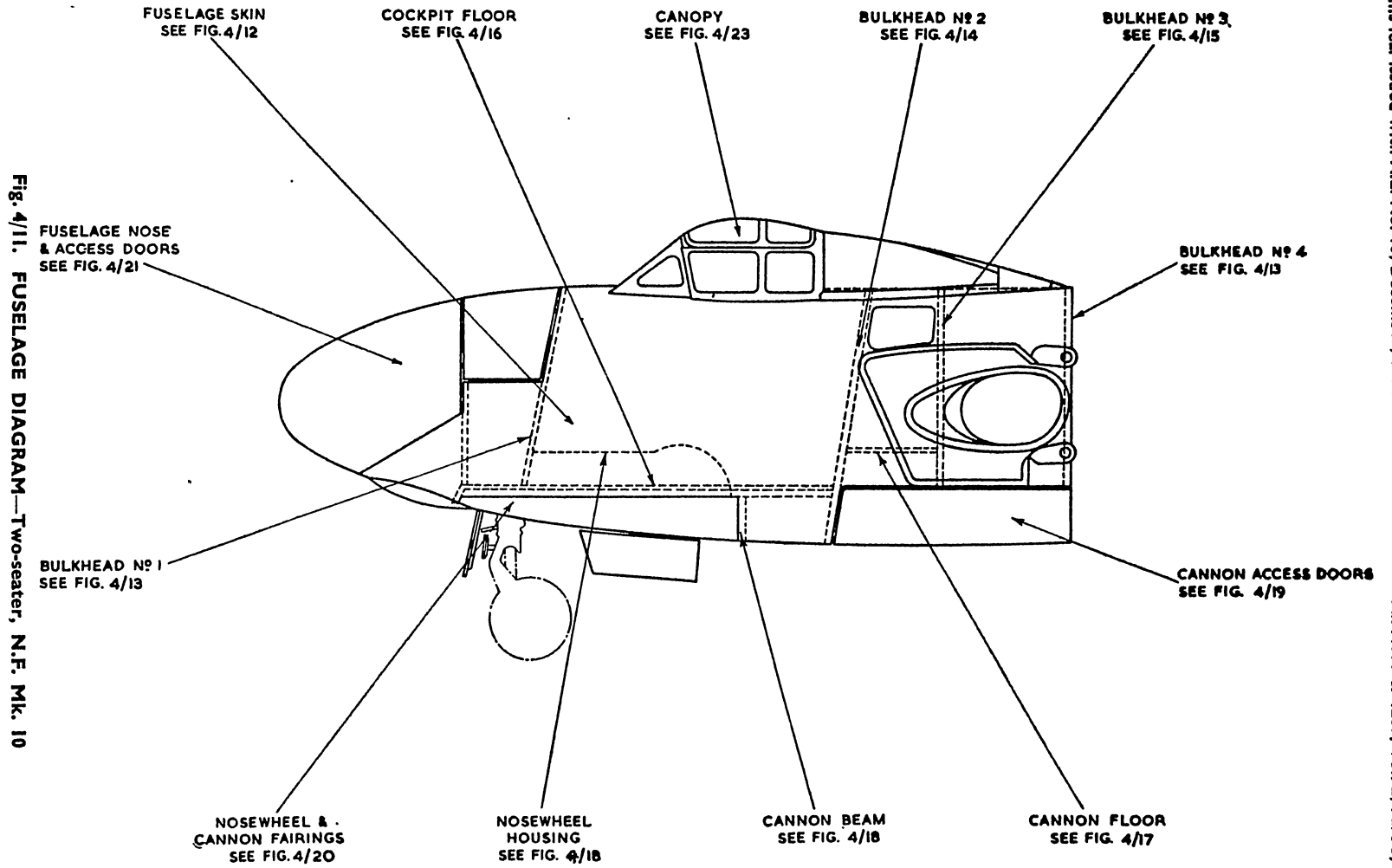


Fig. 4/11. FUSELAGE DIAGRAM—Two-seater, N.F. Mk. 10

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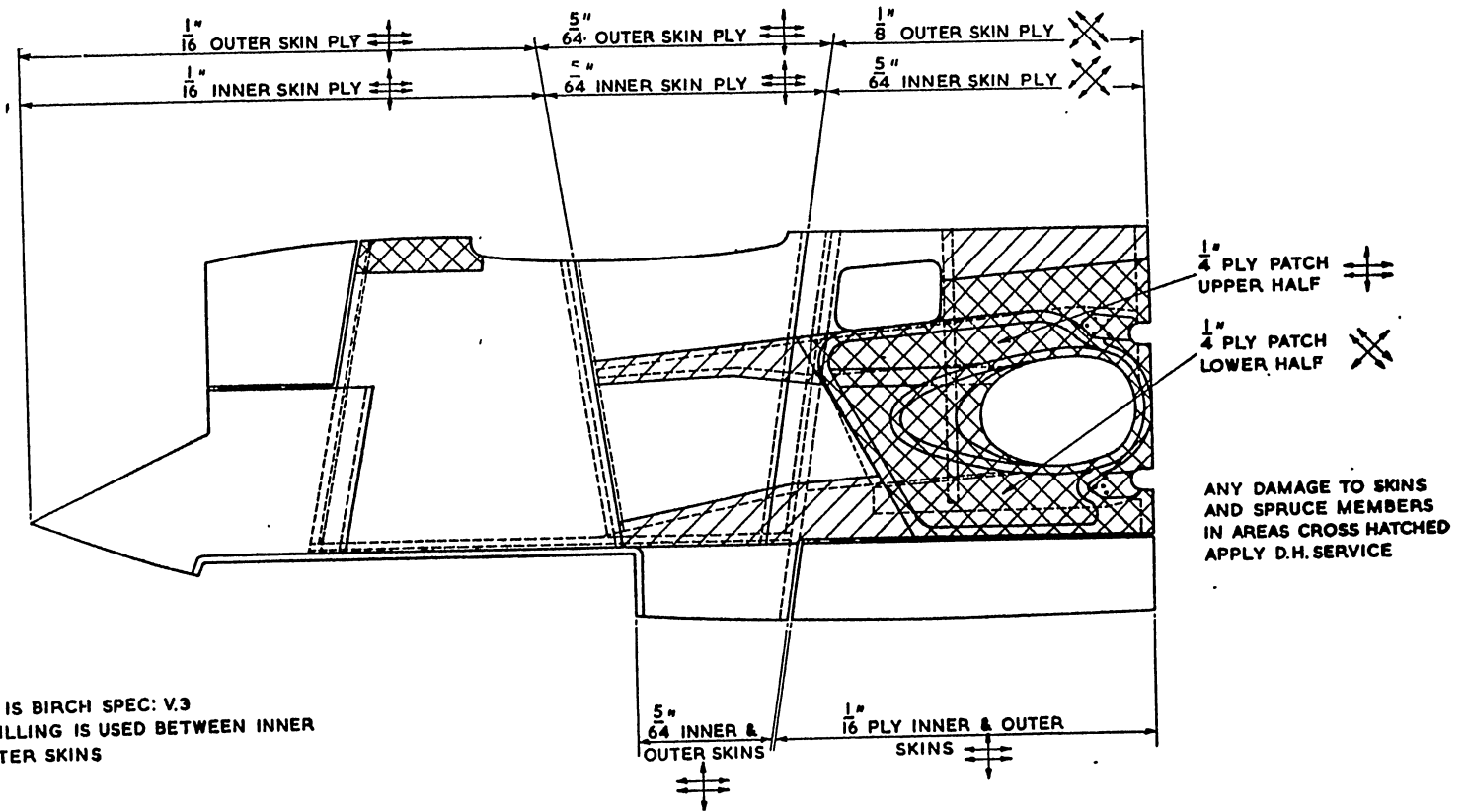


Fig. 4/12. FUSELAGE SKIN, Two-seater N.F. Mk. 10

ALL PLY IS BIRCH SPEC: V.3
BALSA FILLING IS USED BETWEEN INNER AND OUTER SKINS

Definition of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Skin	Bruises one lamination deep 0.75 in. across and 2.0 in. along the grain, 12.0 in. apart	Isolated holes 0.6 in. x 1.8 in., not more than 3 per fuselage	4/29(A)
		Groups of holes 0.6 in. x 1.8 in. not closer than 18.0 in. apart Holes up to 8.0 in. dia., 24.0 in. apart	4/29(B) 4/30 or A 4/31 4/31
Interskin Members	Bruises 0.1 in. deep, 0.5 in. across and 2.0 in. along the grain, 12.0 in. apart	Damage in excess of above Damage in excess of negligible	4/31 4/31

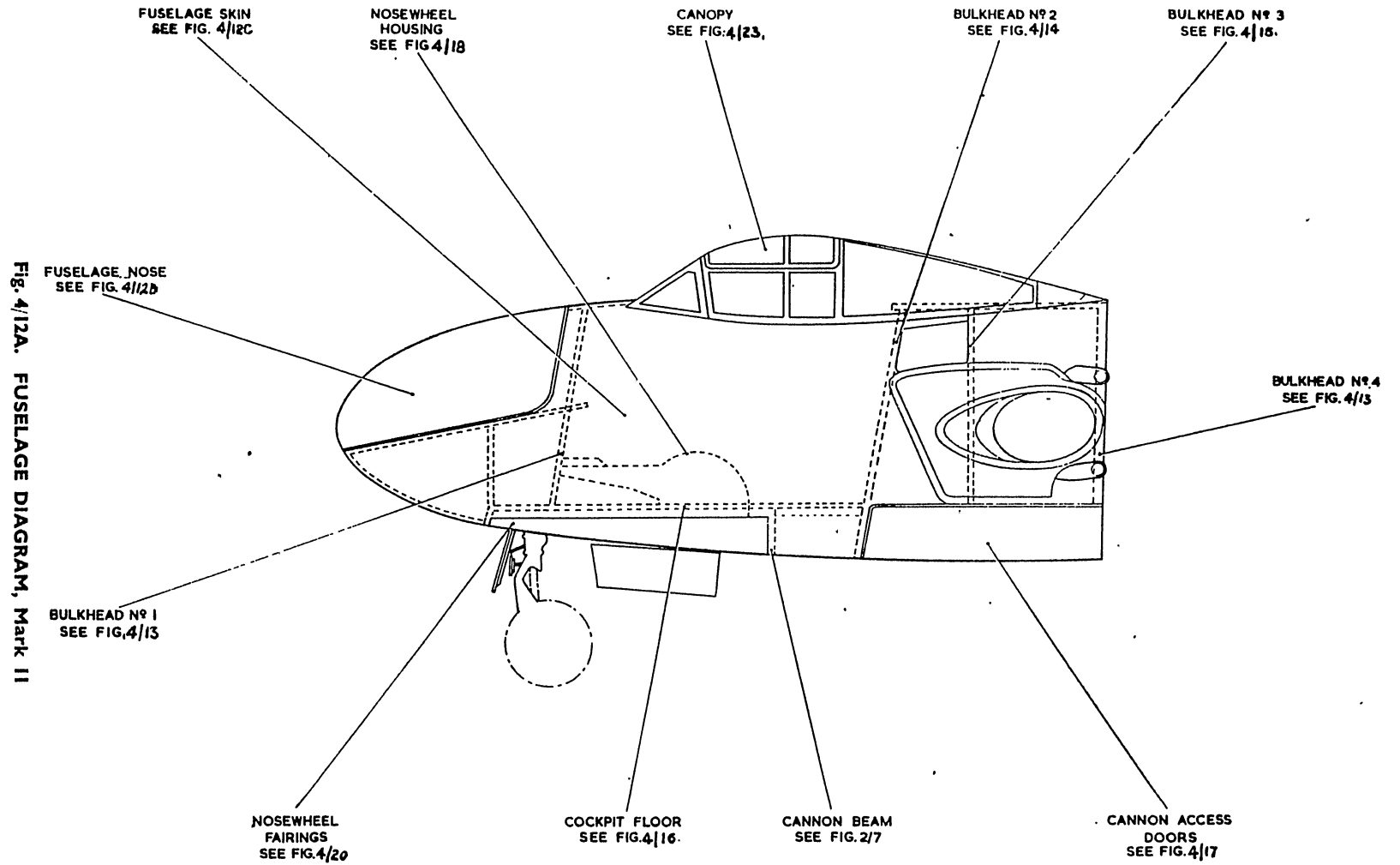
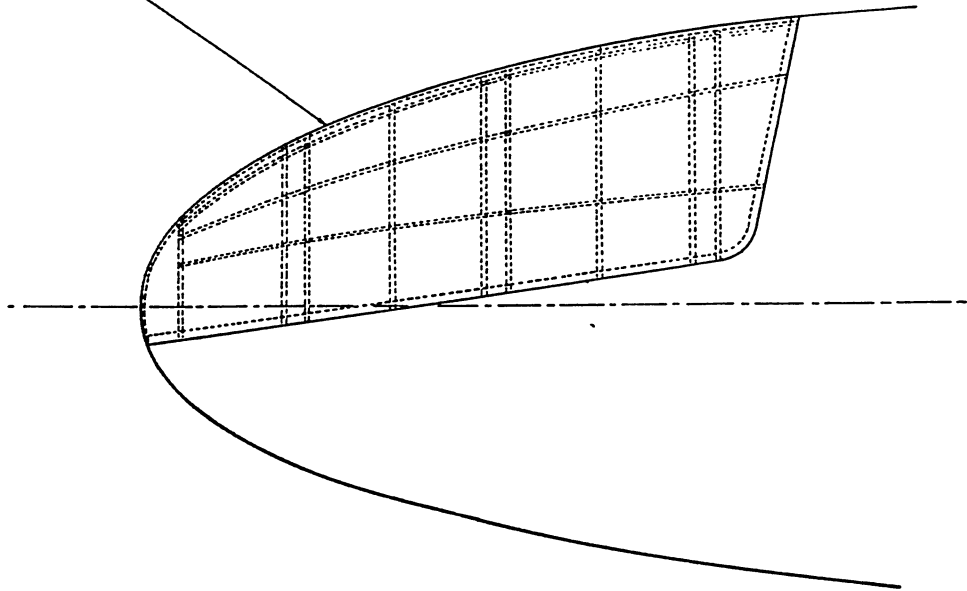


Fig. 4/12A. FUSELAGE DIAGRAM, Mark II

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NOSE CAP 18 SWG. DTD.213



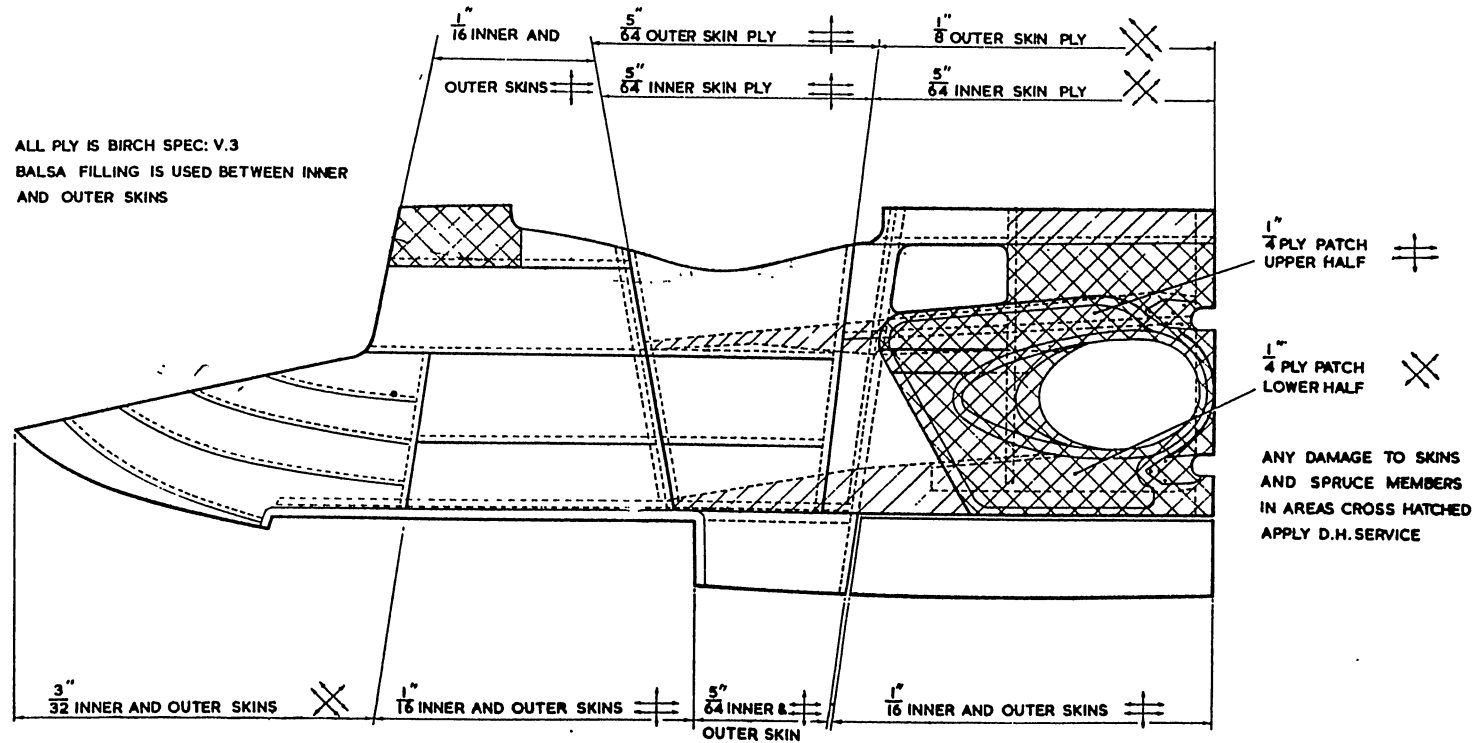
Definitions of negligible and repairable damage

Component	Definitions of damage		Repair Fig. No.	Repair material Item No.
	Negligible	Repairable		
Skin	Dents 0.1 in. deep, 1.0 in. dia., 12.0 in. apart	Dents or holes not affecting stiffeners, up to 4.0 in. dia.	4/33	20A, 20B, 40, 41
Stiffeners	Dents 0.1 in. deep, 0.75 in. long, 8.0 in. apart	When damaged in excess of negligible replace		

Fig. 4/12B. FUSELAGE NOSE, Mark II

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Fig. 4/12C. FUSELAGE SKIN, Mark II

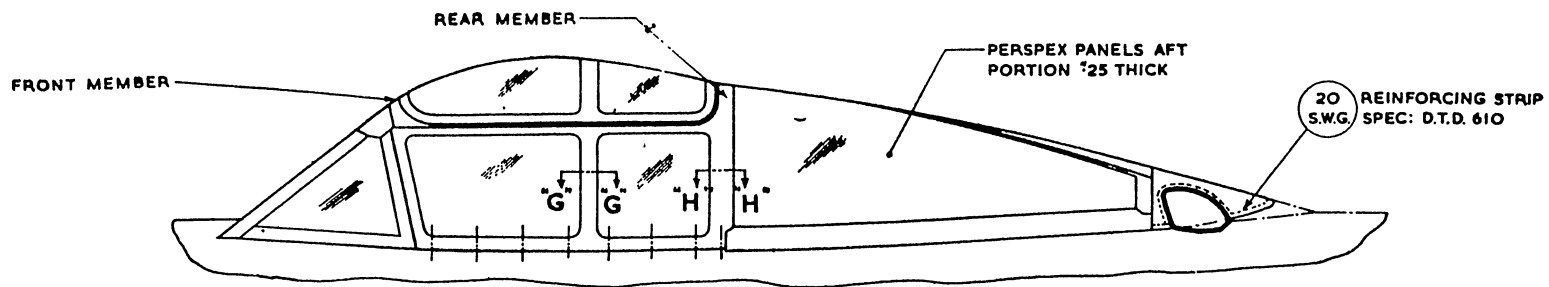


Definitions of Negligible and Repairable damage

Component	Definitions of damage		Repair Fig. No.	Repair material Item No.
	Negligible	Repairable		
Skin	Bruises one lamination deep, 0.75 in. across and 2.0 in. along the grain, 12.0 in. apart	Isolated holes 0.6 in. x 1.8 in., not more than three in a fuselage	4/29A	1, 72
		Groups of holes not more than 18.0 in. apart	4/29B	1, 71 or 72
		Holes 8.0 in. dia., 24.0 in. apart	4/30 or 4/31	1, 2, 3, 72
		Damage in excess of above	4/31	1, 2, 3, 72
Interskin members	Bruises 0.1 in. deep, 0.5 in. across, 2.0 in. along the grain and 12.0 in. apart	Damage in excess of negligible	4/31	1, 2, 3, 72

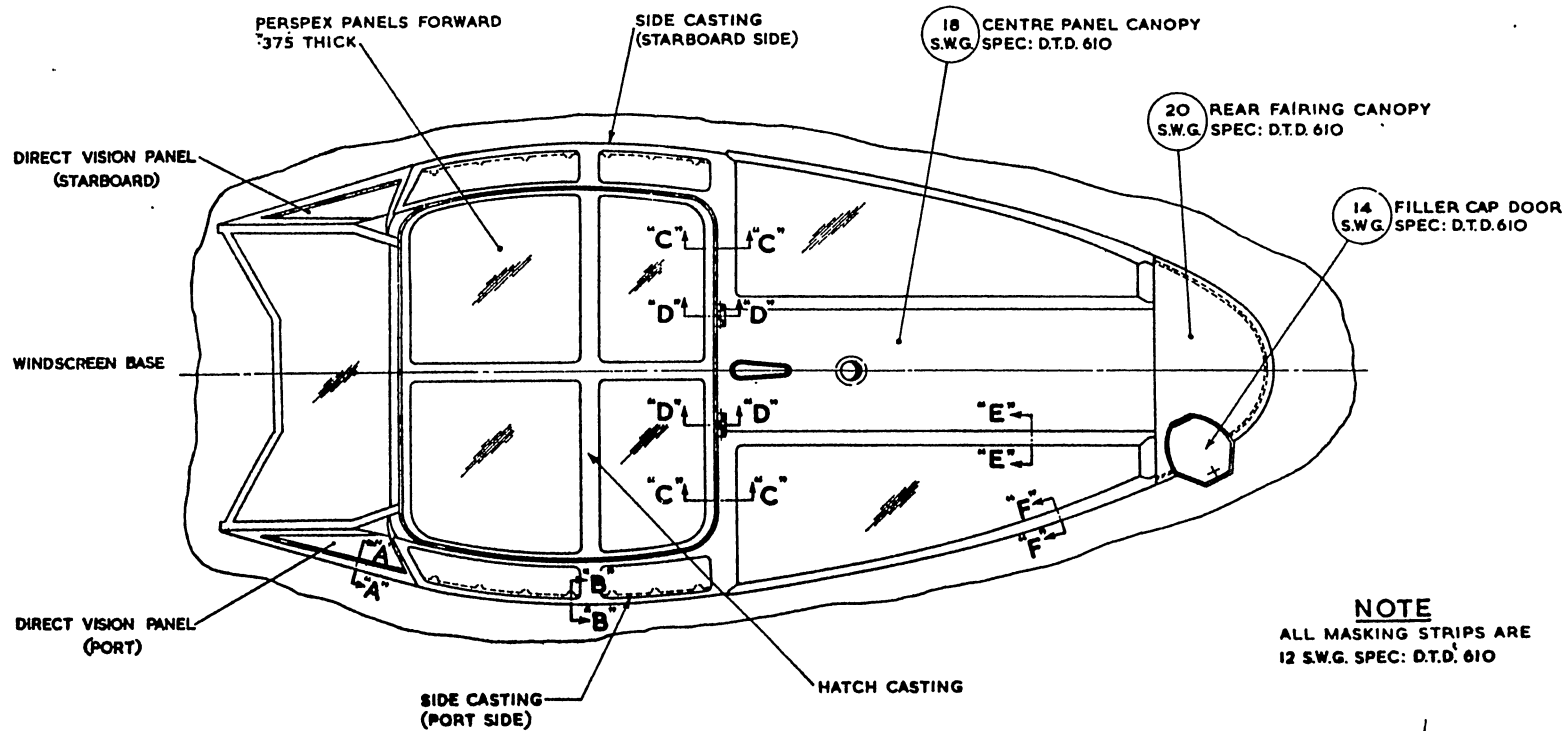
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E21665 670897847 2/53 1100 C & P Gp.1

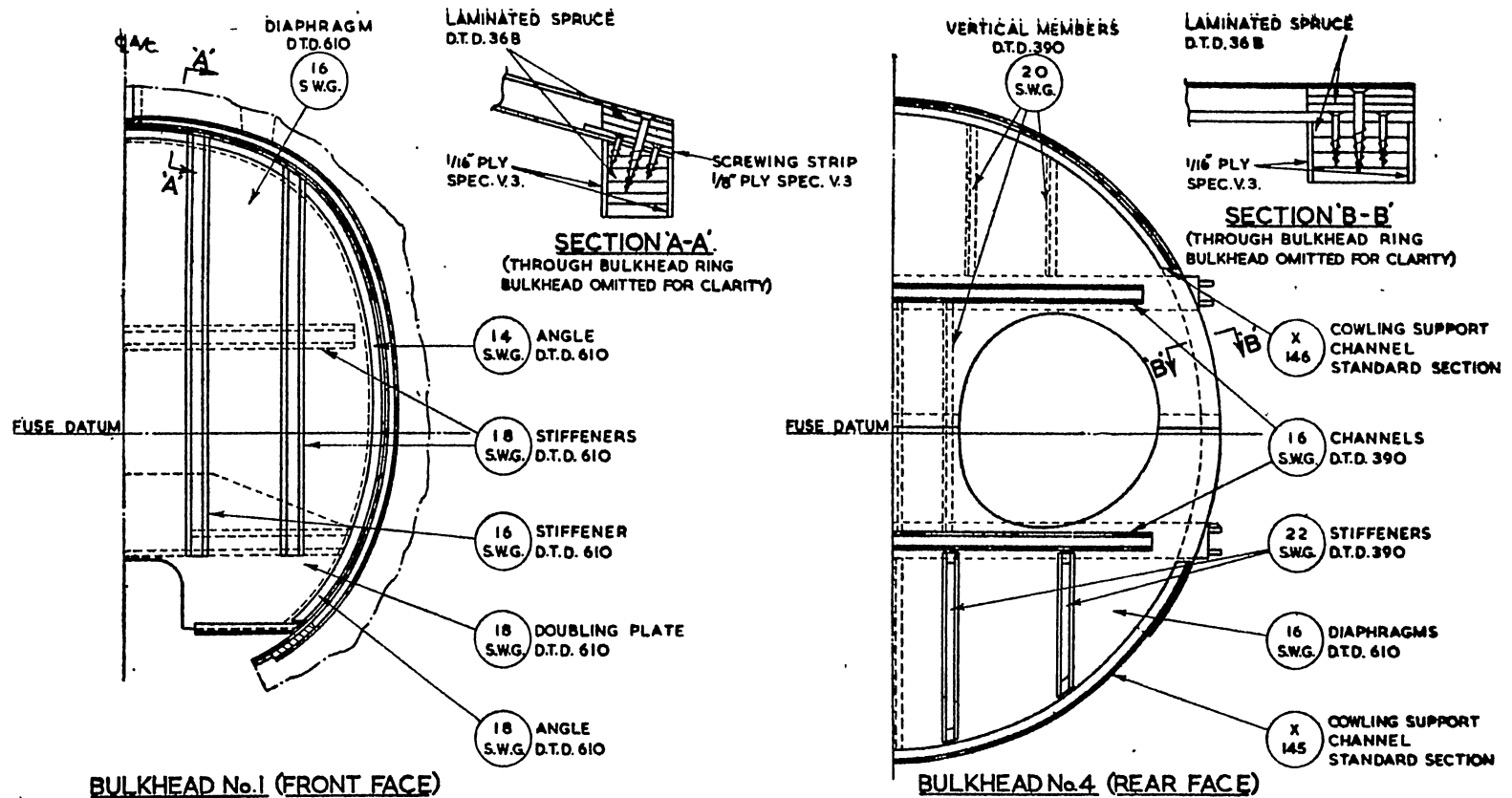
Fig. 4/12D. CANOPY, Mark II



NOTE
ALL MASKING STRIPS ARE
12 S.W.G. SPEC: D.T.D. 610

1 copy.

Fig. 4/13. BULKHEADS No. 1 and 4

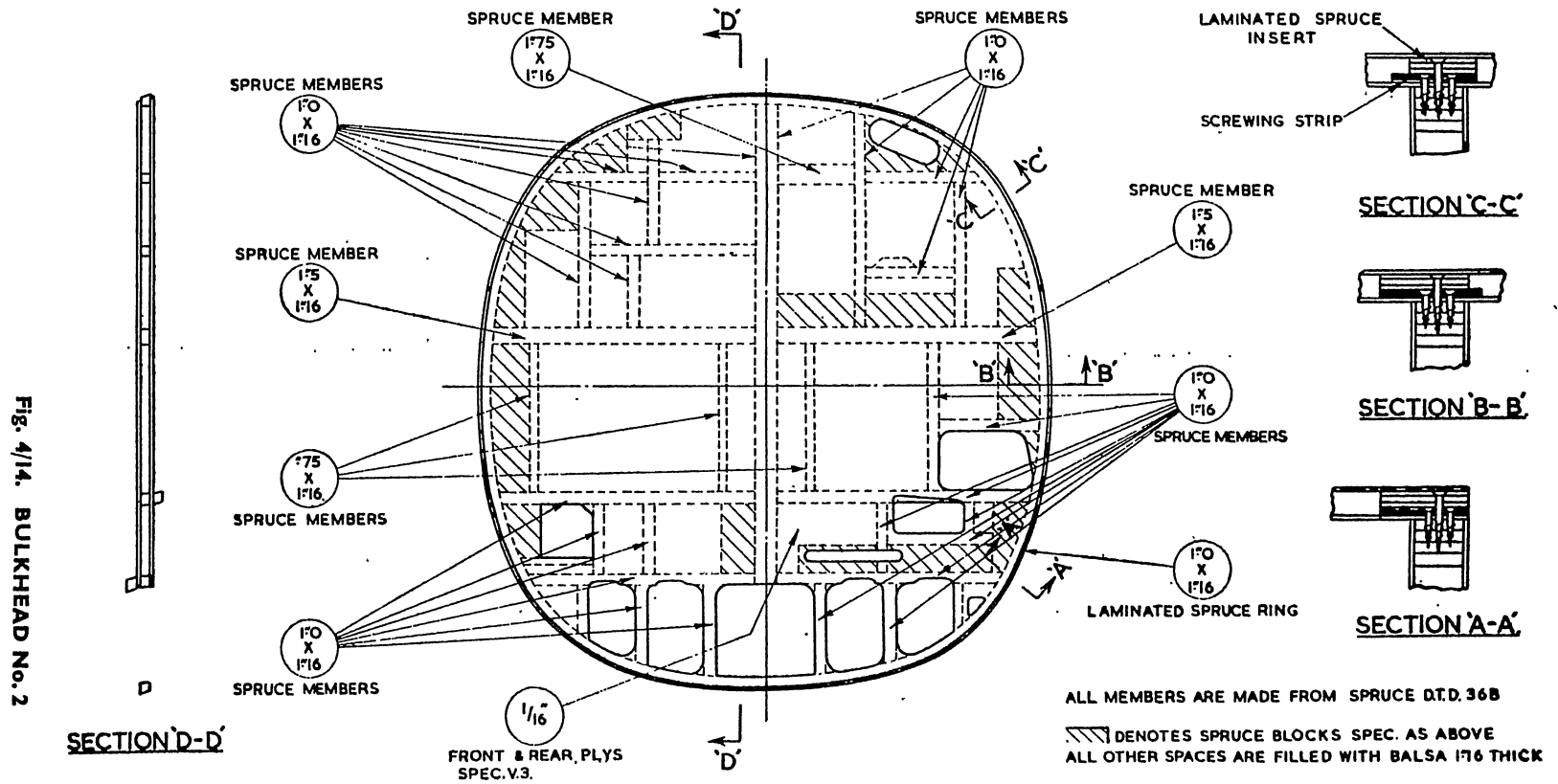


Definition of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Laminated Rings	Bruises 0.05 in. deep, 0.5 in. across and 1.0 in. along the grain, 12.0 in. apart	Damage in excess of negligible	
Facing ply	Bruises one lamination deep, 0.5 in. across and 1.0 in. along the grain 10.0 in. apart	Damage in excess of negligible Insert new portion with 10/1 scarf	
Diaphragms 1 and 4	Dents 0.1 in. deep, 0.75 in. dia. 12.0 in. apart	Up to 3.0 in. dia. Replacement of Bottom Segment of bulkhead 4 Damage in excess of above	4/33 4/22

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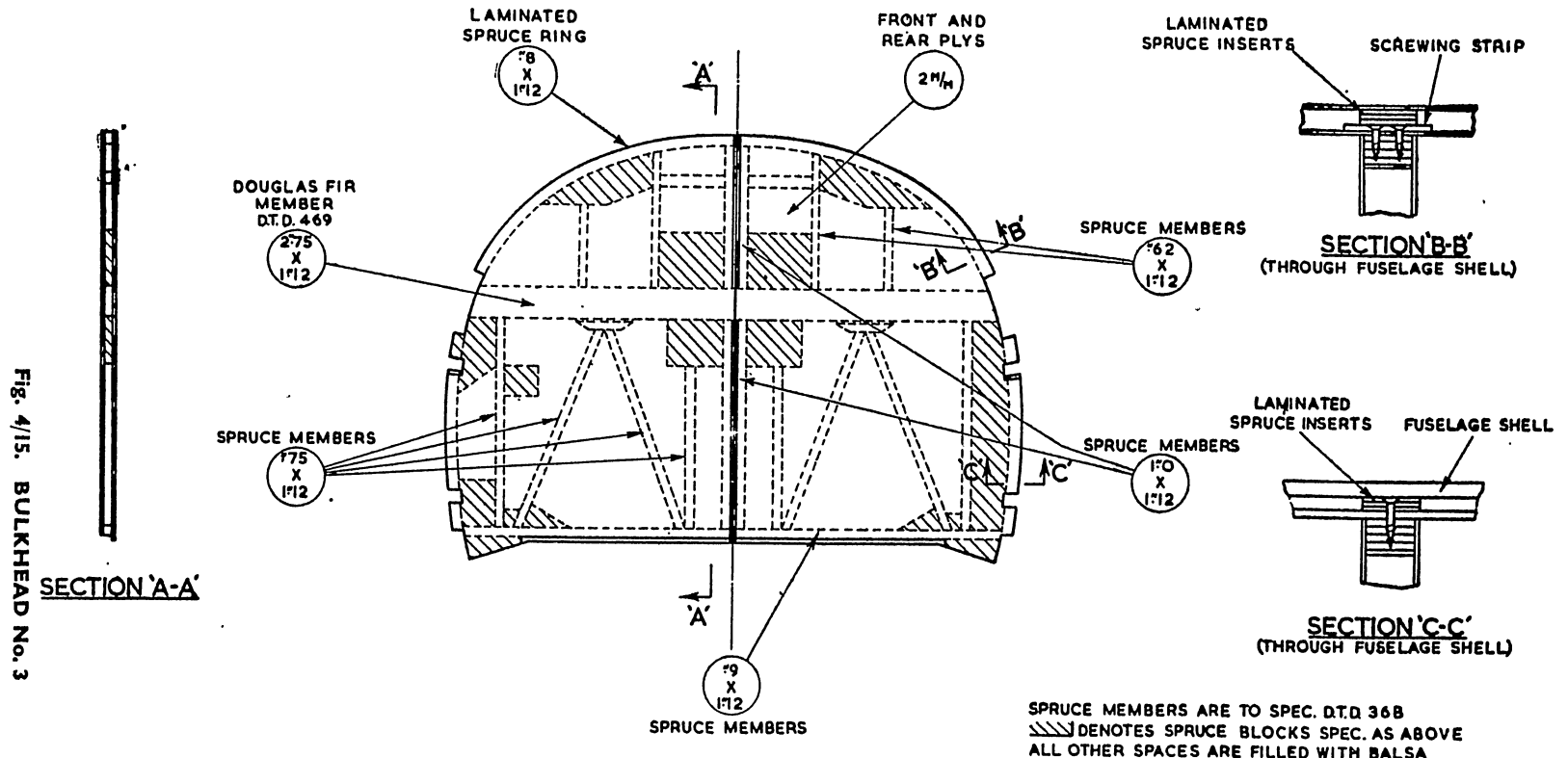


Fig. 4/15. BULKHEAD No. 3

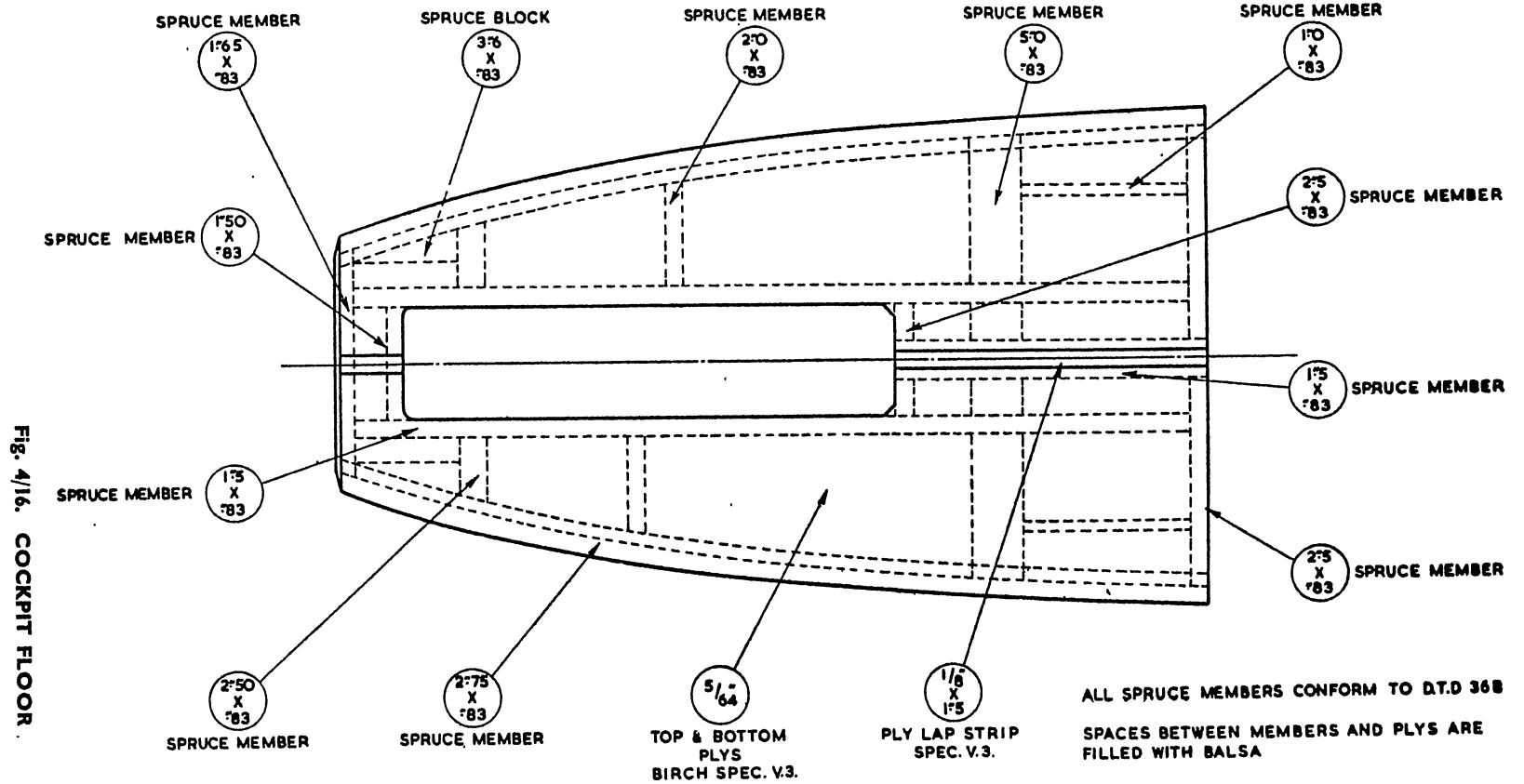
SPRUCE MEMBERS ARE TO SPEC. D.T.D 368
 // DENOTES SPRUCE BLOCKS SPEC. AS ABOVE
 ALL OTHER SPACES ARE FILLED WITH BALSA

Definitions of Negligible and Repairable Damage

Component	Definition of damage	
	Negligible	Repairable
Skin	Bruises one lamination deep, 0.75 in. across and 2.0 in. along the grain	Damage in excess of above necessitates a major repair and reference should be made to Repair Leaflets Issued with Part 4
Spruce Members	Bruises 0.1 in. deep, 0.5 in. across and 1.0 in. along the grain, 12.0 in. apart	

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Definitions of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Skin	Bruises one lamination deep 0.75 in. across and 2.0 in. along the grain	Groups of holes 0.6 in. x 1.8 in. not closer than 18.0 in. apart Up to 3.0 in. dia., 18.0 in. apart Damage in excess of above	4/29(A) 4/30 4/31
Spruce Members	Bruises 0.1 in. deep, 0.5 in. across and 1.0 in. along the grain, 12.0 in. apart	Damage in excess of negligible	4/31

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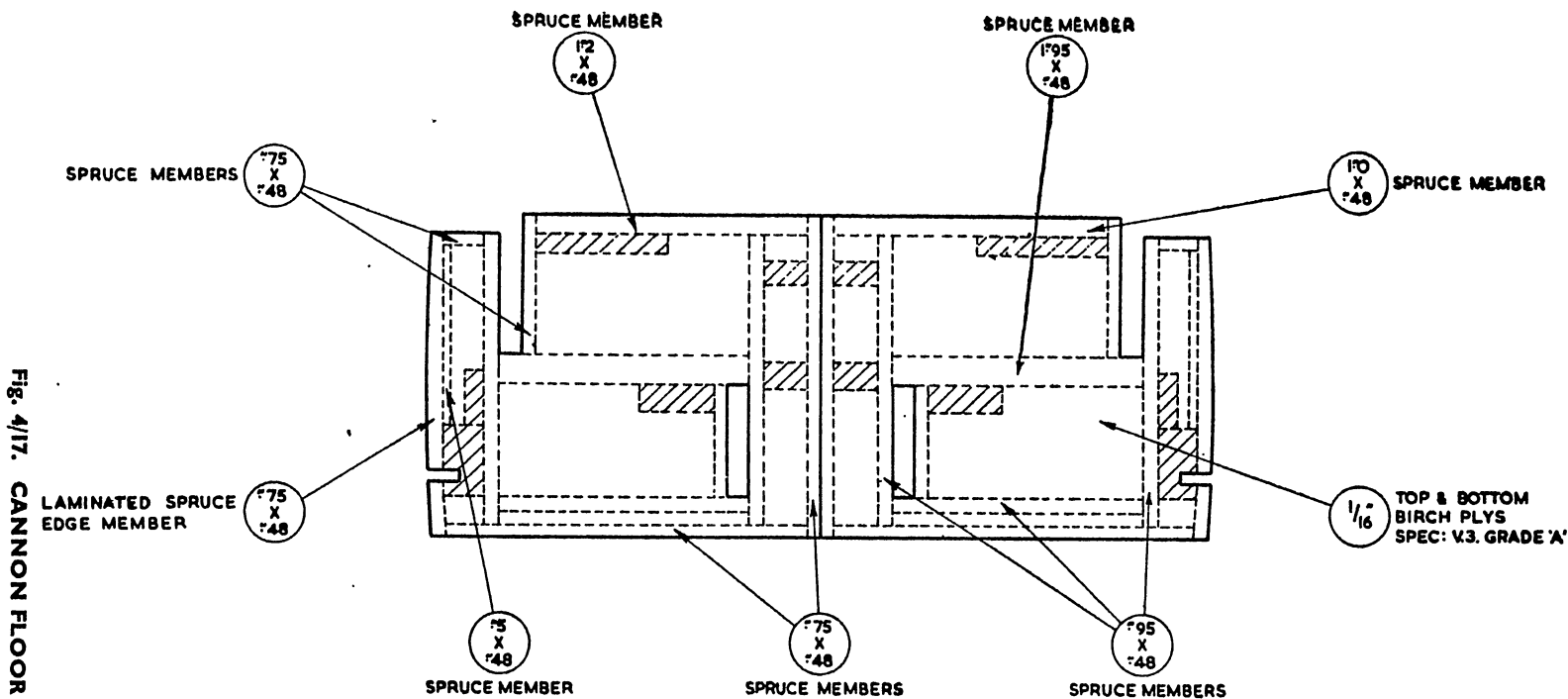


Fig. 4/17. CANNON FLOOR

ALL SPRUCE IS TO SPEC. D.T.D. 36 B
 Hatched area DENOTES SPRUCE BLOCKS SPEC. AS ABOVE,
 SPACES BETWEEN SPRUCE MEMBERS, BLOCKS AND
 PLYS ARE FILLED WITH Balsa 3/4 THICK

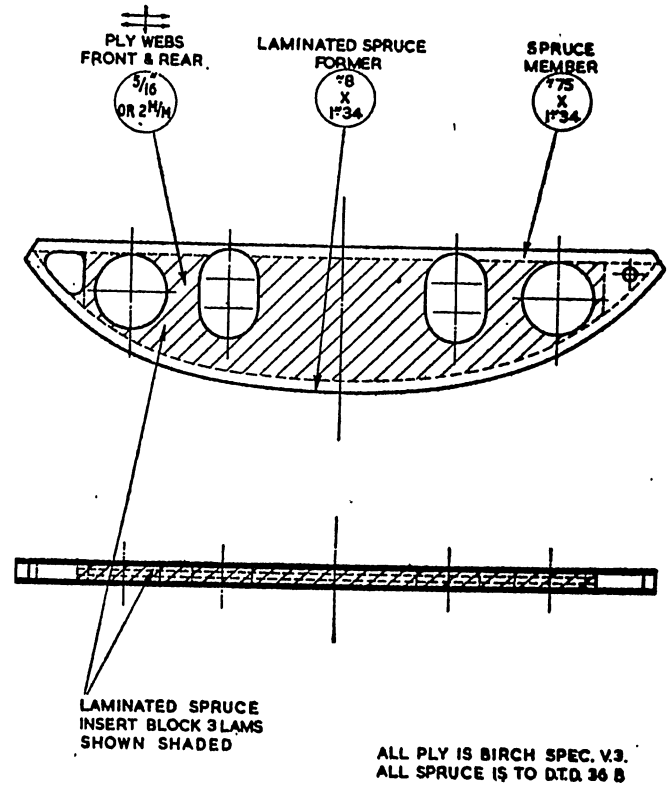
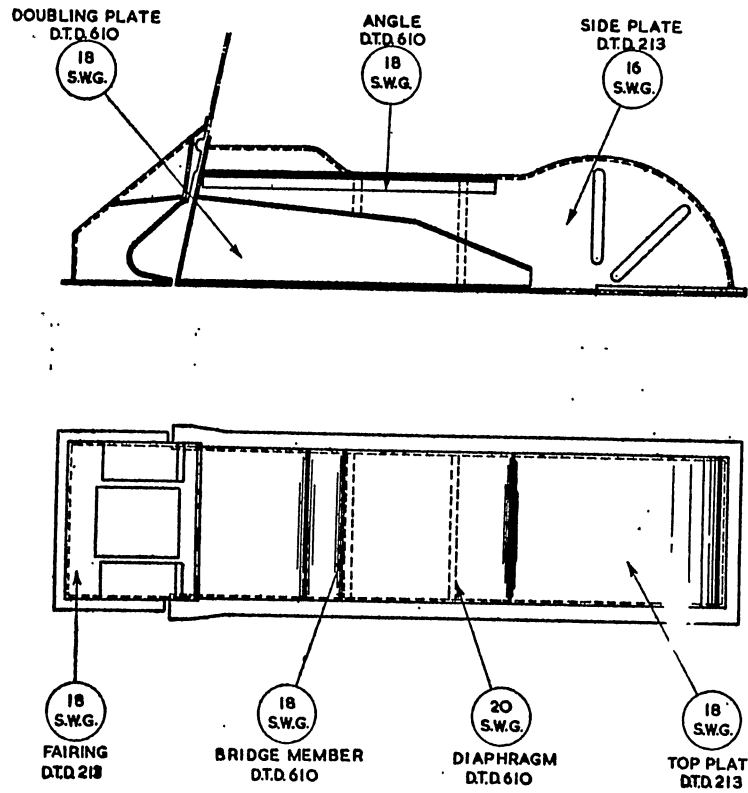
Definitions of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Skin	Bruises one lamination deep, 0-75 in. across and 2-0 in. along the grain	Groups of holes 0-6 in. x 1-8 in. not closer than 18-0 in. apart	4/29(B)
Spruce Members	Bruises 0-1 in. deep, 0-5 in. across and 1-0 in. along the grain, 12-0 in. apart	Up to 3-0 in. dia., 18-0 in. apart Damage in excess of above. Damage in excess of negligible	4/30 4/31 4/31

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Fig. 4/18. NOSEWHEEL HOUSING AND CANNON BEAM



Definitions of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Skin	Dents 0.1 in. deep, 1.0 in. dia.	0.5 in. dia. to 5.0 in. dia., 18.0 in. apart	4/33
Cannon Beam		Damage in excess of negligible, refer to Part 4	

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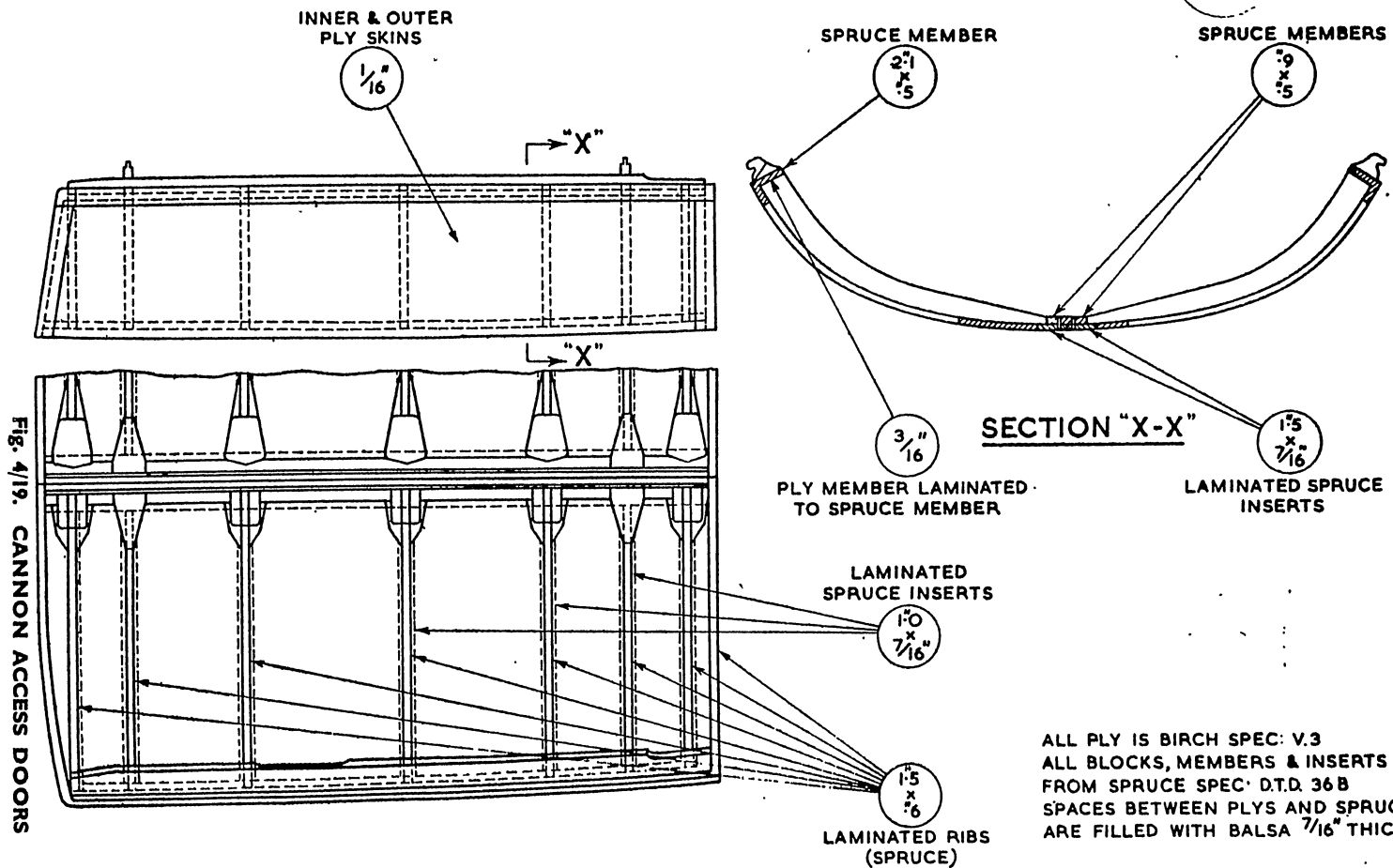
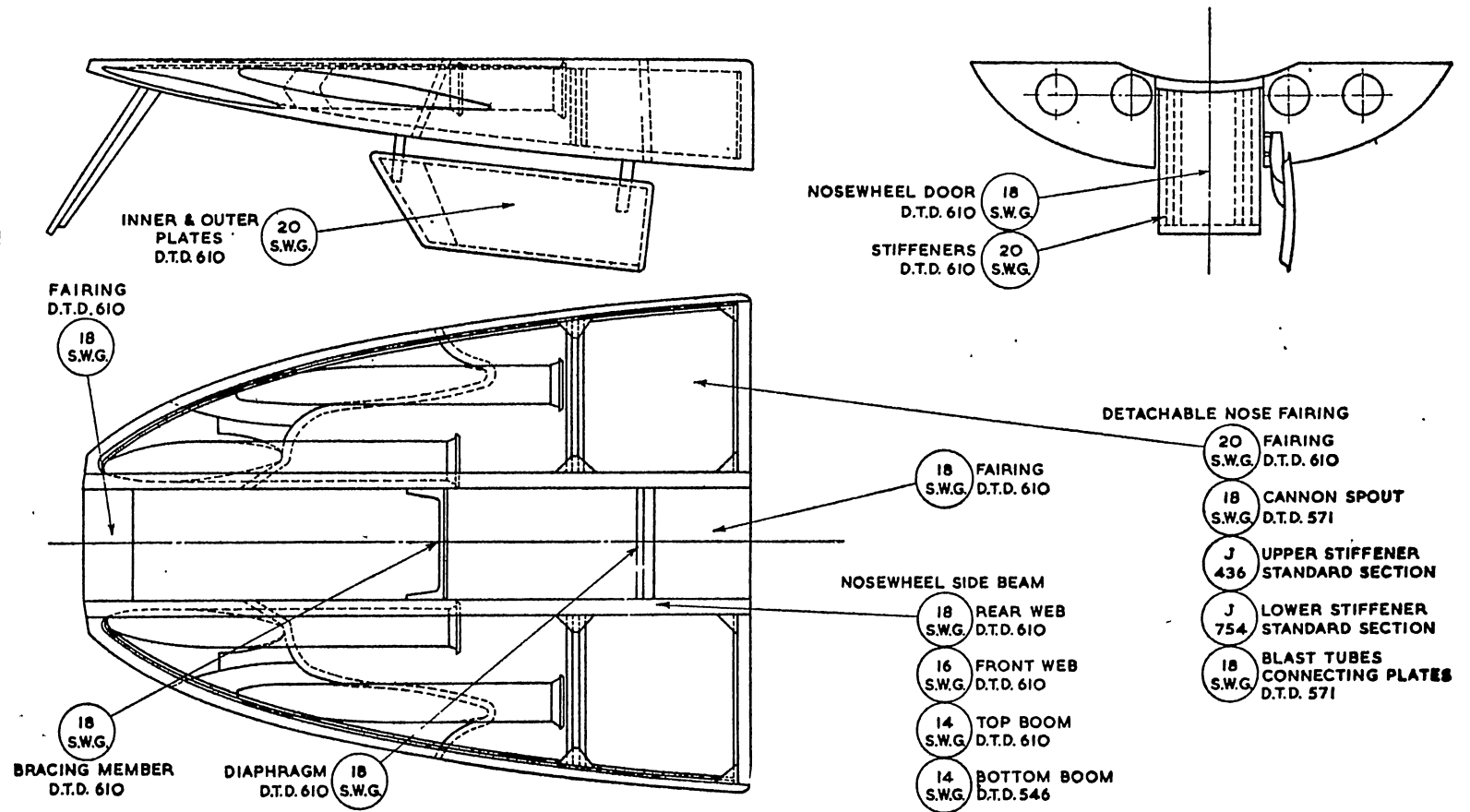


Fig. 4/19. CANNON ACCESS DOORS

Definition of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Skin	Bruises one lamination deep, 0.75 in. across and 1.0 in. along the grain, 12.0 in. apart	Isolated holes 0.6 in. x 1.8 in., not more than 3 per door	4/29(A)
		Groups of holes 0.6 in. x 1.8 in. not closer than 12.0 in. apart	4/29(B)
Inter-skin Members	Bruises 0.1 in. deep, 0.5 in. across and 1.0 in. along the grain, 12.0 in. apart	Up to 3.0 in. dia. 12.0 in. apart	4/30
		Damage in excess of above	4/31
		Damage in excess of negligible	4/31

Fig. 4/20. NOSEWHEEL AND CANNON FAIRINGS

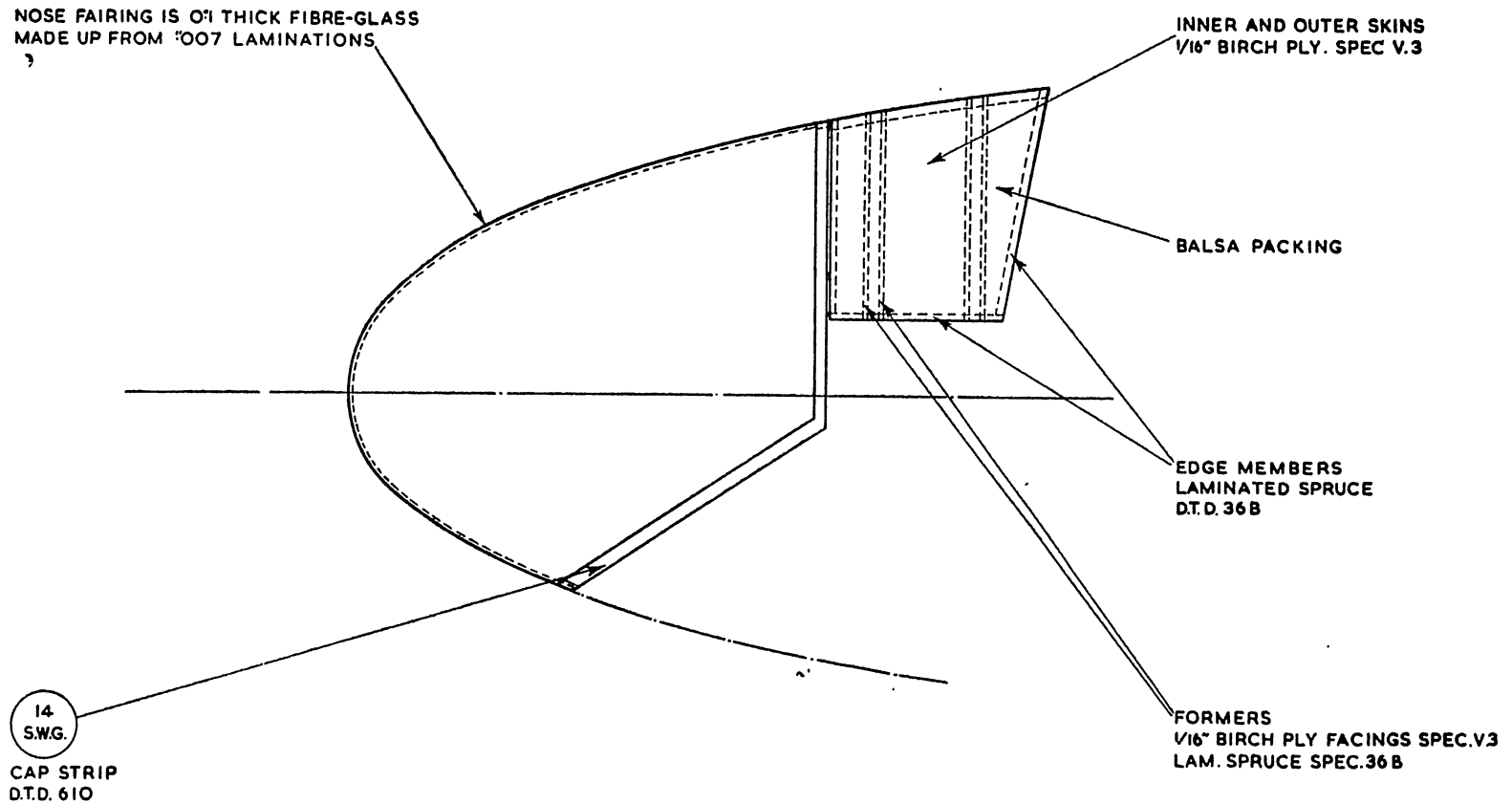


Definition of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Fairings	Dents 0.1 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. to 5.0 in. dia., 18.0 in. apart	4/33
Stiffeners and Side Beams	Dents 0.1 in. deep, 0.75 in. long, 8.0 in. apart	Flange and web, 1.0 in. long x 0.5 in. deep in web, 18.0 in. apart	4/28

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Fig. 4/21. FUSELAGE AND ACCESS DOORS



Definition of Negligible and Repairable Damage

Component	Definition of damage		Repair Fig. No.
	Negligible	Repairable	
Nose Access Door Skin	Bruises one lamination deep 0.75 in. across and 2.0 in. along the grain, 12.0 in. apart	Isolated hole 0.6 in. x 1.8 in. Not more than 1 per door	4/29(A)
Inter-skin Members	Bruises 0.1 in. deep, 0.5 in. across and 1.0 in. along the grain 12.0 in. apart	Damage in excess of negligible	4/31

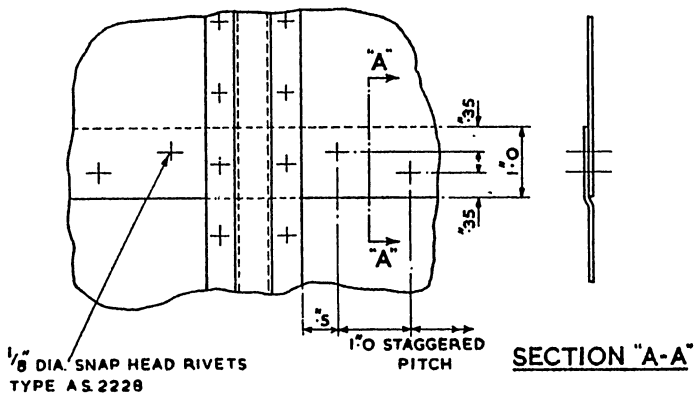
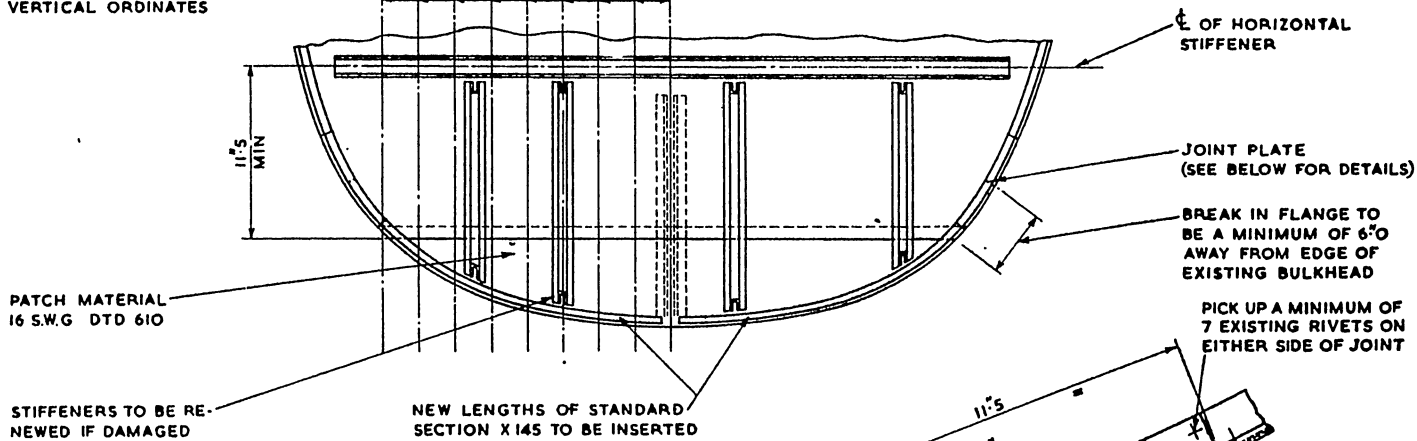
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SEE TABLE BELOW FOR VERTICAL ORDINATES

X	W ₁	W	V ₁	V	U ₁	U	C ₁	¢
20°0	17°5	15°0	12°5	10°0	7°5	5°0	2°5	

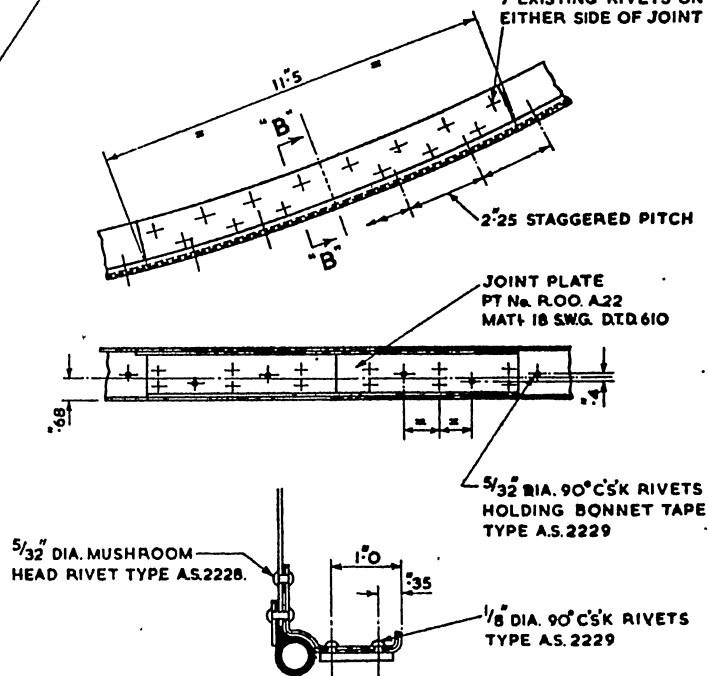
Fig. 4/22. FIREWALL REPAIR (BULKHEAD 4)



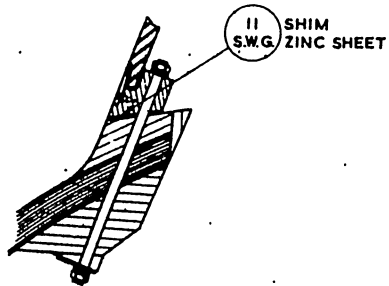
RIVETING DETAILS

¢	C ₁	U	U ₁	V	V ₁	W	W ₁	X
18°51	18°43	18°21	17°84	17°28	16°49	15°35	13°76	11°65

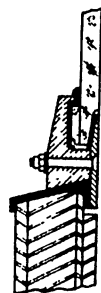
VERTICAL PROFILE ORDINATES MEASURED FROM ¢ HORIZONTAL STIFFENER



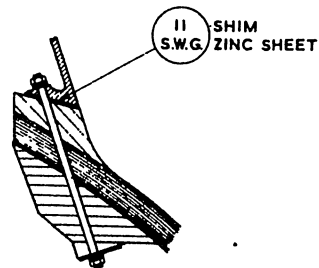
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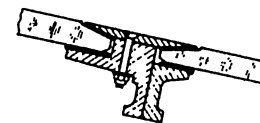
SECTION "A-A"
SHOWING ATTACHMENT OF
STARBOARD WINDSCREEN MEMBER
TO FUSELAGE



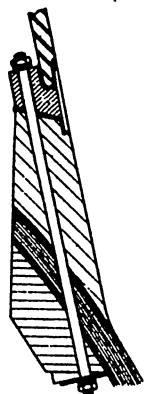
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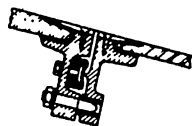
SECTION "C-C"
SHOWING ATTACHMENT OF
PORT WINDSCREEN MEMBER
TO FUSELAGE



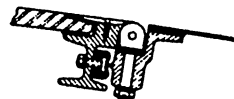
SECTION "D-D"



SECTION "E-E"
SHOWING ATTACHMENT OF
SIDE PANEL



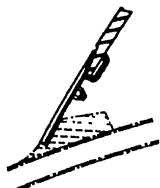
SECTION "F-F"



SECTION "G-G"



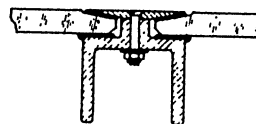
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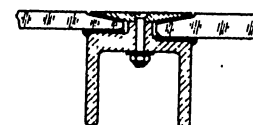
SECTION "J-J"



SECTION "K-K"



SECTION "L-L"



SECTION "M-M"

EDGES OF LAMINATED GLASS TO BE TREATED WITH THREE COATS OF SEAPLANE VARNISH.
ALL TRANSPARENT PANELS AND SCREENS TO BE BEDDED IN BOSTIK 1222 AND "A."
BEAD OF BOSTIK "B" TO BE FINALLY APPLIED TO ANGLE FORMED BY FRAME AND PANEL.

Fig. 4/24 Canopy sections

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This leaf issued with A.L. No/O, Dec., 1951

A.P. 4099a 4269, Vol. 2, Part 3, Chap. 4

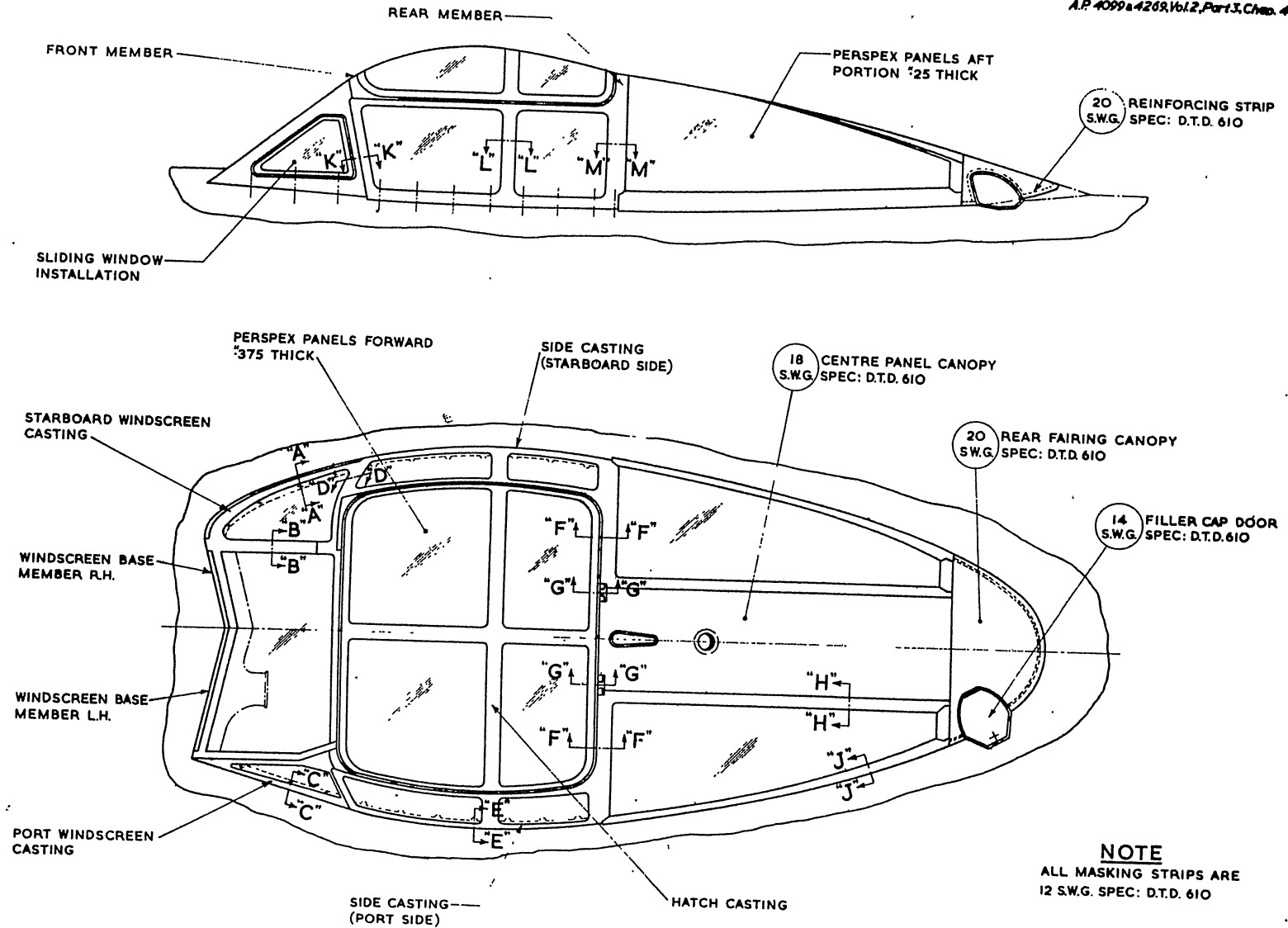
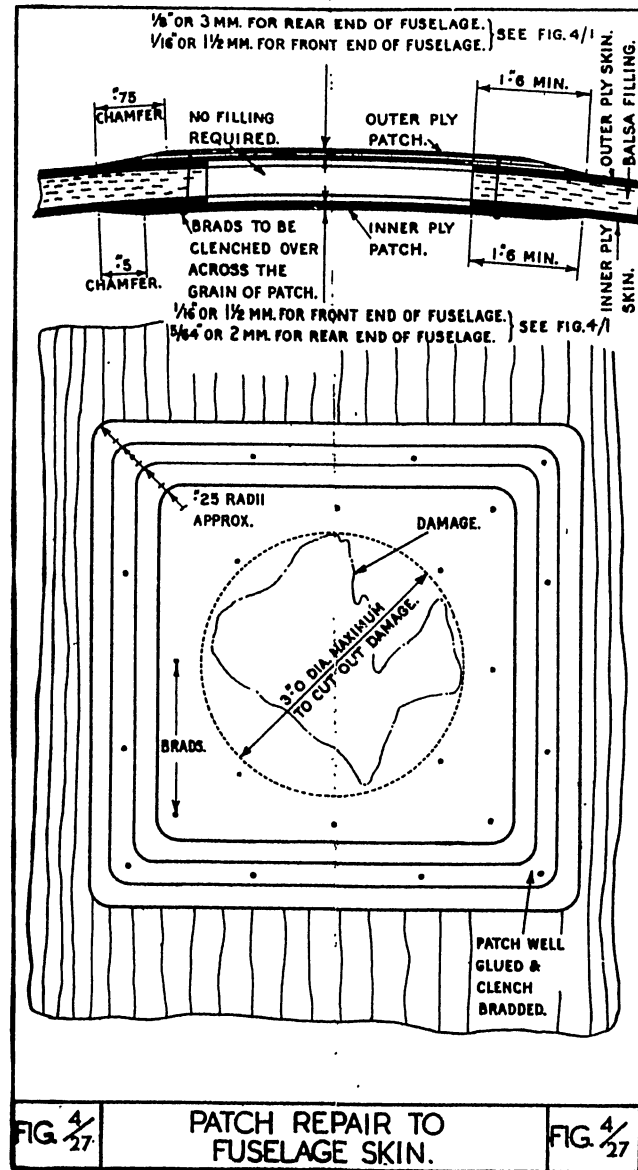
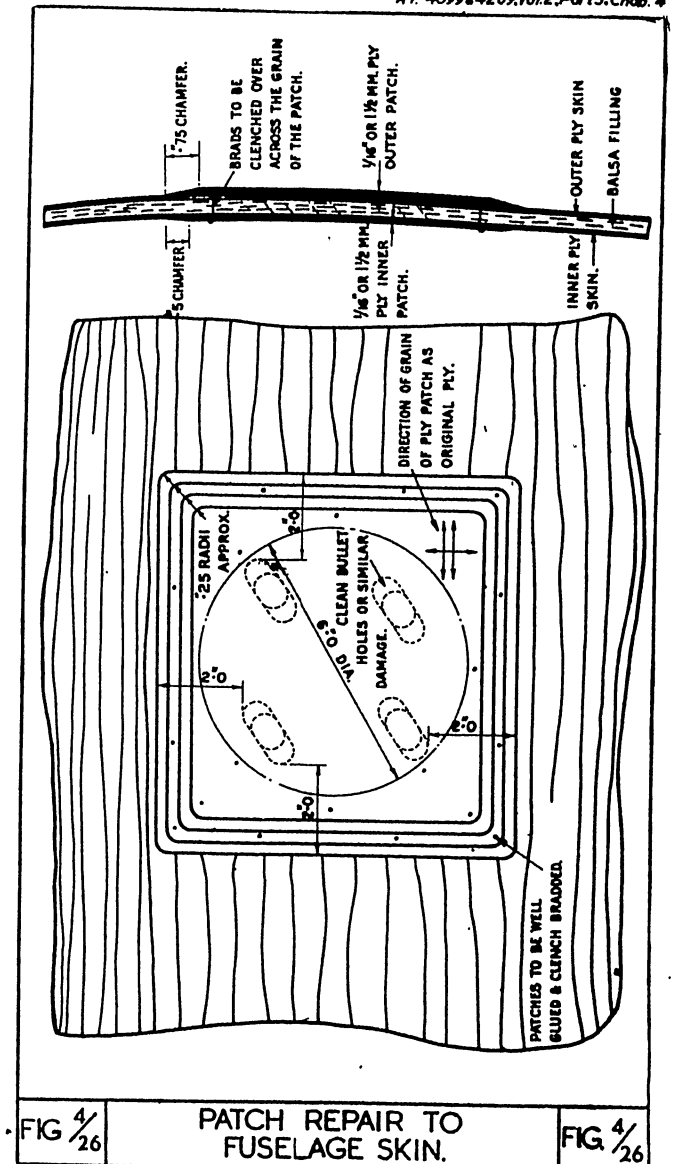
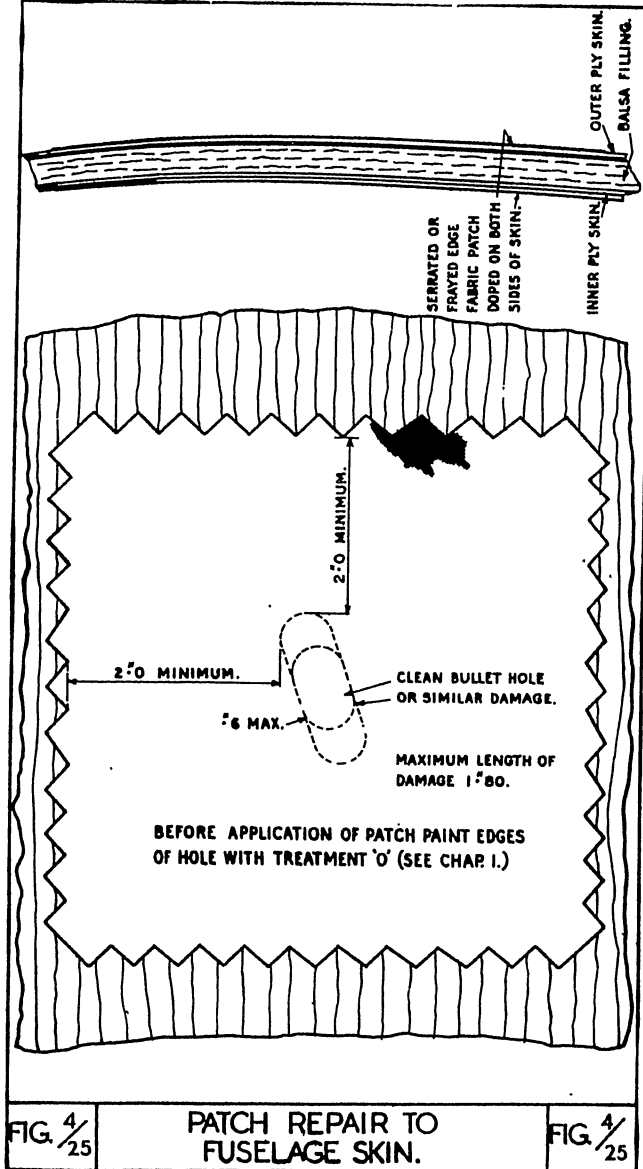


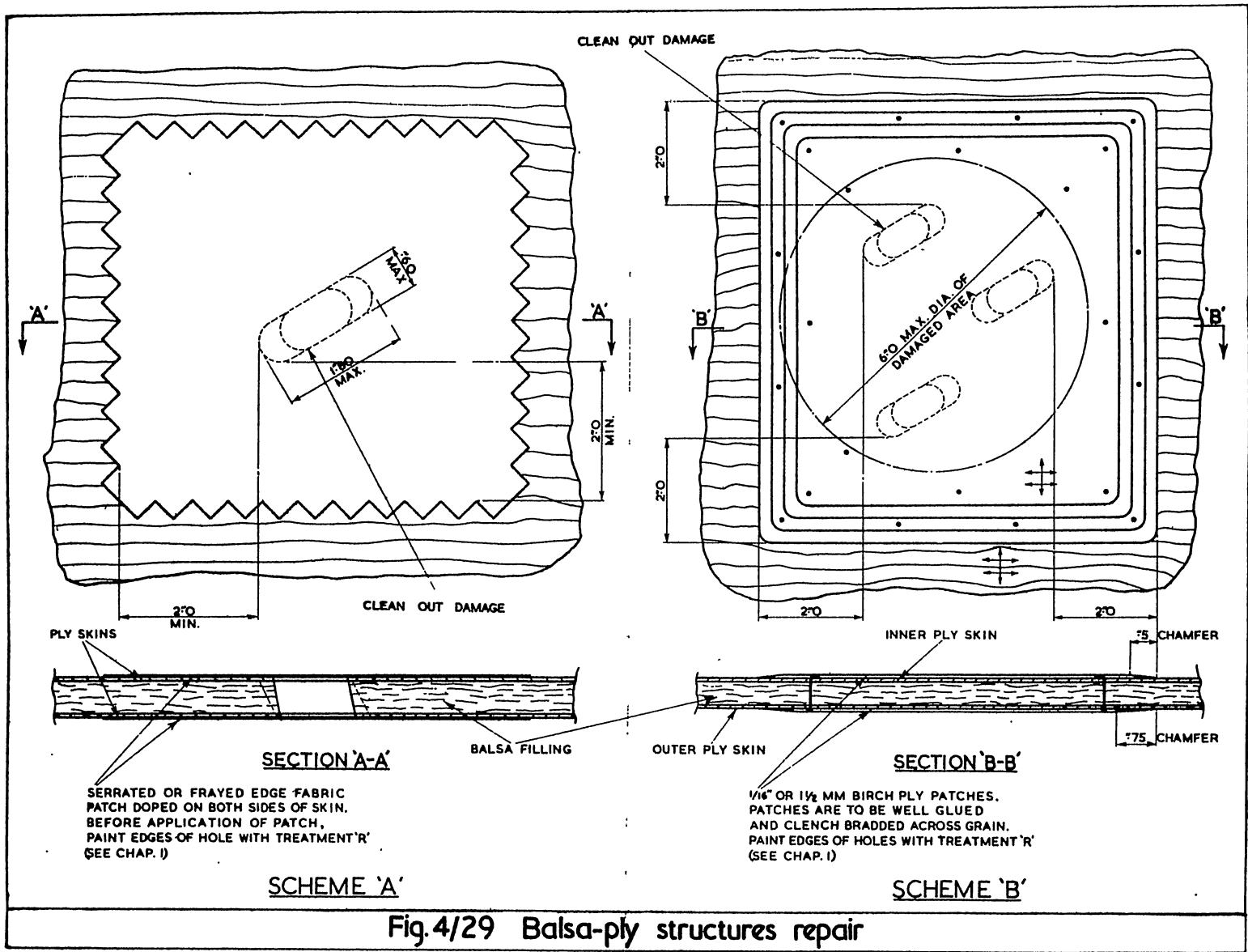
FIG. 4/23 CANOPY DIAGRAM

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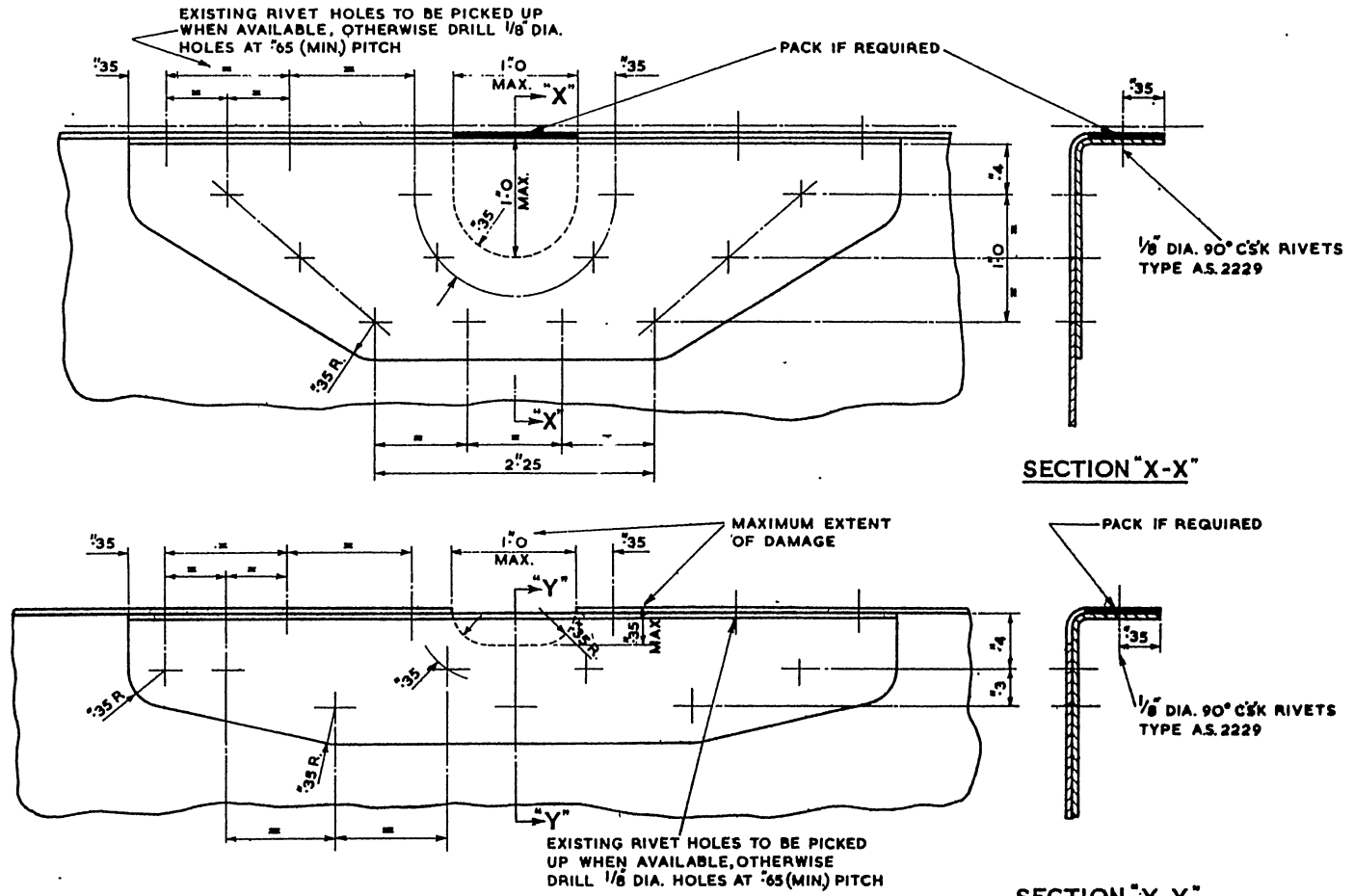


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NOTE

1. PATCHES ARE TO BE OF THE SAME GAUGE AND SPECIFICATION AS EXISTING PLATE
2. IF WEB MATERIAL IS 22 S.W.G. OR LESS RIVETS THROUGH PLATE ARE TO BE 1/8 DIA. SNAP HEADS TYPE A.S. 2228. IF 20 S.W.G. OR GREATER 3/32 DIA. RIVETS ARE TO BE USED

Fig.4/28 Flange

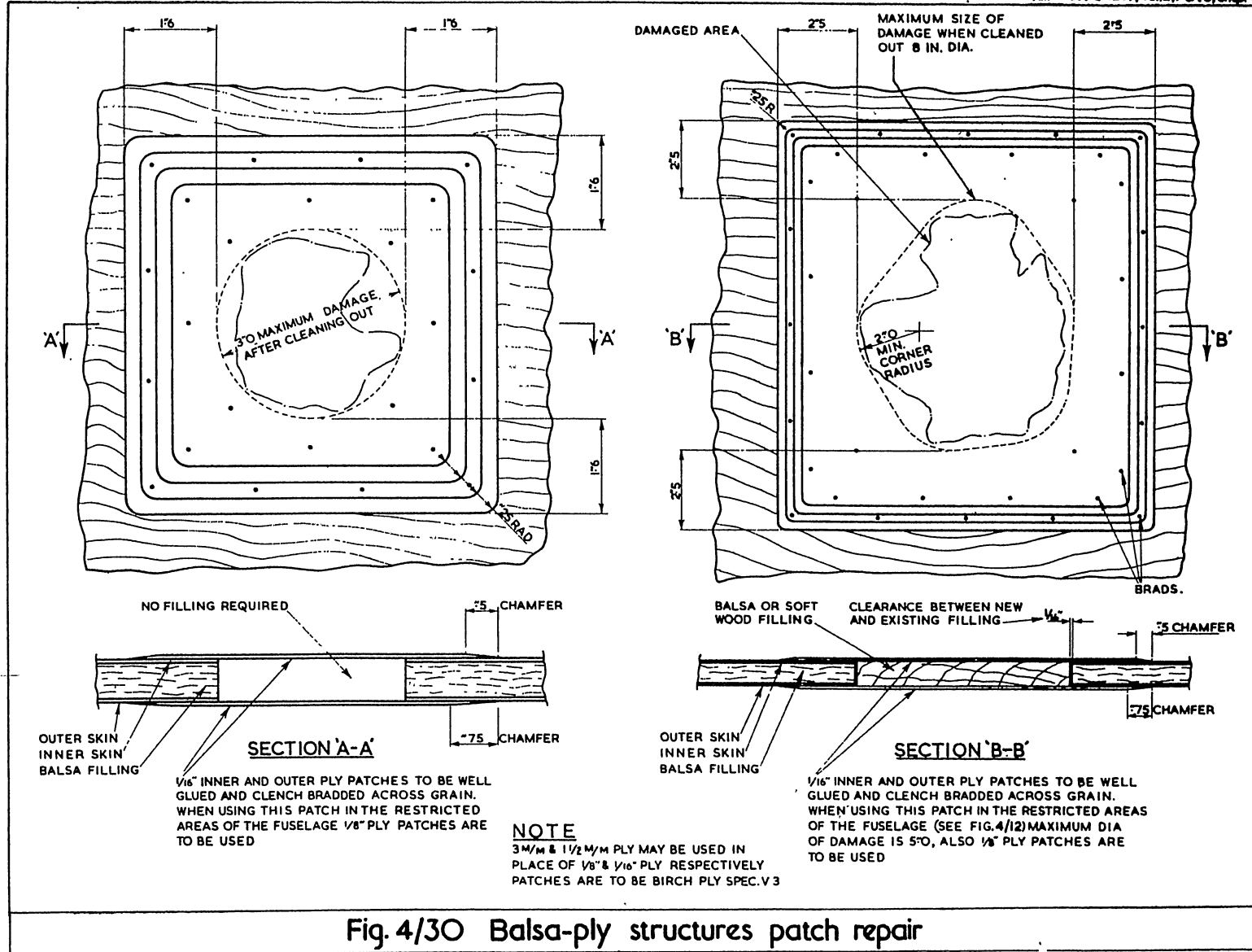
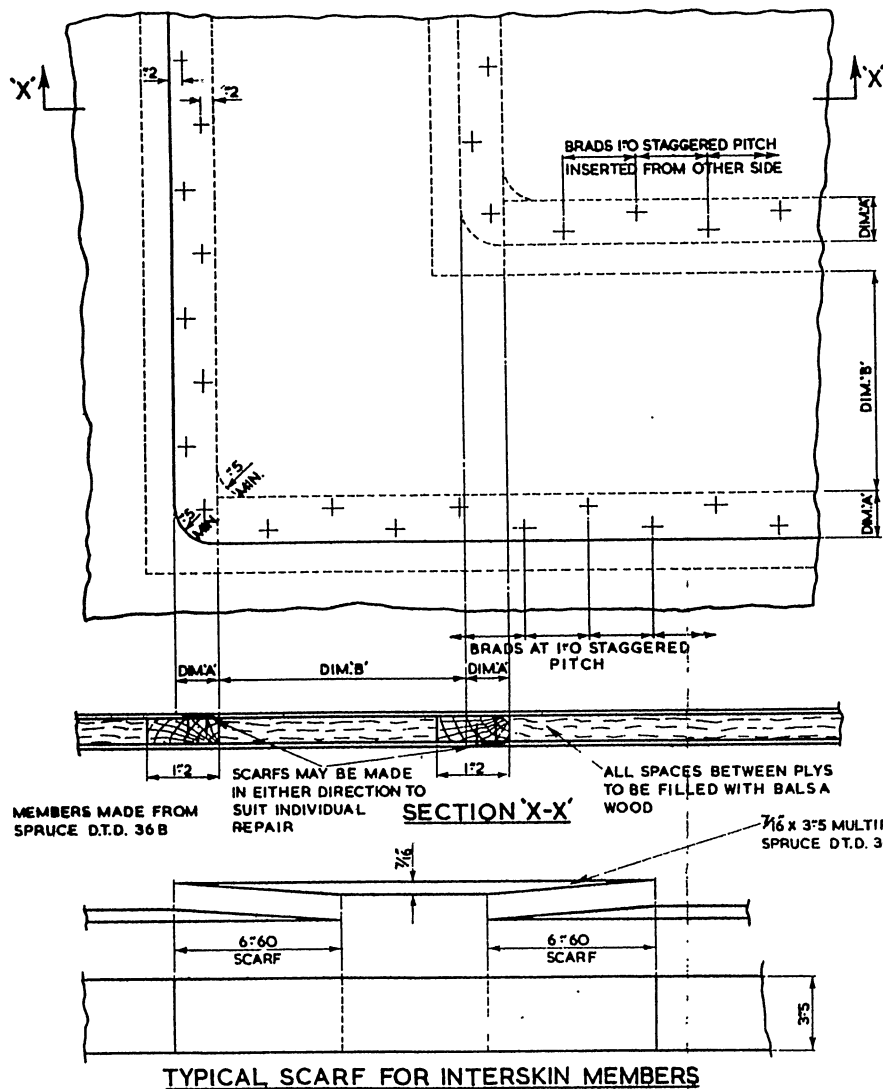


Fig. 4/30 Balsa-ply structures patch repair



PROCEDURE FOR EFFECTING REPAIR

- 1 INSPECTION MUST BE MADE TO ENSURE THAT THE DAMAGE DOES NOT OCCUR IN THE PORTION OF THE SHELL CROSS HATCHED IN FIG. 4/12
- 2 IT SHOULD THEN BE DECIDED WHICH SIDE OF THE STRUCTURE TO WORK FROM. NORMALLY THIS WILL BE THE MOST DAMAGED SIDE
- 3 CUT AWAY DAMAGED PORTION OF ONE SKIN AND INSPECT FOR DAMAGED INTER-SKIN MEMBERS, ANY DAMAGE TO THESE MUST BE REMOVED. THE OTHER SKIN MUST NOW BE CUT BACK TO CLEAR DAMAGE
- 4 INSERT SCARFING MEMBERS AND SCARF IN NEW PORTION OF ONE SKIN
- 5 SCARF IN NEW PORTIONS OF ANY DAMAGED INTERNAL MEMBERS
- 6 ALL SPACES BETWEEN MEMBERS ARE TO BE FILLED WITH BALS A
- 7 SCARF IN NEW PORTION OF SKIN

NOTE

- 1 EXTREME CARE MUST BE TAKEN TO ENSURE THAT NO FURTHER DAMAGE IS CAUSED TO SKINS OR INTERNAL MEMBERS WHEN CUTTING BACK DAMAGE
- 2 ALL DAMAGED INTER-SKIN MEMBERS MUST BE REPLACED OR A NEW PORTION INSERTED WITH A 15:1 SCARF
- 3 REPAIR TO BE WELL GLUED AND BRADDED
- 4 3°0 MIN STAGGER MUST BE MAINTAINED BETWEEN EXISTING SCARFS AND NEW SCARF JOINTS
- 5 DIM. 'B' MUST BE INCREASED TO 6°0 WHEN THIS REPAIR IS USED IN AREAS SHOWN HATCHED ON FIG. 2/2

PLY THICKNESS	DIM. 'A'	DIM. 'B'
1/16"	7°60	3°0 MIN.
5/16"	7°80	3°0 MIN. *
1/8"	1°20	3°0 MIN. *

* SEE NOTE 5 ABOVE

Fig. 4/31 Balsa-ply structures insertion repair

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FUSELAGE FITTINGS

Limits of wear for items shown on fig. No. 4/32

Item No.	Part No.	Description of part	Nominal diameter	Female high or male low limit	Maximum wear limit	Plug gauge (See fig. No. 1/6)
1	G.00242	Eye-bolt	0.25	+0.0001	+0.0025	V B
2	G.00251	Operating lever	0.25	+0.0001	+0.0025	V B
3	G.00323 Mk. 4	Special pin	0.25	-0.0011	-0.002	Micrometer
4	G.00240	Fork end	0.1875	Drill	+0.0035	V A
5	SP4.B6	Standard pin	0.1875	-0.005	-0.007	Micrometer
6	G.00241	Fork end	0.1875	Drill	+0.0035	V A
7	A.00633	Pickup fitting	0.1875	+0.0003	+0.0035	V A
8	G.00245	Link guide	0.1875	+0.0003	+0.0035	V A
9	A.G.S.784/3	Standard pin	0.1875	-0.005	-0.007	Micrometer
10	G.00244	Link guide end (bush G.00325, Mk. 3)	0.25	+0.0001	+0.0025	V B
11	G.00321	Connecting plates	0.25	+0.0003	+0.0025	V B
12	A1/11E	Standard bolt	0.25	-0.0035	-0.0045	Micrometer
13	G.00323 Mk. 2	Special pin	0.25	-0.0011	-0.002	Micrometer
14	G.00247	Radius rod end	0.25	+0.0001	+0.0025	V B
15	G.00251	Operating lever (bush G.00325 Mk. 2)	0.25	+0.0001	+0.0025	V B
16	A1/11E	Standard bolt	0.25	-0.0035	-0.0045	Micrometer
17	G.00321	Connecting plates	0.25	+0.0003	+0.0025	V B
18	G.00251	Operating lever (Bush G.00325 Mk. 3)	0.25	+0.0001	+0.0025	V B
19	G.00128	Radius rod eye end	0.25	+0.0001	+0.0025	V B
20	G.00254	Rear door front hinge	0.25	+0.0001	+0.0025	V B
21	G.00323 Mk. 6	Special pin	0.25	-0.0011	-0.002	Micrometer
22	A.001363	Front hinge bracket	0.3125	+0.0004	+0.0035	W C
23	A1/14 G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
24	A1/15 G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
25	K.0052	Special pin	0.5	—	-0.001	Micrometer
26	K.0047	Control column (special bushes K.0053)	0.5	+0.001	+0.004	Y C
27	SP4Y H21	Standard pin	0.375	-0.005	-0.007	Micrometer
28	B.0037	Pickup bracket	0.375	+0.0004	+0.0035	Y A
29	B.0038	Seat link, rear	0.375	+0.0005	+0.0035	Y A
30	B.0038	Seat link, front	0.375	+0.0005	+0.0035	Y A
31	AS.2062	Seat frame	0.375	+0.0004	+0.0035	Y A
32	SP4Y H18	Standard pin	0.375	-0.005	-0.007	Micrometer
33	AS.2091	Main seat bracket (bush AS.2098)	0.5	+0.0025	+0.004	Y C
34	AS.2085	Spigot	0.5	-0.000	-0.002	Micrometer
35	AS.2063	Seat levers	0.875	+0.0005	+0.0035	X E
36	AS.2081	Bush (male)	0.875	-0.0027	-0.0045	Micrometer
37	AS.2062	Seat frame	0.875	+0.0005	+0.0035	X E
38	D.001254	Special bolt	0.625	-0.0014	-0.0025	Micrometer
39	A.001431-2	Joint, "C" fitting	0.625	+0.0005	+0.002	V D
40	D.00477	Special bolt	1.0	-0.002	-0.003	Micrometer
41	D.004241-2	Joint, "A" fitting	1.0	+0.0006	+0.002	Z B
42	D.004239-40	Joint, "B" fitting	1.0	+0.0006	+0.002	Z B
43	D.00478	Special bolt	1.0	-0.002	-0.003	Micrometer

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FUSELAGE FITTINGS—cont.

Limits of wear for items shown on fig. No. 4/32—cont.

Item No.	Part No.	Description of part	Nominal diameter	Female high or male low limit	Maximum wear limit	Plug gauge (See fig. No. 176)
44	A.00801	Special bolt	0-375	-0-0035	-0-0045	Micrometer
45	A.00397-8	Bracing tube (rear outer)	0-390625		+0-0035	X B
46	A.00457-8	Spar boom lug	0-390625	$\frac{23}{64}$ in. drill	+0-0035	X B
47	A15Y/8J	Standard bolt	0-375	$\frac{23}{64}$ in. drill	-0-0035	Micrometer
48	A.00397-8	Bracing tube (rear inner)	0-390625		+0-0035	X B
49	A.00397-8	Bracing tube (front)	0-453125	$\frac{23}{64}$ in. drill	+0-0035	X C
50	D.00469-70	Pickup fitting	0-453125	$\frac{23}{64}$ in. drill	+0-0035	X C
51	A15Y/10L	Standard bolt	0-4375	$\frac{23}{64}$ in. drill	-0-0035	Micrometer
52	K.0086	Lug fitting	0-25	+0-0003	+0-0025	V B
53	A1/15E	Standard bolt	0-25	-0-0035	-0-0045	Micrometer
54	K.0084	Stay tube, fork	0-25	+0-0003	+0-0025	V B
55	K.0085	Stay tube, front	0-25	+0-0003	+0-0025	V B
56	K.00285	Special bolt	0-3125	+0-001	-0-001	Micrometer
57	K.00284	Special bolt	0-3125	+0-001	-0-001	Micrometer
58	K.00198	Special bolt	0-3125	-0-003	-0-0045	Micrometer
59	K.00169-70 Mk. II	Pedal casting	0-3125	+0-0004	+0-0035	W C
60	K.00187	Spigot, outer	0-3125	-0-002	-0-003	Micrometer
61	K.00186	Spigot, inner	0-3125	-0-002	-0-003	Micrometer
62	A1/7G	Standard bolt	0-3125	-0-0035	-0-0045	Micrometer
63	G.00381	Plug end	0-375	+0-0004	+0-0035	Y A
64	A15Y/9J	Standard bolt	0-375	-0-0035	-0-0045	Micrometer
65	G.00292 Mk. 3	Special bolt	0-3125	-0-0004	-0-002	Micrometer
66	G.00288	End fitting	0-3125	+0-0004	+0-0035	W C
67	G.00286-7	Pickup fitting	0-3125	+0-0004	+0-0035	W C
68	G.00293	Special bolt	0-25	-0-0003	-0-002	Micrometer
69	G.00301-2	Eye-bolt	0-25	+0-0004	+0-0025	V B
70	G.00279	Side strut, rear	0-25	+0-0003	+0-0025	V B
71	G.00286-7	Pickup fitting	0-3125	+0-0004	+0-0035	W C
72	G.00278	Lower strut rear, end plug	0-3125	+0-0001	+0-0035	W C
73	G.00292 Mk. 4	Special bolt	0-3125	-0-0004	-0-002	Micrometer
74	G.00279	Side strut front, end plug	0-3125	+0-0004	+0-0035	W C
75	G.00277	Lower strut front, end plug	0-3125	+0-0004	+0-0035	W C
76	G.00285	Front bracket	0-3125	+0-0004	+0-0035	W C
77	G.00292 Mk. 1	Special bolt	0-3125	-0-0004	-0-002	Micrometer
78	G.00292 Mk. 2	Special bolt	0-3125	-0-0004	-0-002	Micrometer
79	G.00295-6	Upper strut	0-3125	+0-0001	+0-0035	W C
80	G.00323 Mk. 3	Special pin	0-25	-0-0011	-0-002	Micrometer
81	G.00270	Eye-bolt	0-25	+0-0001	+0-0025	V B
82	G.00271	Pickup	0-25	+0-0001	+0-0025	V B
83	G.00323 Mk. 5	Special pin	0-25	-0-0011	-0-002	Micrometer
84	G.00269	Eye end	0-25	+0-0001	-0-0025	V B
85	G.00323 Mk. 1	Special pin	0-25	-0-0011	-0-002	Micrometer
86	G.00270	Link rod	0-25	+0-0001	+0-0025	V B
87	A.00757	Pickup	0-25	+0-0001	+0-0025	V B

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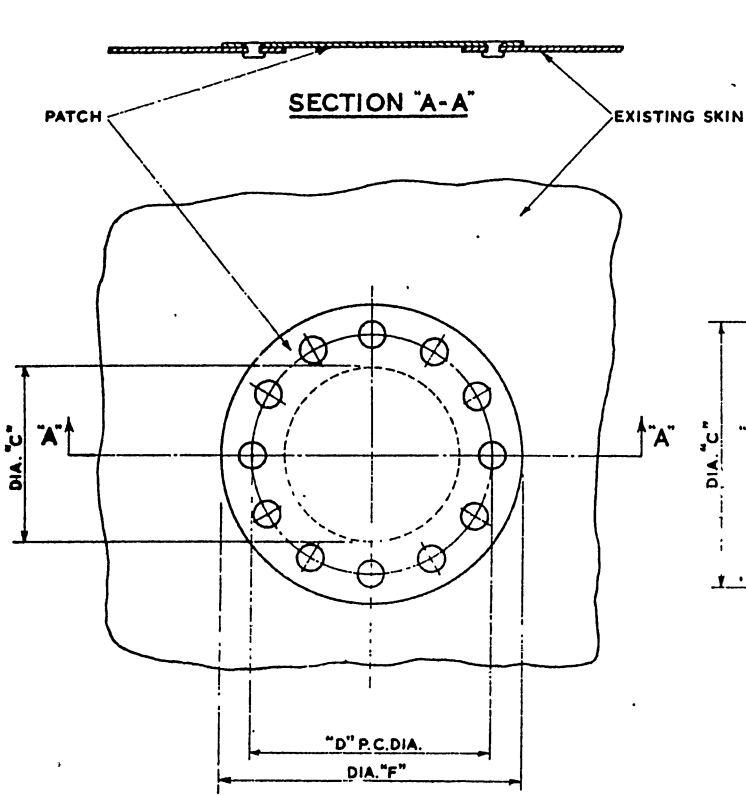


FIG. 1

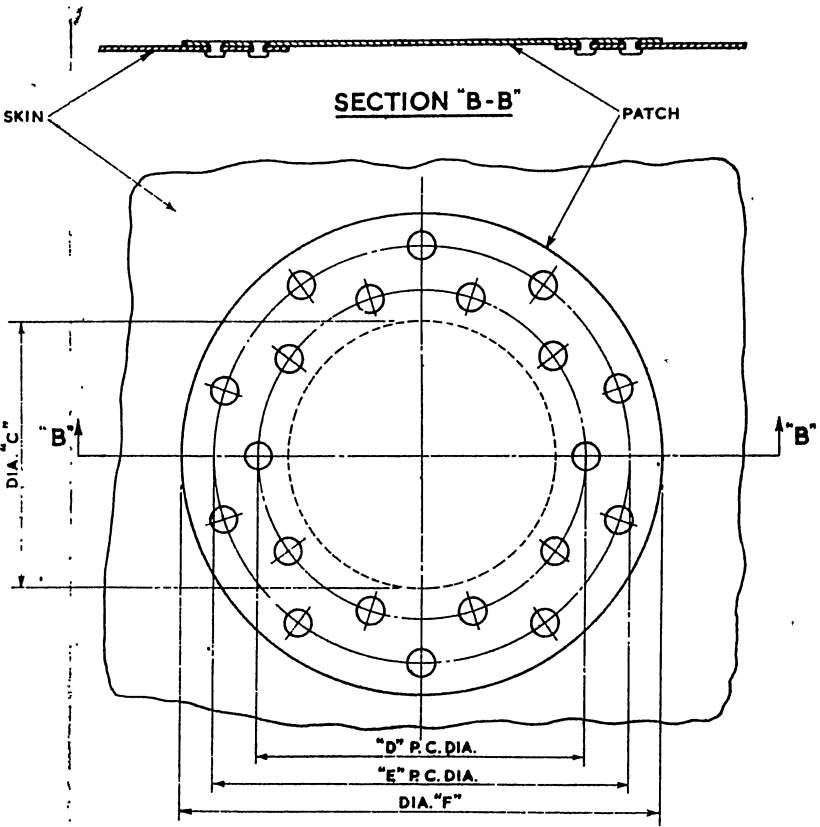


FIG. 2

NOTES

RIVETS ARE TO BE EQUALLY SPACED AROUND P.C. DIA. IN THE LARGER SIZES OF PATCH, RIVETS ARE TO BE STAGGERED AND EACH ROW MUST HAVE AN EQUAL NO OF RIVETS.

USE 5/32" DIA. 90° C'SK RIVETS, TYPE A5.2229 WHERE POSSIBLE, OTHERWISE 90° C'SK STEEL CHOBERT RIVETS PINNED.

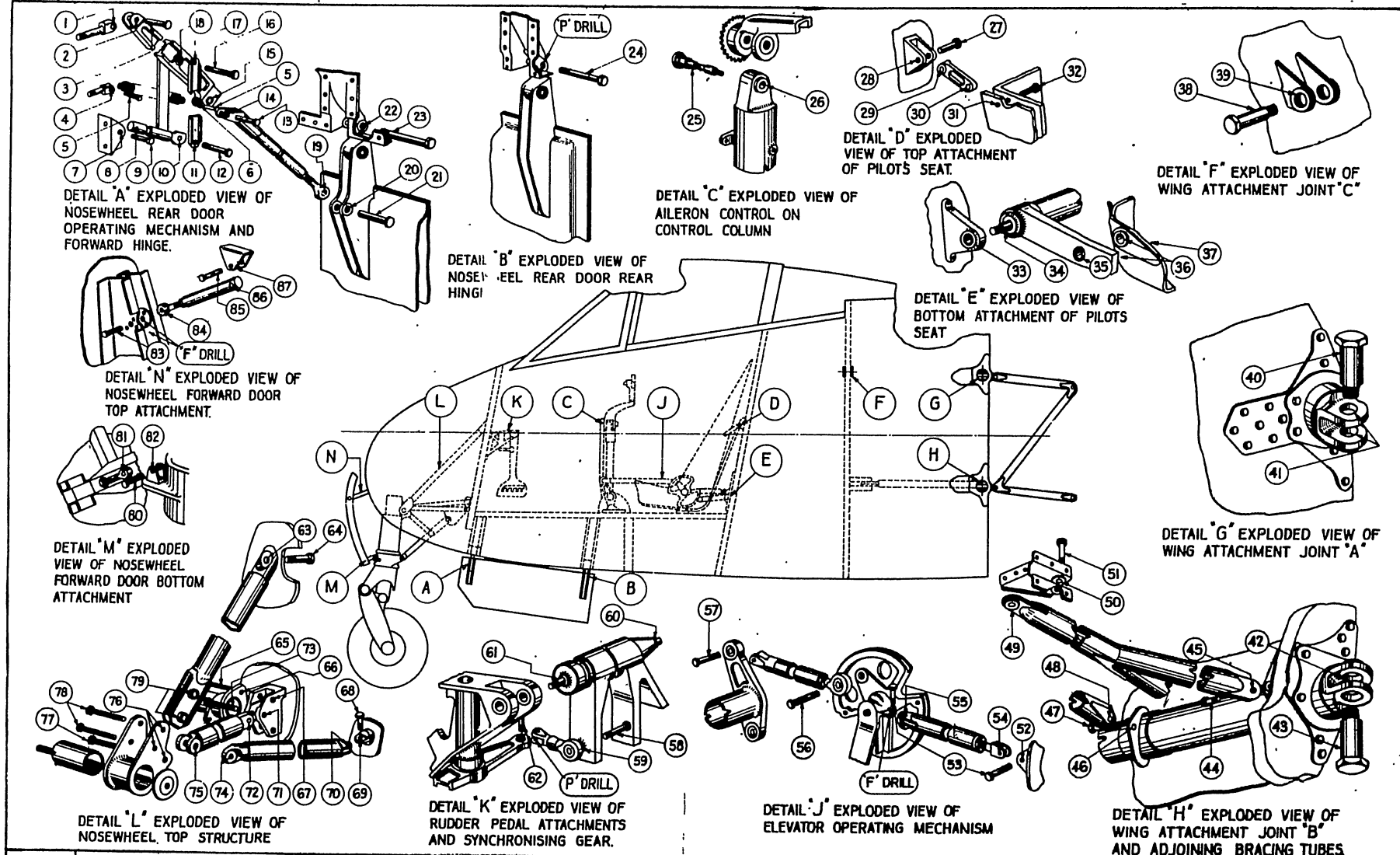
SKINS 20 S.W.G. AND UNDER MUST BE DIMPLED. PATCH TO BE SAME GAUGE AND SPECIFICATION AS ORIGINAL SKIN.

THE "DIA. OF DAMAGE 'C'" REFERS TO THE MAXIMUM DIA. OF THE HOLE AFTER CLEANING OUT

DIA. OF DAMAGE "C"	FIG. No	DIA. OF PATCH "F"	P.C. DIA. "D"	P.C. DIA. "E"	NO OF RIVETS IN PATCH
1.05	1	1.9	1.2	—	6
1.0	1	2.4	1.7	—	8
2.0	1	3.4	2.7	—	12
3.0	2	5.4	3.7	4.7	20
5.0	2	7.4	5.7	6.7	24

FIG.4/33 FUSELAGE FAIRING PATCH REPAIRS

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APPENDIX F

CHAPTER 4

FUSELAGE

FITTING INSTRUCTIONS FOR REPLACEMENT COMPONENTS

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(A.L.16, Dec. 55)

APPENDIX F

Chapter 4

FITTING INSTRUCTIONS FOR REPLACEMENT COMPONENTS

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Fitting of replacement windcreens	Fig. 4/F1
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FITTING OF REPLACEMENT CANOPY HATCHES

General

1 The instructions given in the following paragraphs supplement the assembly information, in the relevant Vol.4 and basically apply to new hatches. When reconditioned hatches or those transferred from other aircraft are to be fitted, the full instructions will not apply as the hatches will have been trimmed when fitted to previous aircraft. Hence only limited trimming will be possible. If several similar hatches are available, much time and trouble will be saved by initial selection of the most suitable hatch for the aircraft concerned.

~~Single seat Vampire and Sea Vampire~~

2. The procedure for fitting a new canopy sliding hood is as follows:-

- (1) Ensure that the bottom flanges of the canopy retaining brackets (14 S.W.G., Spec.S.3 or S.84), attached to bulkhead No.3, are not deformed. If they are and cannot be straightened, fit new brackets.
- (2) Check that the bottom flange of the rear fairing diaphragm is not out of alignment. True up if necessary.
- (3) With the hood closed and locked, check that neither the perspex nor the metal fairing is rubbing against the

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fuselage skin. If there is contact, gently file the part to give clearance. After filing, thoroughly polish the perspex to remove all file marks.

- (4) With the hood still closed, locked and unpressurised, ensure that an even gap of 0.030 in. minimum, 0.1 in. maximum exists between the flanges of the retaining brackets and the diaphragm, and the overlap of these two flanges is 0.3 in. minimum.

Note.- It is essential that these dimensions are maintained as the canopy, if jettisoned, depends upon this fit to clear the tail plane. The fit may also affect safety during normal flight.

- (5) If the gap between the flanges exceeds the dimensions in (4) fit a new retaining bracket.
- (6) If the overlap is less than 0.3 in., pack out the retaining bracket to obtain this dimension. The flange must neither jam in the radius of the diaphragm flange nor butt in any way. If necessary, file the edge of the retaining bracket flange to give clearance.

Note.- The use of plasticine may be of an advantage when carrying out the above checks.

- (7) Check that the gaps between the seals and the beads on the hood, in the unpressurised condition, are as follows:-

(a) Between hood and windscreen. - 0.12 in. along the top and 0.050 in. down the sides.

(b) Along the sides adjacent to the rails, - 0.15 in.

To obtain these dimensions it may be necessary to carefully dress the channel carrying the seal.

3. If the jettison mechanism is operated for any reason, it is essential that, when the jettison lever is pulled, a counter pressure is applied on the re-setting cable (Vol.1, Sect.5 of the relevant A.P.). Failure to do this may result in bowing of the connecting rods, bending or fracture of the adjusting screws with subsequent risk of inadvertant jettisoning of the canopy in flight. For this reason it is advisable to operate the mechanism as little as possible.

Vampire Mk.10 (post-Mod.Vam.3150)

4. Refer to A.P.4099H, Vol.1, Sect.3, Chap.1 for illustrations and phraseology. The canopy hatch should be fitted as follows:-

- (1) Ensure that the cartridge is removed from the hatch jettison gun.

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- (2) Remove the two eccentric locating pins which are situated at the rear of the hatch and remove the existing shims fitted under the hatch hinge eyebolts.
- (3) Attach the hatch to the canopy hinges by holding both hinge rockers flush with the canopy contour and pushing the hook arm upwards and rearwards to lock the hatch hinges. Now connect up the hatch beam claw mechanism and lock in position by means of the push rod.
- (4) Open the hatch gently and check that the rear masking strip on the hatch does not foul the upper surface of the adjacent canopy masking strip when the hatch is opened to a position approximately at right-angles to the canopy. If necessary, file the hatch masking strip to obtain a slight clearance.
(See Note.-)

Note.- When fitting of the hatch is completed, the gap between the hatch masking strip and the canopy over the whole hatch periphery must be between the limits of 0.20 in. max. and 0.050 in. min. but should be as close as possible to the minimum limit of 0.050 in. Since this gap is altered each time the hatch hinge bolt shimming is adjusted (5), only enough metal should be filed from the hatch masking strip to remove the immediate foul. No specific attempt should be made to produce the minimum gap of 0.050 in. until the hatch is finally bedded in the symmetrical position.

- (5) In conjunction with the trimming operations, it may be necessary to adjust the hatch position relative to the canopy by shimming under the hatch hinge bolts. Laminations of shim brass should be fitted under both bolts to obtain forward movement or under one bolt to obtain symmetry of the hatch about the aircraft centre-line. The maximum permissible thickness of shim under one or both bolts is 0.050 in. If the hatch is not symmetrical about the aircraft centre-line after the maximum shim adjustment has been used, change the hatch hinge bolts over and re-shim. This is likely to make a small difference because of the manufacturing tolerances on the bolts.
- (6) File round the hatch masking strip evenly on both sides, from the REAR TO THE FRONT, until the hatch seats squarely on the canopy.

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- (7) To ensure a good fit it may be necessary, in addition to filing the masking strip on the forward edge of the hatch, to file back the hatch casting to a maximum of 0.050 in. to prevent the hatch casting from fouling the front windscreen bedding strip in the nearly closed position. To do this, gently close the hatch from inside the cockpit, note any high spots on the hatch casting and file as necessary. At the same time ensure that the two front and centre rubbing pads, which are part of the hatch casting, do not foul the rubbing pads fitted to the side of the canopy rail. If a foul which causes the hatch to be thrown off centre does exist, remove the laminations of brass shim from under the canopy rail pads and re-shim to produce a clearance between the hatch rubbing pads and canopy rail pads of 0.002 in. max. in the hatch closed condition.
- (8) Check that the hatch locks correctly by closing the hatch and locking by means of the internal handle. This should only require application of a gentle load on the handle over the full range of travel from unlocked to fully locked position and no high spots should exist. If necessary, to relieve a friction load on the handle or to ensure that there is no clearance between the canopy latch pads and the latches, shim the front latch pads to a maximum of 0.062 in., using 0.003 in. thick laminations of brass shim to specification Attewell L.B.2. With the hatch closed and the latch pads correctly shimmed, it should be just possible to rotate the latch lock rollers.
- (9) Check that the hatch front casting is seating squarely on the sill of the front windscreen casting by placing a piece of paper in the region of each latch pad, closing the hatch and ensuring that the hatch firmly grips both pieces. If only one piece of paper is gripped, add shims to the latch pad (8) on the free side until satisfactory. If the shimming has been altered as a result of this check, re-check the adjustments of the latches and of hatch to canopy.
- (10) Close the hatch externally by means of the external handle, ensuring that the internal handle is in the fully locked position.

Note.- This does not include the positive engagement of the internal handle lock lever catch, which must be manually engaged to ensure completion of the hatch locking operation. If the external handle does not fully lock the hatch, adjust the connecting rods on the hatch centre beam until the hatch latches engage and disengage fully under the action of the handle.

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- (11) With the hatch in the locked position, check externally with a set of feeler gauges that there is an all-round clearance of 0.010 in. to 0.090 in. between the hatch pressure seal and the canopy rail bedding strip. If the gap exceeds 0.090 in., insert hard rubber packing under the rubber pressure seal to reduce the gap to the required clearance and secure the pressure seal and rubber packing in position with Bostik 'C' adhesive.
- (12) Check the hatch contours relative to the canopy. At the forward end, the canopy must neither project more than 0.030 in. into the slipstream nor be recessed by more than 0.060 in. At the aft end, the rear canopy arch must neither project nor be recessed more than 0.060 in.
- (13) Replace and adjust the hatch eccentric locating pins andpeen over the threads to lock.
- (14) Connect up the flexible tube to the union on the air valve.
- (15) Check that the hatch demisting pipes line up with the fixed canopy demisting pipes.
- (16) Conduct a pressure test as detailed in A.P.4099H, Vol.1, Sect.3, Chap.8, and re-check the canopy contour limits as in (12), when the cockpit is pressurised.
- (17) Clean out the cockpit and remove the protective rubber treatment from the hatch perspex panels.
- (18) Restore protective finishes as necessary. If the magnesium hatch casting has been filed, the affected areas should be treated in accordance with A.P.2662A, Scheme 1303.
- (19) Re-fit the canopy hatch jettison gun cartridge.

Vampire T Mk.11 (pre-Mod.Vam.3151)

5. Refer to A.P.4099J, Vol.1, Sect.3, Chap.1 for illustrations and phraseology. The canopy hatch should be fitted as follows:-

- (1) Remove the four latch bolts from the canopy, the two shear pins situated at the rear of the hatch and the two guide blocks (15.FC.1115), one on the port and one on the starboard side of the hatch.
- (2) Attach the hatch to the canopy by means of the two rear hinge bolts. Open the hatch gently and check that the rear masking strip on the hatch does not foul the adjacent canopy structure when the hatch is opened to a position approximately at right-angles to the canopy. If necessary file the

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hatch masking strip to obtain a slight clearance. (See Note.-).

Note.- When fitting of the hatch is completed, the gap between the hatch masking strip and the canopy over the whole hatch periphery must be between the limits of 0.20 in. max. and 0.050 in. min. but should be as close as possible to the minimum limit of 0.050 in. Since this gap is altered when the hinge bolt shimming is adjusted (3) and (6), only enough material should be filed from the masking strip to remove the immediate foul. No specific attempt should be made to produce the minimum gap of 0.050 in. until the hatch is finally bedded in the symmetrical position.

- (3) File round the hatch masking strip evenly on both sides, from the REAR TO THE FRONT, until the hatch seats squarely on the canopy.
- (4) In conjunction with the trimming operations it may be necessary to adjust the hatch position relative to the canopy by shimming under the hatch hinge bolts. Laminations of brass shim, up to a maximum thickness of 0.050 in., may be fitted under one or both hinge bolts to obtain symmetry of the hatch about the aircraft centre line, with a maximum gap of 0.020 in. between the four hatch feet bearers and the canopy latch bolt mountings.
- (5) Fit the two front latch bolts, lower the hatch on to them, and ensure that the latches do not foul the sides of their slots. To obtain a clearance, the latch bolts may be reduced in overall width to 0.45 in. by stoning, and the slots increased to 0.505 in. wide by filing.
- (6) In conjunction with (5) it may be necessary to adjust slightly the shimming behind the two hinge bolts to enable the hatch to ride over the latch bolts voluntarily.
- (7) Fit the centre latch bolts and repeat as for the front latches. The rear ends of the two centre slots in the hatch must be well radiused to allow free entry of the latch bolts, but such radiusing should not reduce the rear wall thickness below 0.050 in.
- (8) Reconnect the hatch strut and complete the assembly of the locking mechanism to the four latch bolts, ensuring that the centre line of the four latch bolts is symmetrical about the aircraft centre line when the hatch locking lever is in the fully open position. Fit the two modified eccentric shear pins (15.FC.1831) and the two eccentric

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- bushes (15.FC.1833), in place of the existing bushes in the canopy. These eccentric bushes and shear pins give an overall tolerance of 0.040 in. eccentricity.
- (9) Lock the hatch and from the inside check the gap between the centre rim on the canopy extrusion and the deflated rubber pressure seal on the hatch, paying particular attention to the two rear corners. This gap should be between 0.175 in. and 0.30 in. If the gap exceeds 0.30 in., remove the Parker Kalon screws securing the seal to the hatch, insert hard rubber packing of thickness up to 0.25 in. under the seal and secure with new screws of the appropriate length. Close the hatch and re-check the gap.
 - (10) Refit the two guide blocks to the port and starboard side of the hatch and trim to give 0.010 in. clearance between the guide block and the locking mechanism rod.
 - (11) Connect the air pipe to the hatch pressure seal, close the hatch and check the pressure seal for inflation.
 - (12) Finally dress the masking strips to fair in with the contour of the canopy.

Vampire T Mk.11 and Sea Vampire T Mk.22 (post-Mod.Vam.3151)
6. Refer to Vol.1, Sect.3, Chap.1 of the relevant A.P. for illustrations and phraseology. When a canopy hatch has been jettisoned in flight a careful examination of the rear canopy should be made for signs of movement or distortion of the following parts:-

- (a) The rear arch including the female eccentric bushes.
- (b) The hinge attachment bolts for signs of looseness due to possible stretching.
- (c) The hatch stay tube attachment pins and their respective attachments.

7. The canopy hatch (Fabricated - 15.FC.1725A, Cast - 15.FC.3007A) should be fitted as follows:-

- (1) Remove the two locating rollers from the rear canopy arch, the two rear eccentric locating pins from the hatch, the quick release pip pin from the lower end of the adjustable jettison tie rod immediately aft of the hydraulic jack, and the two hinge jettison levers, Part No.15.FC.2181, from the hatch.
- (2) Assemble each jettison hinge lever to the canopy, ensuring that it is seating correctly and not fouling the canopy hinge

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- centre attachment bolt when engaged with the canopy hinge locking spindle. If a foul occurs, file the lever to clear checking that the depth from the centre of the hole to the filed surface is not less than 0.36 in. and forming a blended radius of 0.40 in. The lever should now be checked to ensure that with one rubber seal fitted, Part No.15.FC.3369 - introduced on Mod.3321, (the lipped type seal is now obsolete) there is a minimum clearance of 0.020 in. between the lever and the butt plate situated immediately behind the canopy hinge. If necessary, fit two rubber seals to obtain this clearance. On completion of this and any subsequent filing the lever should be treated with an etch primer, D.T.D.900/4125, followed by hardener, D.T.D.900/4126, and paint as background.
- (3) Attach the rubber seals to the hinge jettison lever with Bostik 'C' adhesive. The contact faces of the canopy and seal must form a leak-proof joint but must not stick together. Apply french chalk in the area where the seal contacts the rear canopy.
 - (4) Move the jettison tie rod to the jettison position and fit both hinge jettison levers. Pull the tie rod down, locking both levers in position by the jettison cams. The following chocks should now be made:-
 - (a) The engaging faces of the jettison lever lugs and the cams should overlap by 0.25 in. min., 0.30 in. max. To obtain this it may be necessary to adjust the shimming, which is nominally 0.060 in., under the jettison shaft torque tube mountings with 0.003 in. laminations Spec. Attewell L.A.3.
 - (b) Ensure that the toes of the jettison cams do not foul the arms of the levers in the release condition. This check can be made by operating the jettison tie rod whilst holding the levers hard down on to the canopy. If necessary, file the lever locally to remove the foul. The maximum thickness of material to be removed by filing is 0.030 in.
 - (5) With the hinge jettison levers held in position and the hydraulic jack fully retracted, fit the quick release pip pin to the lower end of the adjustable tie rod.
 - (6) Adjust the tie rod until the hinge release lever presses hard against the hydraulic jettison jack roller with the hinge jettison levers fully engaged by the jettison cams.
 - (7) Re-check the jettison cam engagement in relation to the hinge jettison lever lug, and wire lock the jettison tie rod barrel eye end securely to prevent it turning either way.

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- (8) Remove the two hinge jettison levers from the canopy and assemble them to the hatch, securing with a countersunk-head rivet, AS.2229/30, lightly peened in position. Check the levers for freedom of movement.
- (9) Fit the hatch by attaching the hinge jettison levers to the canopy hinges and, with both levers pressed hard down, fit the quick release pip pin to the jettison tie rod.
- (10) Connect up the hatch support strut and, with the hatch in the open position, check that a clearance exists between the hatch hinge and the canopy hinge housing. To prevent a foul occurring, it may be found necessary to file a radius, not less than 0.46 in. from the hole centre, on one or each of the hatch hinges. After filing, the affected areas should be treated in accordance with A.P.2662A, Scheme 1303 for magnesium alloys.
- (11) Open the hatch gently and check that the rear masking strip on the hatch does not foul the upper surface of the adjacent canopy masking strip when the hatch is opened to a position approximately at right-angles to the canopy. If necessary, file the hatch masking strip to obtain a slight clearance. (See Note.-).

Note.- When fitting of the hatch is completed, the gap between the hatch masking strip and the canopy over the whole hatch periphery must be between the limits of 0.20 in. max. and 0.050 in. min. but should be as close as possible to 0.050 in. min. Since this gap can be altered by shimming the canopy housings (12), only enough metal should be filed from the hatch masking strip to remove the immediate foul. No specific attempt should be made to produce the minimum gap of 0.050 in. until the hatch is finally bedded in the symmetrical position.

- (12) In conjunction with the trimming operations, it may be necessary to adjust the hatch position relative to the canopy by shimming under the canopy hinge housings with a solid shim made from D.T.D.610 or D.T.D.546. The maximum permissible thickness of shim under either hinge housing is 0.032 in. and the shim must be properly bedded to the hinge housing assembly and arch. Laminated material must not be used.

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- (13) File round the hatch masking strip evenly on both sides, from the REAR TO THE FRONT, until the hatch seats squarely on the canopy.

Note.- It may be necessary to lightly dress back the pressure seal capping strip over the whole hatch periphery before it is possible to complete the operations (11), (12) and (13). The minimum gap between the seal capping strip and the canopy rail is 0.002 in. Care must be taken not to damage the pressure seal by the lip of the capping strip during dressing.

- (14) Gently close the hatch and from the inside of the cockpit, note any high spots on the pressure seal capping strips and dress as necessary. At the same time ensure that the two front and rear rubbing pads on the hatch casting do not foul the Redux ply shimmed pads fitted to the canopy rail. If a foul which causes the hatch to be thrown off centre does exist, remove the ply shim and re-shim to produce a clearance. The maximum permissible clearance is 0.10 in. for both the front and rear rubbing pads on a Fabricated Hatch and 0.080 in. for the front pads and 0.030 in. for the rear pads on a Cast Hatch.
- (15) With the hatch closed, check internally that the gap between the hatch casting (not the hatch seal) and the canopy structure, over the whole hatch periphery, is as follows:-
- (a) Fabricated Hatch - between 0.30 in. and 0.40 in.
At the rear arch only, the maximum value may be increased to 0.45 in. if essential but it is desirable that the gap should conform to the limits of 0.30 in. and 0.40 in.
 - (b) Cast Hatch - between 0.30 in. and 0.45 in. In this case, the maximum value may be increased to 0.50 in. at any point if essential but it is desirable that the value of 0.45 in. should not be exceeded.
- (16) Ensure that the external handle is in the closed position and check that the hatch locks correctly by closing the hatch and locking by means of the internal handle. This should only require application of a gentle load on the handle from the unlocked to the fully locked position with perhaps a little extra load over the last 1.0 in. of travel to ensure that the latches bite on the latch pads after the latch pads have been correctly shimmed. If necessary, to acquire the correct latch adjustment, shim the latch pads with 0.003 laminated brass shims, Specification Attewell

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L.B.2, to a maximum of 0.125 in. thickness under one or both pads.

Note.- Under no circumstances should an external force be used when checking the latch adjustment. There should be a minimum of 0.30 in. overlap of latch over latch pad when the hatch is in the fully closed position.

- (17) Check that the hatch front casting is seating squarely on the sill of the front windscreen casting by placing a piece of paper approximately 3.0 in. long on each end of the sill, closing the hatch and ensuring that the hatch firmly grips both pieces. Further shimming of the latch pads (16) may be necessary to satisfy this requirement. If the shimming has been altered, re-check the adjustments of the latches and of the hatch to canopy. Lock the countersunk bolts securing the latch pads by centre popping the screw-driver slots.
- (18) Close the hatch externally by means of the external handle, ensuring that the internal handle is in the fully locked position.

Note.- This does not include the position engagement of the internal handle lock lever catch, which must be manually engaged to ensure completion of the hatch locking operation. If the external handle does not fully lock the hatch, adjust the connecting rods on the hatch centre beam until the hatch latches engage and disengage fully under the action of either release handle.

- (19) Check the hatch contours relative to the canopy. At the forward end, the hatch must neither project more than 0.050 in. into the slipstream nor be recessed by more than 0.10 in. At the aft end, the hatch must neither project nor be recessed more than 0.10 in.

Note.- These dimensions must be checked in conjunction with the rubbing pad clearances (14). For example, if the front hatch pad clearance is 0.080 in., the forward edge of the hatch must be 0.030 in. below the canopy to ensure that when the cabin pressure is applied, and the clearance between the rubbing pads is reduced to nil, the hatch is not more than 0.050 in. above the canopy.

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- (20) With the hatch in the open position, adjust the rear crank arm as follows:-
- (a) Move the internal locking handle to the locked position and ensure that the air seal operating lever (i.e. the internal locking handle safety catch) is correctly engaged.
 - (b) Operate the jettison operating lever and check visually that free movement of the crank arm occurs before the rear hatch connecting rod assembly starts moving rearwards. The crank arm can be adjusted by means of an adjustable stop bolt, situated inside the hatch centre beam, to give a maximum of 0.10 in. movement rearwards before operation of the rear connecting rod assembly commences. Lock the adjustable stop bolt on completion of the adjustment.
- (21) Close and lock the hatch from the inside and check that the clearance between the jettison operating arm and the jettison jack roller is 0.15 in. If this dimension is exceeded, remove the jack roller spindle bolt, unscrew the fork roller assembly from the hydraulic jack ram, and bush the assembly, under the jack roller, with a 0.50 in. o.d. x 14 s.w.g., Spec. T.45 distance tube of maximum length 0.625 in., trimmed to produce the 0.15 in. clearance.

Note.- Before removing the jack roller spindle bolt remove the quick release pin from the adjustable jettison tie rod, to facilitate adjustment of the jack roller. Should the hatch be raised with this release pin removed, ensure that the jettison hinge levers are held down to prevent the hatch becoming disengaged at its hinge attachments.

If the clearance, without bushing, is less than 0.15 in., lengthen the rear crank arm by adjusting the eye-piece just sufficiently to obtain the required value.

- (22) With the hatch in the closed position, adjust the pneumatic pressure seal valve so that the tappet striker depresses the valve 0.10 in. approximately in the fully locked position.
- (23) Connect up the flexible tube to the union on the air valve and check the operation of the pressure seal.
- (24) Replace the eccentric locating spigots and adjust in conjunction with their respective eccentric bushes. The gap between the spigot face and the bush face for either type of hatch must not exceed 0.10 in. If, after shimming as in (a) and (b) below, the gap still exceeds 0.10 in.,

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fit steel shims below the head of the spigot bolt. The initial permissible shimming is as follows:-

- (a) Fabricated Hatch.- A maximum thickness of 0.05 in. laminated shim, Specification Attewell L.A.3, below the spigot bracket and shaped to suit the base.
 - (b) Cast Hatch.- A maximum thickness of 0.030 in. laminated shim, Specification Attewell L.A.3, below the canopy rear arch eccentric bush mounting brackets and shaped to suit the base.
-
- (25) With the hatch open, re-assemble the two locating rollers to the rear canopy arch. Gently lower the hatch until contact is made between the roller and the hatch arms. Check that it is not possible to turn the roller under finger pressure with the hatch fully locked, and if necessary shim with 0.003 in. laminations, Spec. Attewell L.A.3, to a maximum thickness of 0.1 in. under the roller seats to obtain this fit.
 - (26) Open the hatch and check that the hatch springs open approximately 3.0 in. of its own accord. This will ensure that the hatch opens freely. Repeat this operation using the external handle.
 - (27) Check that the hatch de-misting pipes line up with the fixed canopy pipes and that the rubber seals are in position on the two hatch connecting pipes.
 - (28) With the hatch closed, check the correct adjustment of the hatch damper jettison mechanism as follows:-
 - (a) With the damper strut release mechanism in the locked position, the jettison actuating lever must be so adjusted that it lightly contacts the jettison trip stud in the hatch fully closed condition.
 - (b) The actuating lever must engage with the stud 0.15 in. from its outboard end.
 - (c) Check that the inboard edge of the jettison guard is 0.15 in. from the outboard edge of the jettison stud with a 0.050 in. clearance between the guard and the stud.
 - (29) Check that the air seal operating lever slot (this lever also functions as the internal locking handle safety catch)

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engages correctly with the spigot on the hatch handle and, at the same time, check the spring for correct tension. If adjustment has been made, ensure that the eccentric bolt assembly is secure.

- (30) When fitting a hatch of pre-Mod.3448 standard, ensure that the clearance between the air seal operating lever toe and the starboard front cut-away of the head guard mounted on the centre beam is 1.0 in. min., when the guard is in the fully forward position. If necessary, trim the guard and the rubber padding to obtain the minimum clearance. Ensure that there is no fore and aft movement of the head guard, and re-clinch the metal "wrap-overs" to the centre beam as necessary.
- (31) Restore protective finishes as necessary. If the magnesium hatch casting has been filed, the affected areas should be treated in accordance with A.P.2662A, Scheme 1303.
- (32) Clean out the cockpit, remove the protective rubber treatment from the hatch perspex panels and carry out a pressure test as detailed in the relevant Vol.1.

Front windscreen panel, two-seater aircraft

8. Remove the damaged panel, complete with seal and packings (if fitted), by detaching the four masking strips; it should be noted that on NF Mk.10 aircraft and T Mk.11 (pre-Mod.3151) aircraft, the lower masking strip is a welded assembly with the de-icer tube, and it will therefore be necessary to disconnect the de-icing system prior to removing this masking strip. Clean out the Boscoprene sealant from the windscreen casting recess without the use of solvents as traces of these may remain and subsequently de-laminate the replacement screen. Fit a new panel (fig.4/F1) in the following manner:-

- (1) Examine the replacement screen carefully for signs of damage, particularly around the edge of the front laminate.

Note.- If damage does exist and it is decided to continue to fit the screen, the fact should be noted for future reference should the screen eventually fail.

- (2) Protect both faces of the screen with cardboard (cut to within 0.75 in. from the edge of the screen) attached with masking tape (Stores Ref.32B/913).
- (3) Fit the new seal (if supplied separately) to the replacement screen with a thin film of sealant, Boscoprene 2100 (Stores Ref.33C/1281), ensuring that there is a tight fit between glass and seal.

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- (4) Carefully insert the screen into the casting and, if possible, push it upwards so that it seats firmly in the top recess. If necessary, insert a piece of 0.4 in. wide natural rubber packing (approx. 40 Shore hardness) of the required thickness between the bottom edge of the screen and the casting to hold it in this position; in a similar manner, it may also be necessary to pack between the two side edges of the screen and the casting to position the screen centrally.
- (5) Temporarily bolt the masking strips in position as shown in fig.4/F1, ensuring that a gap of 0.05 in. min. to 0.1 in. max. exists between these and the outer glass laminate of the screen. If necessary, remove and file the strips to obtain this gap.

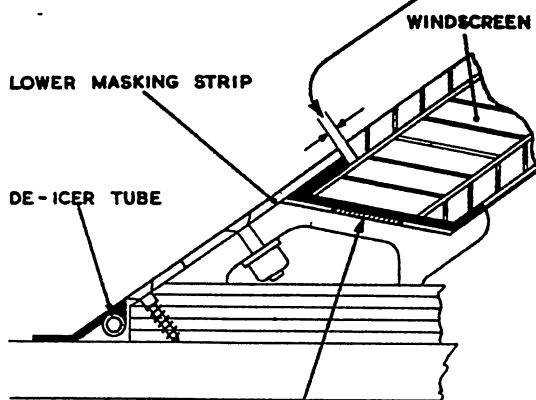
Note.- Throughout this operation, ensure that the glass does not move, and that the masking strips do not touch the edge of the front laminate causing perhaps a slight damage mark.

- (6) When the correct gaps have been obtained, remove the masking strips, windscreen and any packings. Apply a liberal coat of sealant, Boscoprene 2100 into the casting recess, over the packings and windscreen seal, and replace the windscreen.
- (7) Fit the lower masking strip and temporarily secure with bolts as shown, using sealant, Boscoprene 2100, over the area in contact with the windscreen.
- (8) Assemble the three remaining masking strips with further applications of the sealant adjacent to the windscreen, and bolt at the ends. Check the gaps as in (5), replace the remaining bolts in all the masking strips and, finally, tighten each one progressively, commencing at the centre of each masking strip and working outwards to the ends.
- (9) The windscreen should now be left for twenty-four hours to allow the sealant to cure, any surplus material then being removed without the use of solvents. Finally, carry out a pressure test as detailed in the relevant Vol.1.

(A.L.18, August '56)

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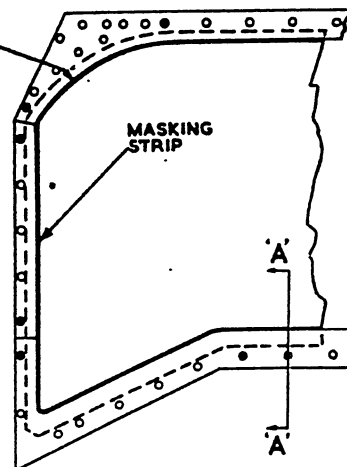
MAINTAIN GAP OF 0.05 IN. TO 0.1 IN.
BETWEEN WINDSCREEN AND MASKING STRIPS



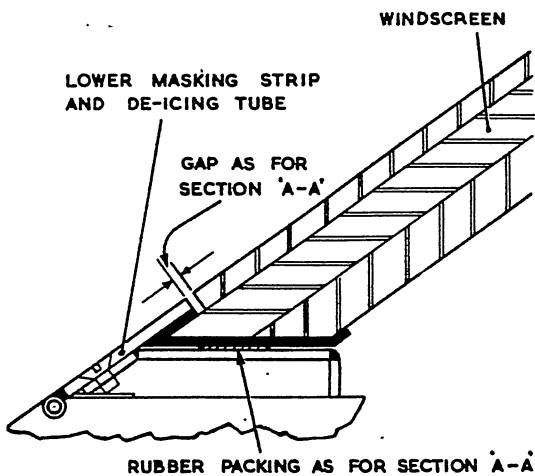
0.4 IN. WIDE RUBBER PACKING WHERE
NECESSARY (APPROX. 40 SHORE HARDNESS)

SECTION A-A

MK. T11 AND T22 (POST-MOD. 3151)



TEMPORARILY BOLT MASKING STRIPS
AT HOLES MARKED THUS: -●-



SECTION B-B

MK. T11 AND T22 (PRE-MOD. 3151)
MK. 10 SIMILAR



WHEN FINALLY BOLTING DOWN COMMENCE
AT CENTRE OF THE MASKING STRIPS AND
WORK OUTWARDS TO THE ENDS.

Fig. 4/F1. Fitting of replacement windscreens

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CHAPTER 5

ALIGHTING GEAR

Chapter 5

ALIGHTING GEAR

(Completely revised)

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	Para.		Para.
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Wear limits, main undercarriage ...	5/3		

Description

1. The alighting gear is of the tricycle type and it comprises two main landing wheel assemblies (*fig. 5/1*) attached to the wing structure and one wheel assembly (*fig. 5/2*) situated in the nose of the fuselage, all of which are retractable. The shock absorption is effected by the use of hydraulic controlled compression legs. The general design of the alighting gear is the same in all marks of the aircraft, but there are some variations in detail design which necessitate the use of different parts in the various marks, such parts are indicated in the relevant illustrations and keys.

Negligible damage

2. *Main and nose undercarriage.* No damage which affects these structures can be defined as negligible, and in the event of damage the affected members must be renewed.

3. *Nose wheel top structure, Mk. 5 and 9.* Any smooth isolated dents which are free from cracks or fractures of the metal, and which do not exceed 1/40th of the tube diameter in depth, may be treated as negligible when situated in the end thirds of a member. The nose wheel top structure is illustrated in *fig. 5/5*; the limit of bowing in tubular members which may be treated as negligible is as defined in para. 12 of Chap. 1.

F.S. 1

Wear limits

4. Wear limits of the male and female parts of the alighting gear are shown in the keys which are included opposite the pertinent key diagrams (*fig. 5/3 and 5/4*).

Application of keys

5. *Dimensions, new.* The figures given in this column are the maximum and minimum sizes to which new parts are made. The difference between the two dimensions is the manufacturing tolerance and is an expression of the accuracy of workmanship required by the design.

6. *Permissible worn dimension.* The figure given in this column is the limiting dimension to which the part may be worn and still be refitted for a further period of service, provided that its mating part is selected so that the permissible worn clearance (*para. 8*) is not exceeded. In the extreme, this would necessitate the mating part being to the high, or low, limit of the dimension new (high for male parts and low for female parts).

7. *Clearance, new.* This column gives maximum and minimum clearances which result from mating two new parts.

8. *Permissible worn clearance.* This is the maximum clearance permitted between two mating parts which are assembled to undergo a further period of service.

(A.L.29, May 58)

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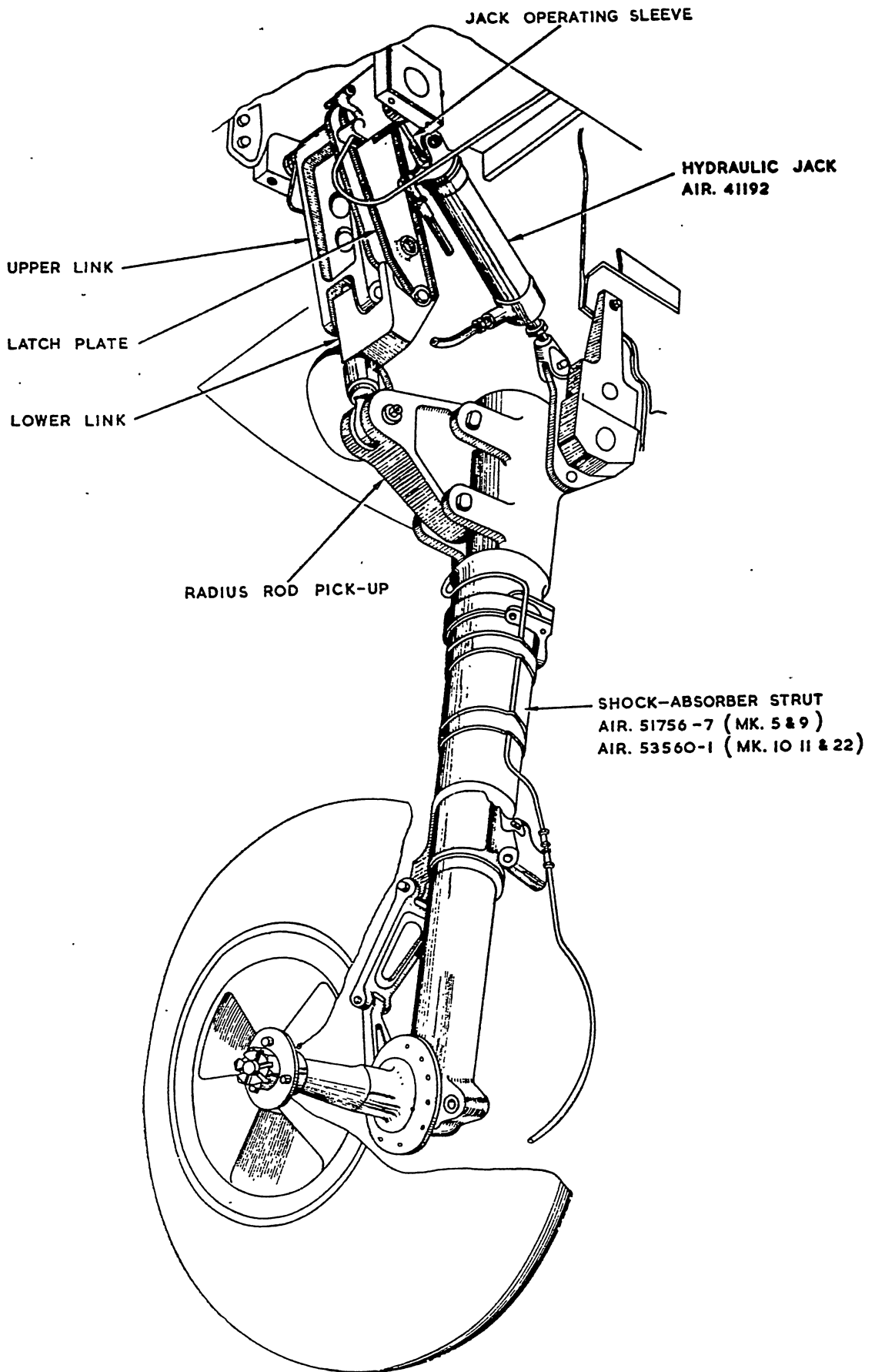


Fig. 5/1. Main undercarriage
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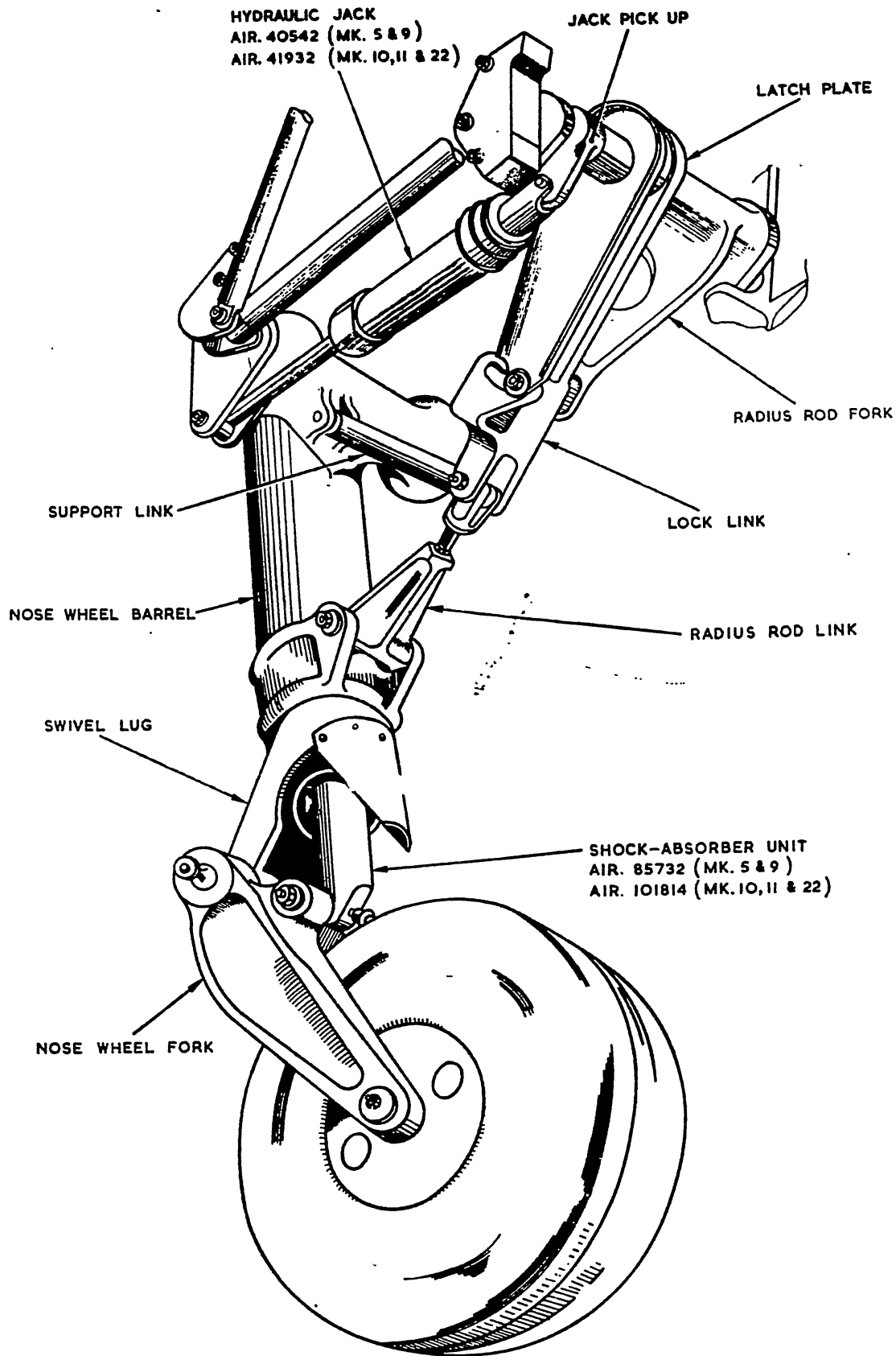


Fig. 5/2. Nose wheel undercarriage

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(A.L.29, May 58)

KEY TO FIG. 5/3. (Wear limits, main undercarriage)

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
1	OLEO CASING LUGS			REFER TO A.P.1803	
2	SPECIAL BOLT (GOO.1013)	$\frac{0.6875}{0.6870}$	0.6860	$\frac{0.0010}{-0.0005}$	0.0020
3	RADIUS ROD PICK-UP (GOO.1003/4)	$\frac{0.6880}{0.6870}$	0.6895		
4	RADIUS ROD PICK-UP (GOO.1003/4)	$\frac{0.8755}{0.8745}$	0.8775	$\frac{0.0030}{0.0010}$	0.0040
5	SPECIAL BOLT (GOO.53)	$\frac{0.8735}{0.8725}$	0.8705	$\frac{0.0030}{0.0010}$	0.0040
6	RADIUS ROD EYE-BOLT (GOO.1015) (BUSH, GOO.40)	$\frac{0.8755}{0.8745}$	0.8775		
7	RADIUS ROD TOP LINK (GOO.1983/4)	$\frac{0.6880}{0.6870}$	0.6900	$\frac{0.0030}{0.0010}$	0.0040
8	BOLT (GOO.51)	$\frac{0.6860}{0.6850}$	0.6840	$\frac{0.0030}{0.0010}$	0.0040
9	RADIUS ROD BOTTOM LINK (GOO.59-60) (BUSH, GOO.38)	$\frac{0.6880}{0.6870}$	0.6900		
10	JACK HEAD			REFER TO A.P.1803	
11	SPECIAL BOLT (GOO.1901)	$\frac{0.3736}{0.3730}$	0.3715	$\frac{0.0024}{0.0010}$	0.0035
12	JACK PICK-UP (GOO.1979) (BUSH, GOO.48)	$\frac{0.3754}{0.3746}$	0.3771		
13	JACK FORK END (GOO.1707)	$\frac{0.3754}{0.3746}$	0.3773	$\frac{0.0024}{0.0008}$	0.0035
14	SPECIAL BOLT (GOO.87)	$\frac{0.3738}{0.3730}$	0.3715	$\frac{0.0024}{0.0008}$	0.0035
15	JACK LEVER (GOO.1007/8) (BUSH, GOO.86)	$\frac{0.3754}{0.3746}$	0.3773		
16	LATCH PLATE (GOO.1088/9)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0030
17	SPECIAL BOLT (Stepped) (GOO.203)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0030
18	ROLLER (GOO.71)	$\frac{0.3754}{0.3746}$	0.3774		
19	LATCH PLATE (GOO.1087)	$\frac{0.2503}{0.2497}$	0.2540	$\frac{0.0033}{-0.0003}$	0.0045
17	SPECIAL BOLT (Stepped) (GOO.203)	$\frac{0.2500}{0.2470}$	0.2455		

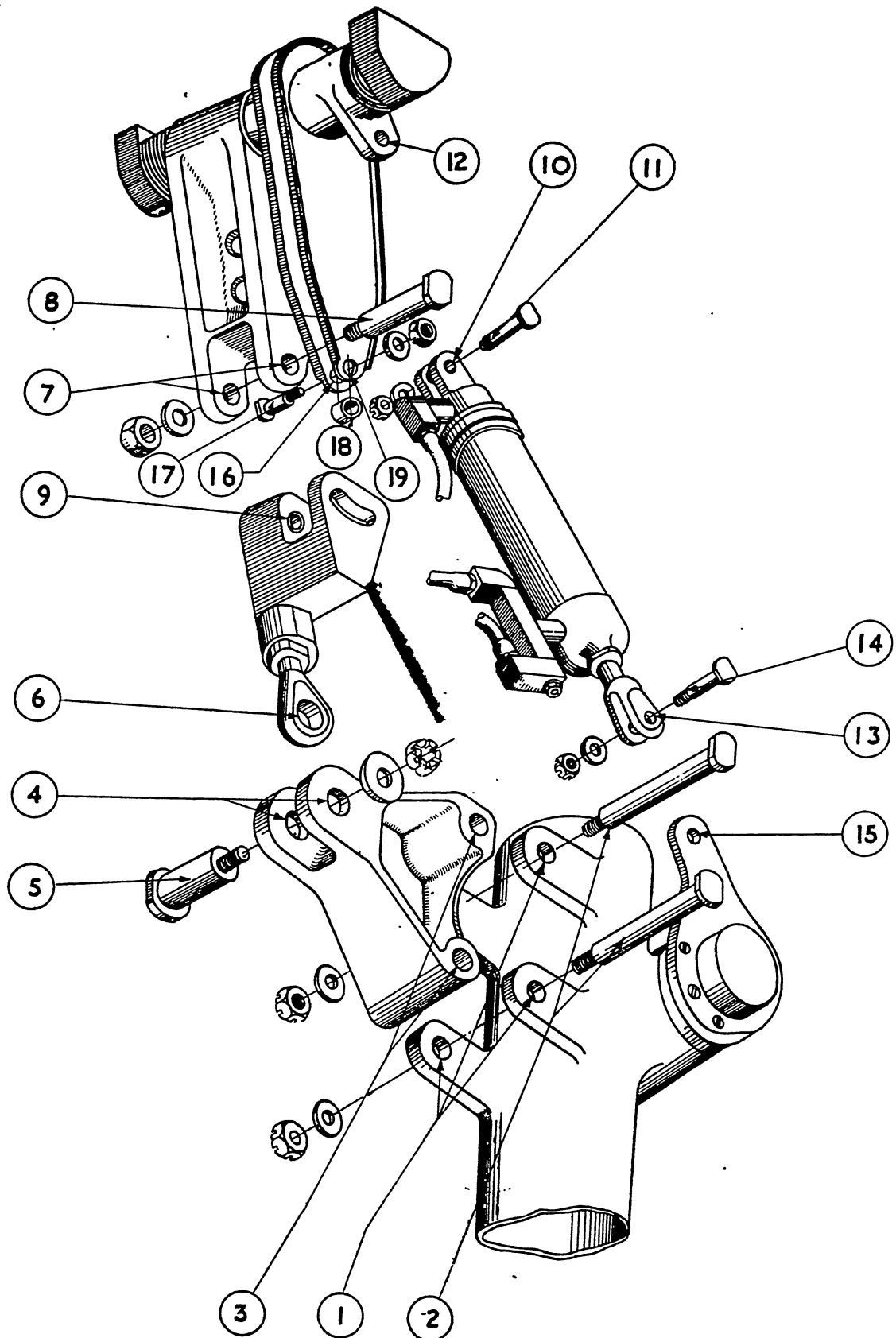


Fig. 5/3. *Wear limits, main undercarriage*

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
1	WHEEL FORK (ALL MARKS, GOO.176) (BUSH, GOO.218)	$\frac{0.7505}{0.7495}$	0.7530	$\frac{0.0030}{0.0010}$	0.0045
2	SPECIAL BOLT (ALL MARKS, 12.20.UN.55)	$\frac{0.7485}{0.7475}$	0.7450	$\frac{0.0030}{0.0010}$	0.0045
3	SWIVEL LUG (MK. 5 AND 9, GOO.232; MK. 10, 11 AND 22, 13.UN.91) (BUSH, ALL MARKS, GOO.218)	$\frac{0.7505}{0.7495}$	0.7530		
4	WHEEL FORK (ALL MARKS, GOO.176) (BUSH, GOO.219)	$\frac{0.7505}{0.7495}$	0.7530	$\frac{0.0030}{0.0010}$	0.0045
5	SPECIAL PIN (ALL MARKS, 12.20.UN.53)	$\frac{0.7485}{0.7475}$	0.7450		
6	PISTON-ROD BUSH		REFER TO A.P.1803		
7	BARREL LOWER PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99) (BUSH, ALL MARKS, GOO.211)	$\frac{0.5004}{0.4996}$	0.5019	$\frac{0.0016}{0.0002}$	0.0025
8	SPECIAL BOLT (ALL MARKS, GOO.1043)	$\frac{0.4994}{0.4988}$	0.4971	$\frac{0.0016}{0.0002}$	0.0025
9	LOWER LINK (ALL MARKS, GOO.1052)	$\frac{0.5004}{0.4996}$	0.5019		
10	BARREL UPPER PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0025
11	SPECIAL BOLT (ALL MARKS, GOO.208)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0025
12	UPPER LINK (MK. 5 & 9, 12.UN.75; MK. 10, 11 AND 22, 13.UN.127)	$\frac{0.3754}{0.3746}$	0.3774		

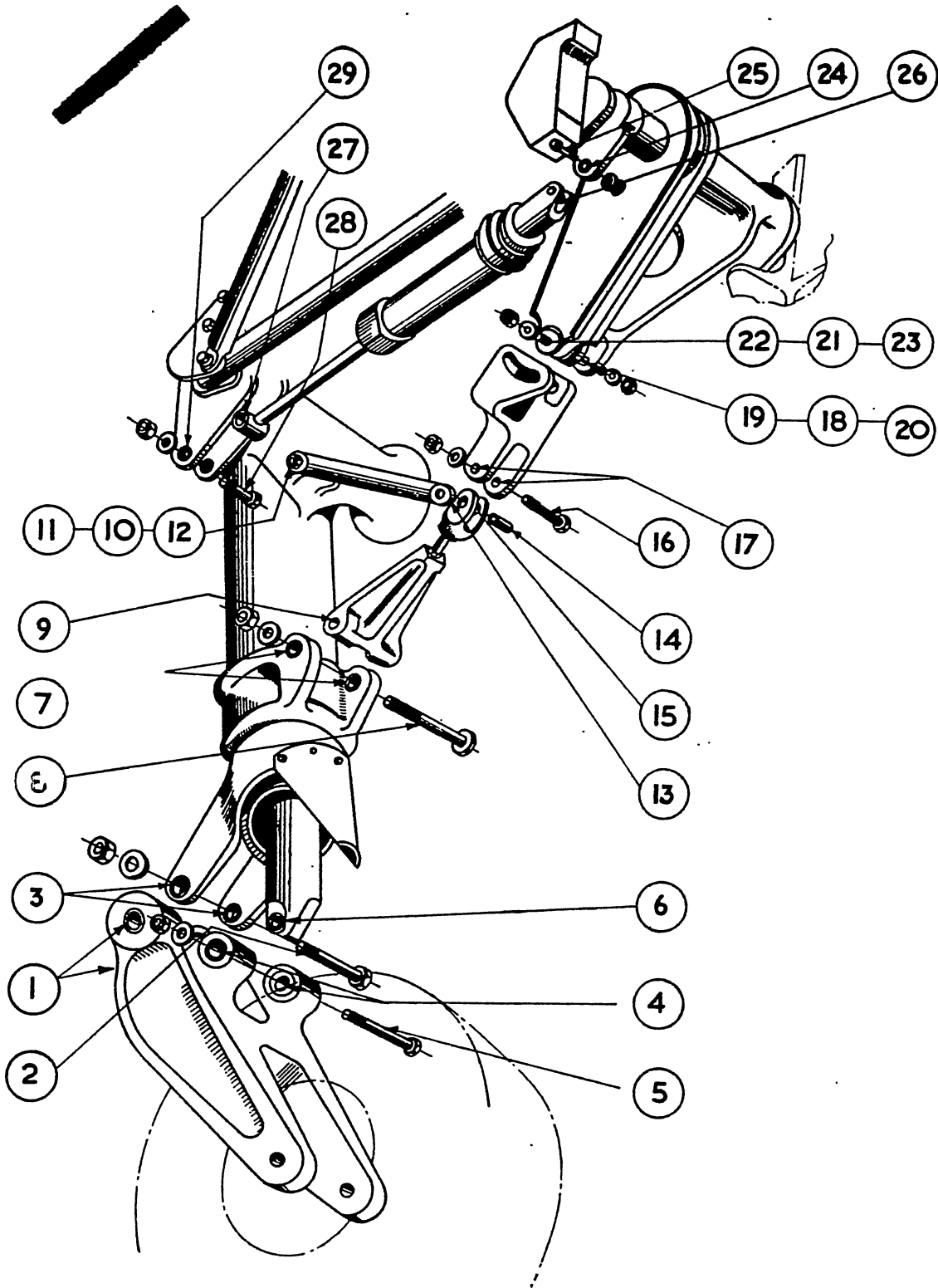


Fig. 5/4. *Wear limits, nose wheel undercarriage*

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)—continued

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
13	UPPER LINK (MK. 5 & 9, 12.UN.75; MK. 10, 11 AND 22, 13.UN.127)	$\frac{0.7505}{0.7495}$	0.7522	$\frac{0.0020}{0.0003}$	0.0030
14	BUSH, OUTSIDE (ALL MARKS, GOO.193)	$\frac{0.7492}{0.7485}$	0.7465	$\frac{0.0020}{0.0003}$	0.0030
15	FORK END (ALL MARKS, GOO.1041)	$\frac{0.7505}{0.7495}$	0.7522		
<hr/>					
14	BUSH, INSIDE (ALL MARKS, GOO.193)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
16	SPECIAL BOLT (ALL MARKS, GOO.1044)	$\frac{0.5613}{0.5605}$	0.5590	$\frac{0.0024}{0.0008}$	0.0035
17	RADIUS ROD LOWER (ALL MARKS, 13.UN.123)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
<hr/>					
18	RADIUS ROD UPPER (ALL MARKS, GOO.1809)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
19	KNUCKLE PIN (ALL MARKS, GOO.1045)	$\frac{0.5613}{0.5605}$	0.5590	$\frac{0.0024}{0.0008}$	0.0035
20	RADIUS ROD LOWER (ALL MARKS, 13.UN.123), (BUSH, GOO.192)	$\frac{0.5629}{0.5621}$	0.5645	$\frac{0.0024}{0.0008}$	0.0035
<hr/>					
21	LATCH PLATE (MK. 5 & 9, GOO.185; MK. 10, 11 AND 22, 13.UN.165)	$\frac{0.2503}{0.2497}$	0.2540	$\frac{0.0033}{-0.0003}$	0.0045
22	SPECIAL BOLT (Stepped) (ALL MARKS, GOO.203)	$\frac{0.2500}{0.2470}$	0.2455		

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KEY TO FIG. 5/4. (Wear Limits, Nose Wheel Undercarriage)—continued

Ref. No.	Description of Part	Dimensions, New	Permissible Worn Dimensions	Clearance, New	Permissible Worn Clearance
21	LATCH PLATE (MK. 5 & 9, GOO.186; MK. 10, 11 AND 22, 13.UN.166)	$\frac{0.3754}{0.3746}$	0.3774	$\frac{0.0016}{0.0002}$	0.0030
22	SPECIAL BOLT (Stepped), (ALL MARKS, GOO.203)	$\frac{0.3744}{0.3738}$	0.3720	$\frac{0.0016}{0.0002}$	0.0030
23	ROLLER (ALL MARKS, GOO.70)	$\frac{0.3754}{0.3746}$	0.3774		
24	JACK LEVER (MK. 5 & 9, GOO.187; MK. 10, 11 AND 22, 13.UN.163) (BUSH, ALL MARKS, GOO.48)	$\frac{0.3754}{0.3746}$	0.3773	$\frac{0.0024}{0.0008}$	0.0035
25	SPECIAL BOLT (MK. 5 & 9, GOO.756; MK. 10, 11 AND 22, 13.UN.135)	$\frac{0.3738}{0.3730}$	0.3715		
26	JACK HEAD		REFER TO A.P.1803		
27	JACK ROD END FITTING (ALL MARKS, GOO.647) (BUSH, GOO.201)	$\frac{0.3754}{0.3746}$	0.3775	$\frac{0.0029}{0.0011}$	0.0040
28	SPECIAL BOLT (ALL MARKS, GOO.649)	$\frac{0.3735}{0.3725}$	0.3710	$\frac{0.0029}{0.0011}$	0.0040
29	JACK PICK-UP (MK. 5 & 9, 12.UN.161; MK. 10, 11 AND 22, 13.UN.99) (BUSH, ALL MARKS, GOO.210)	$\frac{0.3754}{0.3746}$	0.3775	$\frac{0.0029}{0.0011}$	0.0040

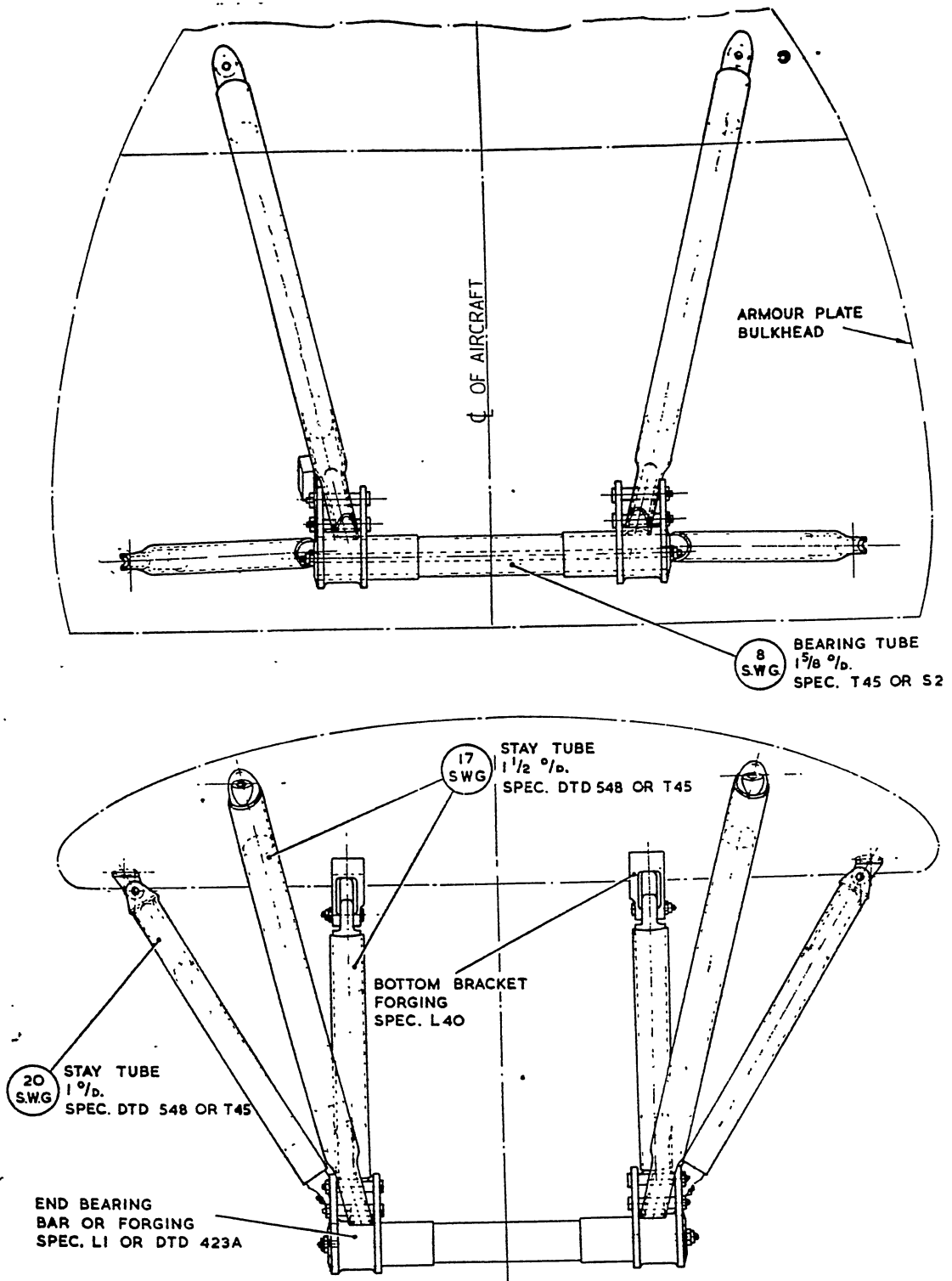


Fig. 5/5. Nose wheel top structure, Mk. 5 and 9

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MAIN PLANE

Chapter 6 MAIN PLANE

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aircraft	6/14A	Inboard flap shroud (Mk. 5 and 20)	6/44A
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Description (fig. 6/1, 6/1A)

1. The main plane is constructed of alclad with top and bottom skins riveted to ribs and the main spar. The rear ends of the skins are riveted to a member which carries ailerons, flaps and shrouds; the leading edge is riveted to the main spar.

Repair restrictions

2. Damage to the nose of the wing of the aircraft can only be repaired if within the limitations shown on fig. 6/1 or 6/1A and fig. 6/14 or 6/14A. When the damage to be repaired falls outboard of rib No. 10, the

aircraft, after repair, must be test flown and, if necessary, rectified in accordance with fig. 6/57, before being returned to service. Later aircraft have the design of the nose construction a little different from that in earlier aircraft, and the repair effected must be as shown in fig. 6/14A and not in fig. 6/14 which is intended to apply to earlier aircraft.

Negligible and repairable damage

3. Limits of negligible and repairable damage are set out in the following table where references are included to the illustrations of permissible repair methods.

TABLE I
Definitions of negligible and repairable damage

Component	Limits of damage		Repair illustration (Fig. No.)	Repair material item number (Chap. I, Table 3)	Key diagram (fig. No.)	
	Negligible	Repairable				
Spars Webs, front and rear spars	Dents or bruises 0-03 in. deep, 2-0 in. dia., 18-0 in. apart	0-5 in. dia. 12-0 in. apart	6/4	17, 18, 29, 30 15, 17, 18, 29, 30	6/2, 6/3	
		1-0 in. dia. 18-0 in. apart	6/5			
		1-0 in. x 1-5 in. (lightening hole area) 2-0 in. x 3-0 in. 24-0 in. apart	6/5, 6/6			15, 17, 26, 27, 29
Booms, front spar	Dents or bruises 0-05 in. deep, 1-5 in. dia., 18-0 in. apart				6/2	
Skin Top and bottom, 16 s.w.g.	Dents or bruises 0-05 in. deep, 2-0 in. dia., 18-0 in. apart	0-5 in. dia. 12-0 in. apart	6/9 6/9 6/10 6/11	15, 17, 38, 39 15, 17, 38, 39, 55, 56, 17, 18 39, 57, 66	6/7, 6/8	
		1-0 in. dia. 18-0 in. apart				
		2-0 in. dia. 24-0 in. apart				
		3-0 in. dia. 24-0 in. apart				
18 s.w.g.	Dents or bruises 0-03 in. deep, 1-5 in. dia., 18-0 in. apart	0-5 in. dia. 12-0 in. apart	6/9	17, 18, 38, 39		
		1-0 in. dia. 12-0 in. apart				
Leading Edge	Dents or bruises 0-05 in. deep, 2-0 in. dia., 18-0 in. apart	10-0 in. and as shown in fig., 0-5 in. dia. inboard of rib No. 2	6/14 6/14A	17, 18, 38, 39 17, 18, 29, 30	6/1, 6/1A	
		1-0 in. dia. 30-0 in. apart	6/4 6/15, 6/16	28, 29, 38, 39, 55, 65	6/7, 6/8	
Stringers	Dents or bruises 0-02 in. deep, 0-5 in. long, 18-0 in. apart				6/7, 6/8	
Rib No. 1, 1A and 1B	Dents or bruises 0-03 in. deep, 2-0 in. dia., 12-0 in. apart				6/18	
2	Dents or bruises 0-05 in. deep, 2-0 in. dia., 12-0 in. apart	Hole, 1-0 in. dia.	6/29	16, 17, 25, 26	6/19	
3		Damage 0-5 in. x 1-0 in. at flanged hole, 1-0 in. between flanged holes	6/30	15, 16, 17, 29, 30	6/20	
4		1-0 in. dia., 1-0 in. flanged insertion	6/29	16, 17, 25, 26	6/21	
5, 5A		f s for rib No. 3	6/30	15, 16, 17, 29, 30	6/22	
6, 6A		As for rib No. 4	As for rib No. 3	6/29	16, 17, 25, 26	6/23
7				6/29	16, 17, 25, 26	6/24
8				6/29	16, 17, 25, 26	6/25
9, 10				6/30	15, 16, 17, 29, 30	6/26
11, 12			Rib insertion (one only per rib)	6/31	17, 29, 30	6/27
13, 14			1-0 in. flanged insertion	6/29	16, 17, 25, 26	6/28
		0-5 in. x 1-0 in. damage at flanged holes	6/30	15, 16, 17, 29, 30		
		1-0 in. dia. between flanged holes	6/31	17, 29, 30		
		Rib insertion (one only per rib)	6/31	17, 29, 30		
Tank arch		1-0 in. flanged insertion	6/29	16, 17, 25, 26	6/17	
Air intake						
Outer air duct					6/32	
Wheel well	Dents or bruises 0-03 in. deep, 2-0 in. dia., 12-0 in. apart	0-5 in. dia. 12-0 in. apart	6/9	17, 18, 29, 30	6/32A	
Undercarriage		1-0 in. dia. 18-0 in. apart				
Diaphragms	Dents or bruises 0-03 in. deep, 1-0 in. dia., 12-0 in. apart				6/33	
Tank door						
Stub boom	Dents or bruises 0-03 in. deep, 2-0 in. dia., 18-0 in. apart	3-0 in. dia. 18-0 in. apart	6/36, 6/37	12, 13, 16, 38, 39	6/34, 6/35	
Shell						
Diaphragms	Dents or bruises 0-03 in. deep, 2-0 in. dia., 12-0 in. apart				6/52	

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TABLE I (continued)

Component	Limits of damage		Repair illustration (fig. No.)	Repair material item number (Chap 1, Table 3)	Key diagram (fig. No.)
	Negligible	Repairable			
Wing tip					
Skin	Dents or bruises 0.05 in. deep, 1.5 in. dia., 6.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 18.0 in. apart 3.0 in. dia. }	6/9	17, 18, 29, 30	6/53 6/53A
Ribs	Dents or bruises 0.03 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia., one item only on each rib 1.0 in. dia. (flange)	6/51	6, 29, 37, 38, 54, 56, 65	
Aileron					
Skin	Dents or bruises 0.05 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 18.0 in. apart 1.0 in. dia. } 18.0 in. apart	6/9	17, 18, 29, 30	6/38, 6/38A
Ribs	Dents or bruises 0.02 in. deep, 0.5 in. dia., 6.0 in. apart	(one per rib)	6/50	16, 37, 38, 57, 58	
Spar	Dents or bruises 0.05 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 1.0 in. dia. } 18.0 in. apart (flange) 2.0 in. dia. }	6/9, 6/51	17, 18, 29, 30 16, 17, 28, 29, 53, 54	6/39
Shroud	Dents or bruises 0.02 in. deep, 1.5 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. }	6/9	17, 18, 29, 30	
Flaps (inner and outer)					
Skins	Dents or bruises 0.05 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 18.0 in. apart 3.0 in. dia. } one only per skin	6/9	17, 18, 29, 30	6/43, 6/43A 6/45, 6/45A
Ribs	Dents or bruises 0.02 in. deep, 0.5 in. dia., 6.0 in. apart	0.5 in. dia. } one item only per rib 1.0 in. dia. } (flange)	6/9 6/50	16, 17, 28, 29, 30	
Flap shrouds (inner and outer)					
Skin	Dents or bruises 0.02 in. deep, 1.2 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 18.0 in. apart 3.0 in. dia. } 24.0 in. apart 7.0 in. dia. }	6/9 6/38	17, 18, 29, 30 17, 18, 38, 39	6/44, 6/44A 6/47
Stiffeners	Dents or bruises 0.02 in. deep, 0.5 in. dia., 12.0 in. apart	1.0 in. dia. } 12.0 in. apart	6/50	16, 37, 38, 50, 51	
Ribs	Dents or bruises 0.02 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 1.0 in. dia. } flange	6/9 6/51	17, 18, 29, 30 16, 17, 37, 38, 53, 54	6/48, 6/48A
Dive brake flap					
Skin	Dents or bruises 0.05 in. deep, 0.5 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } one only per skin	6/9	17, 18, 29, 30	
Ribs	Dents or bruises 0.02 in. deep, 0.5 in. dia., one only per rib	1.0 in. flange } one only per rib	6/51	16, 17, 35, 53, 54	
Dive brake shroud					
Skin	Dents or bruises 0.02 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 18.0 in. apart 3.0 in. dia. }	6/9	17, 18, 29, 30	6/49
Ribs		1.0 in. flange } one only per rib	6/51	16, 37, 38, 53, 54	

Aileron mass balance

4. When an aileron is repaired, there is always a possibility that the mass balance will be affected by the weight of the repair material added to the structure. The difference between the weight of the material added and that cut out may necessitate additions to the balance weight. Fig. 6/40 shows the method of adding weight and fig. 6/41 is a chart by reading which the amount of weight to be added for any combination of repairs can be ascertained.

Method of using chart

5. After preparation of the patch, but before the actual repair is commenced, the procedure outlined below should be followed in conjunction with fig. 6/40.

(1) Material used in repair and any material removed before effecting a repair, must be separately weighed to an $\frac{1}{8}$ th of an ounce. The second weight should be deducted from the first and the result recorded as "m".

(2) The fore and aft distance of the estimated repair C.G. from the hinge line of the aileron should then be measured in inches and recorded as the "x" dimension.

(3) The spanwise distance of the estimated repair C.G. from the inboard edge of the aileron should be measured in inches, this being dimension "z" shown in the figure. To this dimension, the constant 107.8 in. should be added. This total now represents dimension "y" and should be recorded.

(4) For each repair the product "mxy" should be calculated.

If the repair is forward of the hinge line the product is negative; if it is in the area aft of the hinge line it is positive. If two or more repairs are being effected to the aileron then the final repair product will be equal to the algebraic sum of each repair product.

(5) The corresponding change in weight for any given value of "mxy" may now be obtained from the chart given in fig. 6/40.

Example:—

On examination of the aileron, three holes are found in the main skin. After accurately measuring the location of each, it is found that one of the holes lies forward of the hinge centre line and is therefore in the negative area, whilst the remaining two are aft of the hinge centre line and are in the positive area. Tabulating the "x", "z" and "y" dimensions we have:—

$$x_1 = 8 \text{ in. (aft)} \quad z_1 = 62.2 \text{ in.} \\ y_1 = 62.2 + 107.8 = 170 \text{ in.}$$

$$x_2 = 4 \text{ in. (aft)} \quad z_2 = 12.2 \text{ in.} \\ y_2 = 12.2 + 107.8 = 120 \text{ in.}$$

$$x_3 = \frac{1}{8} \text{ in. (for'd)} \quad z_3 = 72.2 \text{ in.} \\ y_3 = 72.2 + 107.8 = 180 \text{ in.}$$

The repair patches and rivets are prepared and weighed, and after subtracting the weight of the material cut away are found to be:—

$$m_1 = 2 \text{ oz.}$$

$$m_2 = 3 \text{ oz.}$$

$$m_3 = 1 \text{ oz.}$$

Since the repair product " $m_3x_3y_3$ " is negative, the algebraic sum of the repair products will be:—

$$m_1x_1y_1 + m_2x_2y_2 - m_3x_3y_3 \\ = \text{Total repair product.}$$

$$\therefore (2 \times 8 \times 170) + (3 \times 4 \times 120) - (1 \times \frac{1}{8} \times 180) \\ = 2720 + 1440 - 90 = + 4070.$$

Referring to the chart on fig. 6/40 we obtain from " $mxy = 4070$ " a corresponding value of $7\frac{1}{2}$ oz.

Therefore, the product of "mxy" being positive the necessary weight to be added to restore the balance is $7\frac{1}{2}$ oz.

Wear limits

6. Wear limits for all male and female parts of the principal fittings in the wing are given in the table facing fig. 6/54, and reference should be made to Chap. 1, para. 14, for the method of application.

MAIN PLANE (Mark 3)

Key to items shown on Fig. No. 6/1

Assembly D.003501-2

Key No.	Part No.		Description	Fig. No.
	L.H.	R.H.		
1	D.003503	D.003504	Top skin	
2	D.003505	D.003506	Bottom skin	6/7
3	D.003677	D.003678	Main spar	6/8
4	D.003507	D.003508	Arrangement of stringers	6/2
5	D.00899	D.00900	Assembly of rib No. 1	—
6	D.003679	D.003680	False spar	6/18
7	R.007	R.008	Arrangement of air supply in wing	6/3
8	D.001027	D.001028	Assembly of air duct in wing	—
9	D.004339	D.004340	Assembly of tank arch	6/32
10	D.001973	D.001974	Assembly of stub boom to wing	6/17
11	D.003999	D.004000	Assembly of stub plane leading edge	6/52
12	D.00151/1A	D.00152/1A	Wing tip	—
13	D.001605A	D.001606A	Inboard flap	6/53
14	D.001953	D.001954	Outboard flap	6/43
15	D.001729	D.001730	Inboard flap shroud	6/45
16	D.001951	D.001952	Outboard flap shroud	6/44
17	D.002175	D.002176	Dive brake flap	6/47
18	D.003933	D.003934	Dive brake flap shroud	6/48
19	D.001507A	D.001508A	Aileron	6/49
20	D.003409	D.003410	Aileron shroud	6/38
21	D.001821	D.001822	Aileron inboard hinge and control pulley	6/42
22	D.001387	D.001388	Aileron outboard hinges	—
23	D.001763	D.001764	Flap hinge inboard side of boom	—
24	D.001765	D.001766	Flap hinge outboard side of boom	—
25	D.001185	D.001186	Assembly of wing joint "A"	—
26	D.001187	D.001188	Assembly of wing joint "B"	—
27	D.00825	D.00826	Assembly of wing joint "C"	—
28	D.003709	D.003710	Wheel well in wing	6/33
29	D.004201	D.004202	Undercarriage diaphragms in wing	6/33

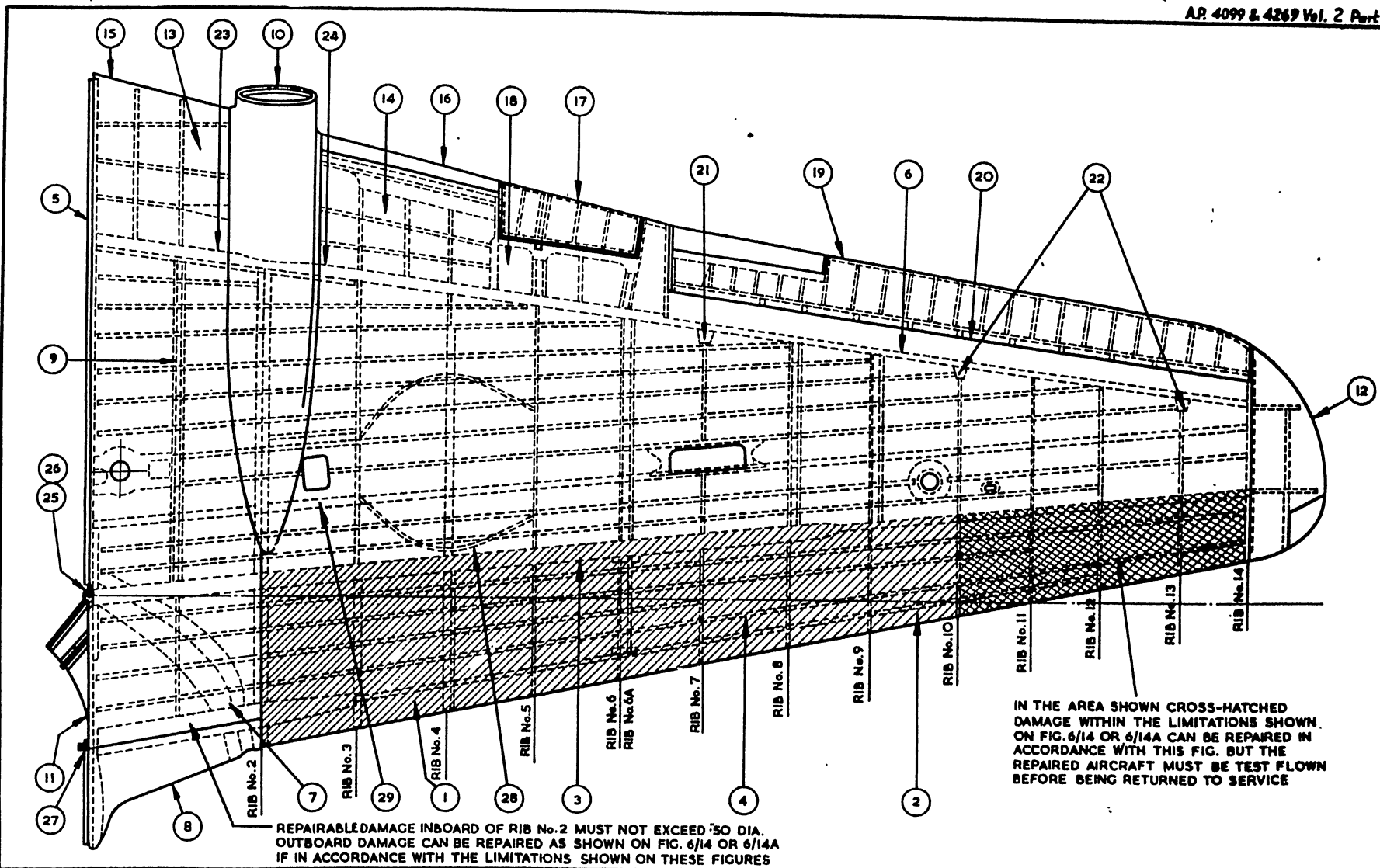


FIG.6/1

MAINPLANE DIAGRAM

FIG.6/1

RESTRICTED

MAIN PLANE (Mk. 5 and 20)
Key to Items shown on Fig. No. 6/1A

Assembly D.005031-2

Key No.	Part No.		Description	Fig. No.
	Port	Starboard		
1	D.003503	D.003504	Top skin	6/7
2	D.003505	D.003506	Bottom skin	6/8
3	D.003677	D.003678	Main spar	6/2
4	D.003507	D.003508	Arrangement of stringers	
5	D.00699	D.00900	Assembly of rib No. 1	6/18
6	D.003679	D.003680	False spar	6/3
7	D.007	D.008	Arrangement of air supply in wing	
8	D.001027	D.001028	Assembly of air duct in wing	6/32
9	D.004339	D.004340	Assembly of tank arch	6/17
10	D.001973	D.001974	Assembly of stub boom to wing	6/52
11	D.003999	D.004000	Assembly of stub plane L.E.	
12	D.006537	D.006538	Wing tip	6/53A
13	D.005080	D.005081	Inboard flap	6/43A
14	D.005082	D.005083	Outboard flap	6/45A
15	D.004121A	D.004122A	Inboard flap shroud	6/44A
16	D.001951	D.001952	Outboard flap shroud	6/47
17	D.005041	D.005042	Dive brake flap	6/48A
18	D.003933	D.003934	Dive brake shroud	6/49
19	D.006657	D.006658	Aileron	6/38A
20	D.003459	D.003460	Aileron shroud	6/42
21	D.001821	D.001822	Aileron inboard hinge and control pulley	
22	D.001387	D.001388	Aileron outboard hinges	
23	D.001763	D.001764	Flap hinge inboard side of boom	
24	D.001765	D.001766	Flap hinge outboard side of boom	
25	D.001185	D.001186	Wing joint "A"	
26	D.001187	D.001188	Wing joint "B"	
27	D.00825	D.00826	Wing joint "C"	
28	D.003709	D.003710	Wheel well in wing	} 6/33
29	D.005195	D.005196	U.C. diaphragms in wing	

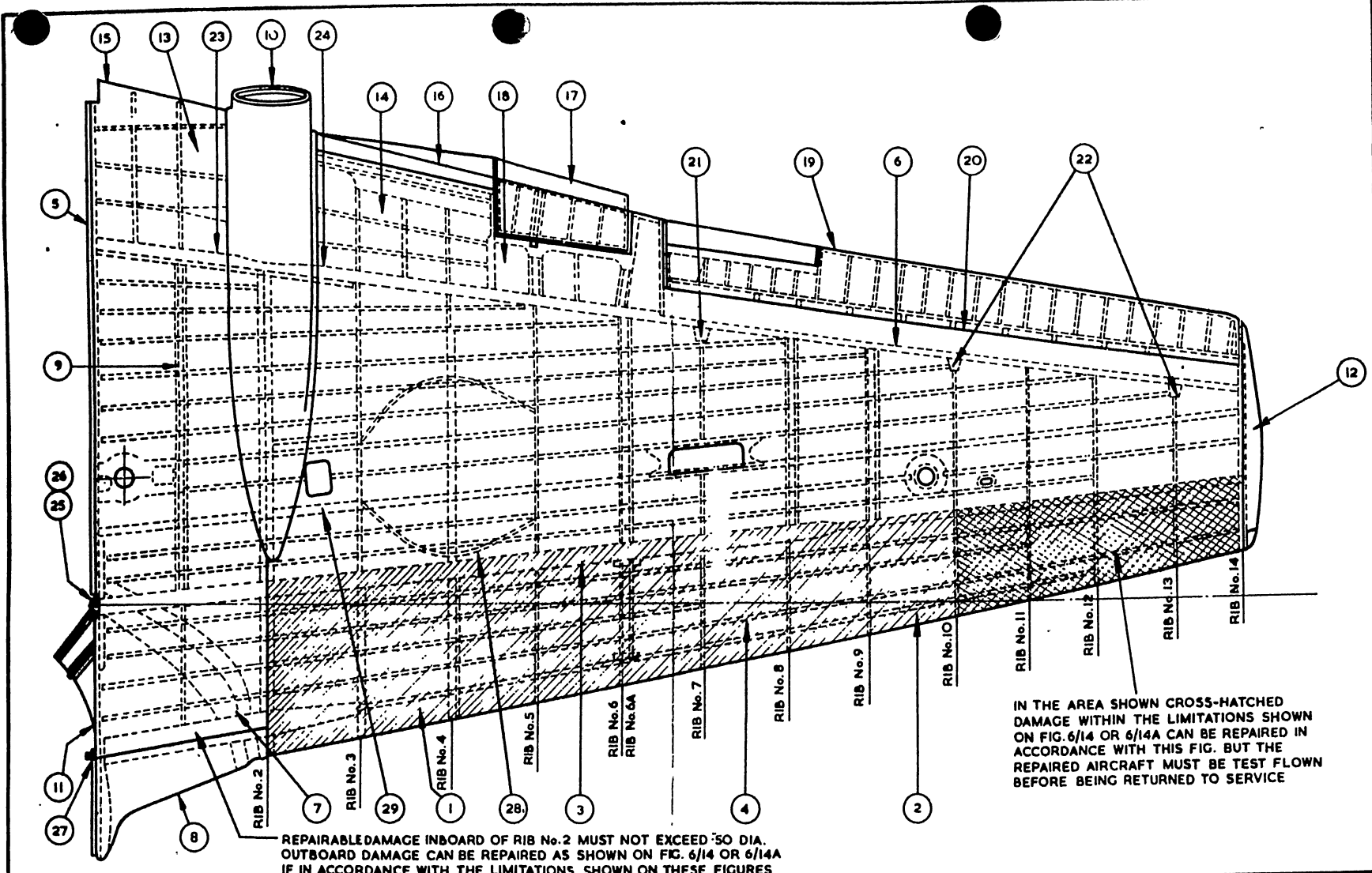


FIG.6/1A

MAINPLANE DIAGRAM

FIG.6/1A

RESTRICTED

MAIN PLANE SPAR

Key to items shown on Fig. No. 6/2

Assembly D.003677-8

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001911	D.001912	Aluminium alloy	D.T.D.364	—	Top boom
2	D.001913	D.001914			—	Bottom boom
3	D.004067ND	D.004068ND			12	Inner section
4	D.004069ND	D.004070ND			14	Middle section
5	D.004071ND	D.004072ND			14	Outer section
6	D.004073ND		Alclad	D.T.D.390	12	Reinforcing plate
7	D.004077ND				18	Reinforcing plate
8	D.004075ND	D.004076ND			14	Joint plate bottom
9	D.002717ND	D.002718ND	14	Joint plate top		
10	D.00393ND	D.00393ND	Aluminium alloy	L.40	—	Stiffener
11	D.00394ND	D.00394ND				
12	D.00395ND	D.00395ND				
13	D.00396ND	D.00396ND				
14	D.00397ND	D.00397ND				
15	D.00398ND	D.00398ND				
16	D.001943ND	D.001943ND				
17	D.001944ND	D.001944ND				
18	D.001945ND	D.001945ND				
19	D.001946ND	D.001946ND				
20	D.004313A		Alclad	D.T.D.390	16	Angle
21	D.004314A		Alclad	D.T.D.390	16	Angle

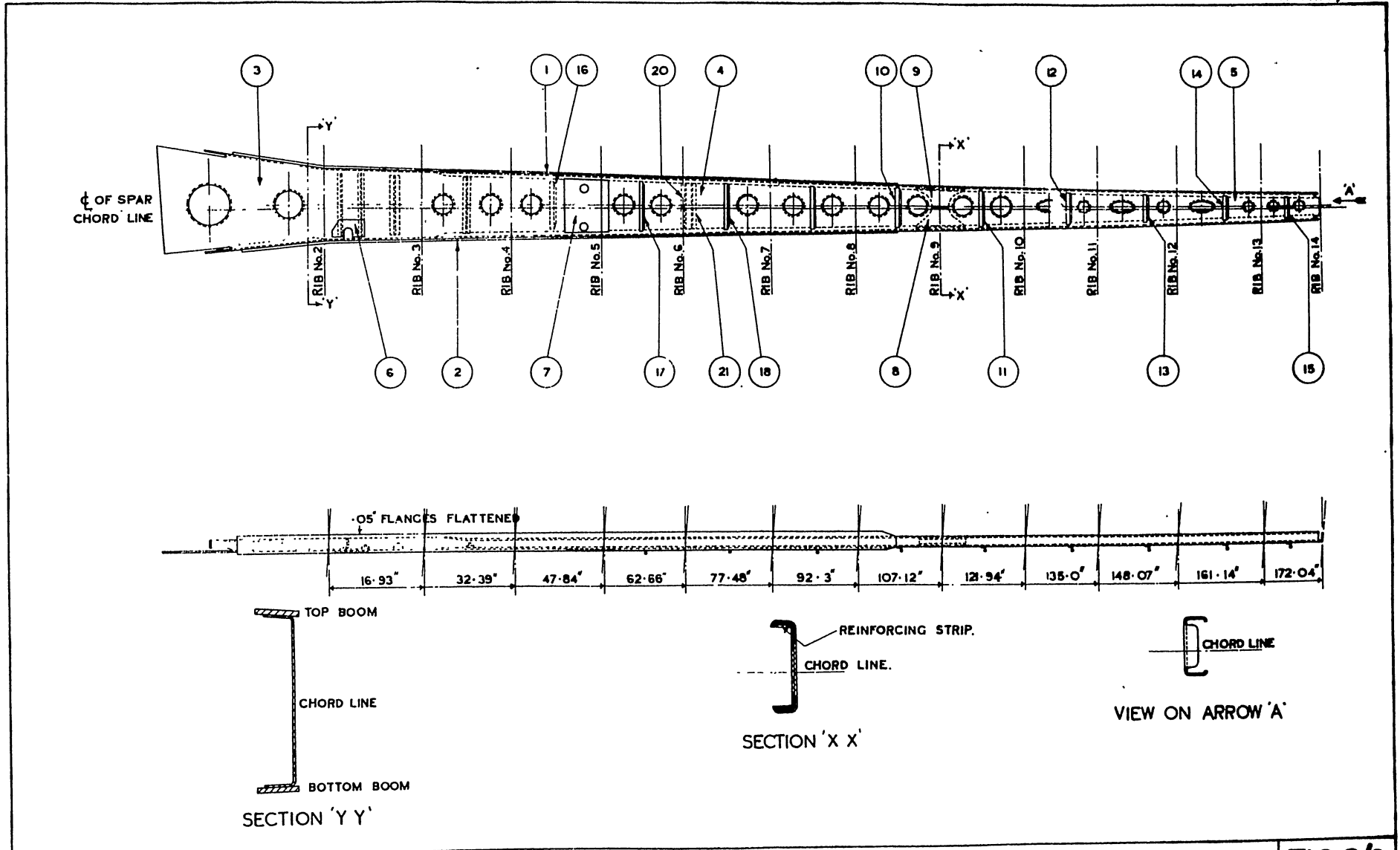


FIG. 6/2

MAIN SPAR - MAINPLANE

FIG. 6/2

FALSE SPAR MEMBER
Key to items shown in Fig. No. 6/3

Assembly D.003679-80

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	L.H.	R.H.					
1	D.00205ND	D.00206ND	Alclad	D.T.D.390	18	Spar—inboard portion	
2	D.004213ND	D.004214ND			16	Spar—inner centre portion	
3	D.00209ND	D.00210ND	Alclad	D.T.D.390	18	Spar—outer centre portion	
4	D.00211ND	D.00212ND			18	Spar—outboard portion	
5	D.00230	D.00230	Alclad	D.T.D.390 or L.38	16	Joint plate	
6	D.00229	D.00228			16	Bottom stiffening angle	
7	D.00609ND	D.00609ND			16	Packing	
8	D.00231	D.00232			16	Top stiffening angle	
9	D.00671	D.00672	Mag. alum. or copper alum. alloy	D.T.D.300 or D.T.D.298	14	Stiffener	
10	D.0093	D.0093			Casting	Hinge bracket	
11	D.002940ND	D.002940ND	Alclad	D.T.D.390 or L.38	12	Reinforcing plate	
12	D002941	D002941			Mag. alum. or copper alum. alloy	D.T.D.300 or D.T.D.298	Casting
13	D.00699ND	D.00699ND	Hinge bracket				
14	D.00699ND	D.00699ND					
15	D.0094	D.0094	Alclad	D.T.D.390	18	Stiffener (Reynolds A.1154)	
16	D.00697ND	D.00697ND			18	Stiffening bracket	
17	D.00225	D.00224	Alclad	D.T.D.390	18	Stiffening bracket—	
18	D.00227B	D.00226B			18	assembled on D.00226-7A	
19	D.00607	D.00608	Alclad	D.T.D.390 or L.38	18	Joint angle	
20	D.00605	D.00606			26	Angle for packing	
21	D.00233	D.00234	Alclad	D.T.D.390 or L.38	18	Joint angle	
22	D.00237	D.00238			26	Angle for packing	
23	D.001755B	D.001755B	M.S. plate	S.3 or D.T.D.124A (Soft)	18	Inboard angle	
24	D.001755C	D.001755C			18	Outboard angle	
25	D.001755D	D.001755D	Alclad	D.T.D.390 or L.38	18	Channel—top	
26	D.001755E	D.001755E			18	Channel—bottom	
27	D.002767	D.002768	Fabric reinforced Bakelite	F.2949	18	Reinforcing angle	
28	D.001287	D.001287			—	Locating pad	
29	D.001601	D.001601	Aluminium copper	D.T.D.304	Casting	Main hinge bracket outer flap	
30	D.001043ND	D.001043ND	Alclad	D.T.D.390 or L.38	16	Reinforcing plate	
31	D.001289B	D.001289B			18	Mounting bracket	
32	D.002085	D.002085	Mag. alum. or copper alum. alloy	D.T.D.300 or D.T.D.298	Casting	Hinge bracket	
33	D.00215ND	D.00216ND	Alclad	D.T.D.390 or L.38	18	Joint plate	
34	D.00217ND	D.00218ND			Alclad	D.T.D.390 or L.38	14
35	D.003723	D.003724	Support bracket				
36	D.004133	D.004134					
37	D.004135	D.004136					
38	D.004137	D.004138					
39	D.004139	D.004140					
40	D.004141	D.004142					
41	D.004144	D.004144					

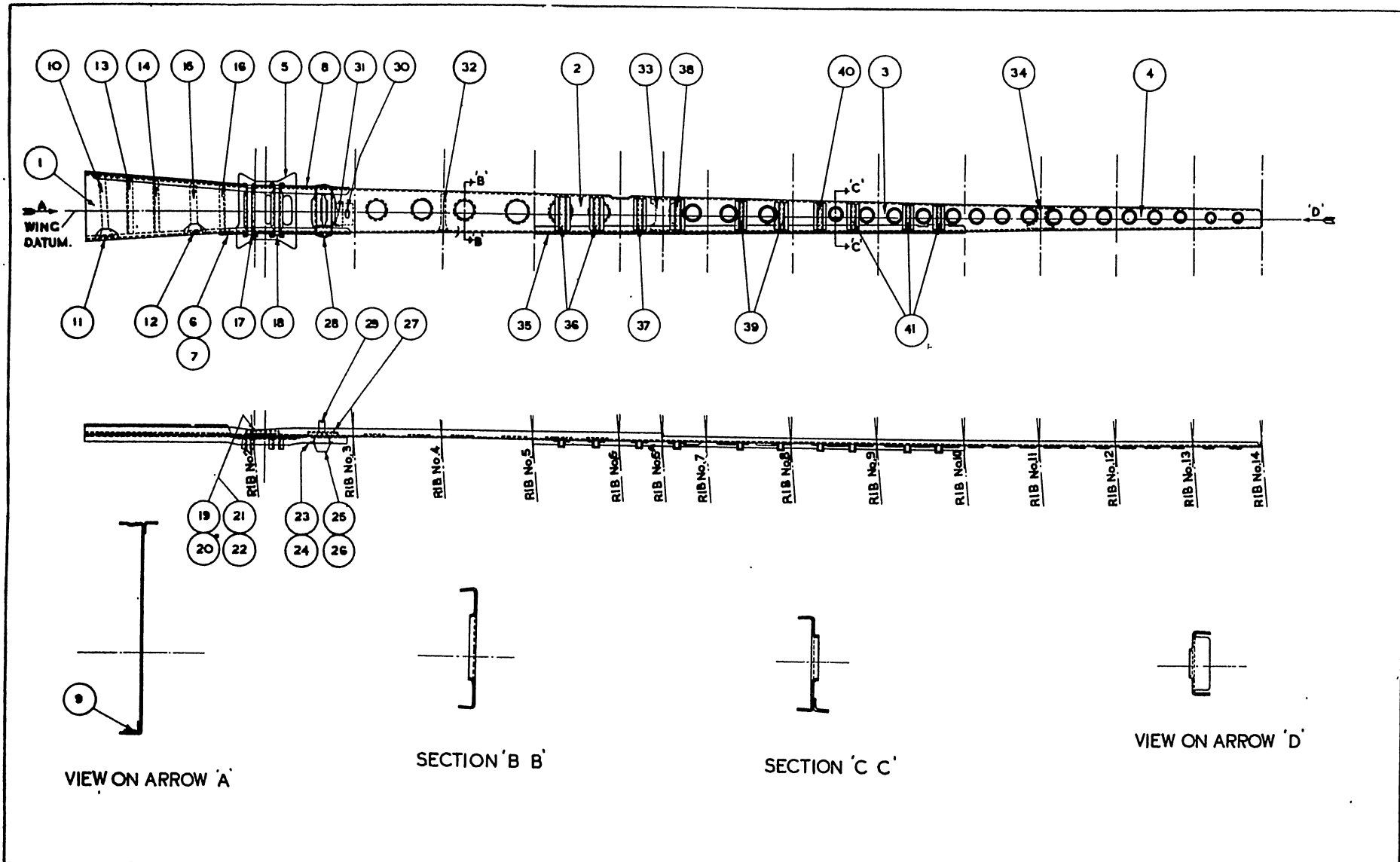


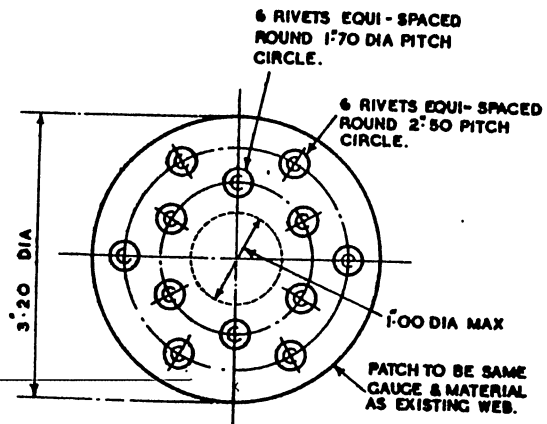
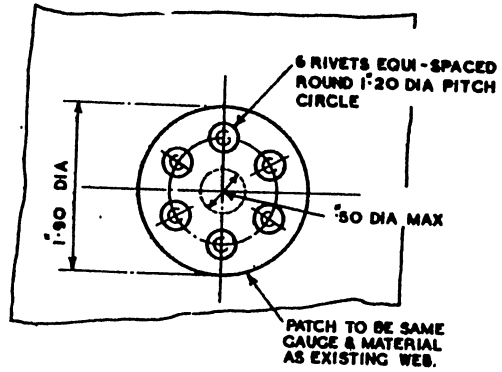
FIG.6/3

FALSE SPAR - MAINPLANE

FIG.6/3

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ALL RIVETS TO BE $\frac{9}{32}$ DIA SNAP HEADS A.S. 2227.

FIG 6/4

MAIN PLANE.
SPAR WEB REPAIRS.

FIG 6/4

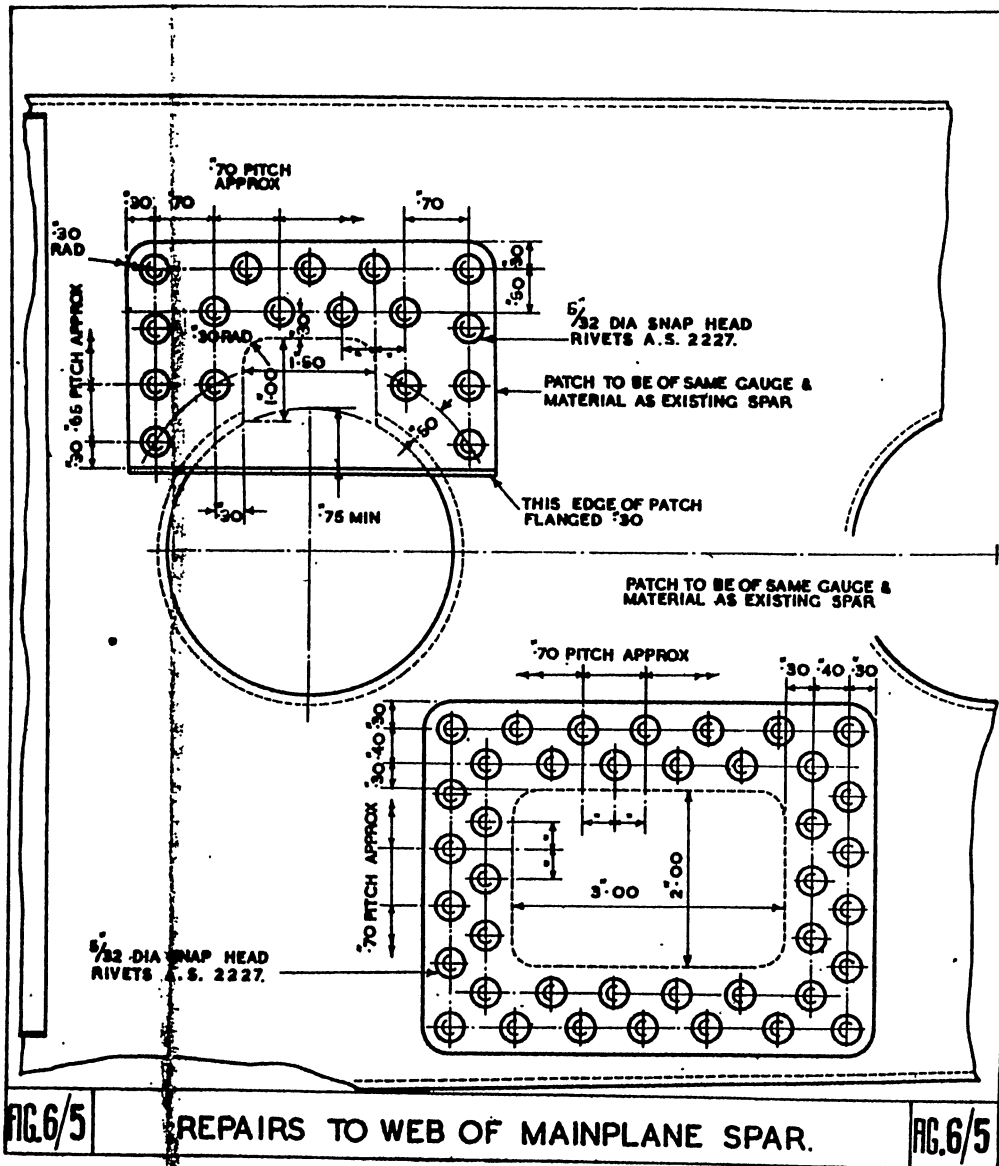
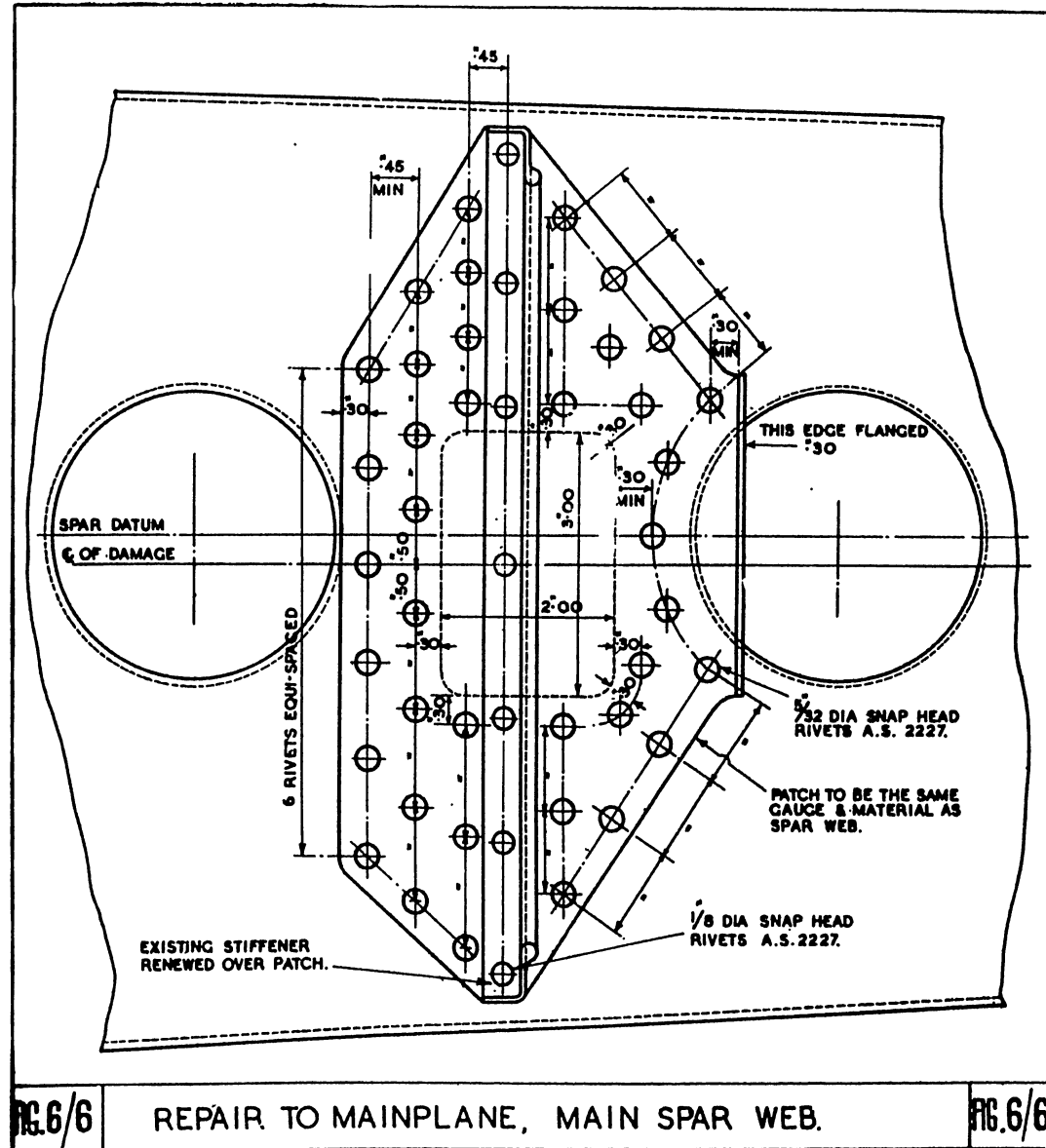


FIG. 6/5

REPAIRS TO WEB OF MAINPLANE SPAR.

FIG. 6/5



MAIN PLANE—TOP SKIN

Key to items shown on fig. No. 6/7

Assembly D.003505-6

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.002481ND	D.002482ND	Alclad	D.T.D.390	16	Inboard front skin panel
2	D.004710ND	D.004711ND			16	Inboard rear skin panel
3	D.003811ND	D.003812ND			18	Front skin panel
4	D.003819ND	D.003820ND			18	Rear skin panel
5	D.002719ND	D.002720ND	Reynolds Section A.1154			Stiffener
6	D. 02721ND	D.002722ND				Stiffener
7	D.001947ND	D.001948ND			16	Reinforcing plate
8	D.001937				18	Cover plate
9	D.00701ND	D.00702ND			16	Top butt strap
10	D.00812ND	D.00813ND			16	Joint strap
11	D.003809ND	D.003810ND			16	Reinforcing strip
12	D.004649ND		Alclad	D.T.D.390	14	Doubling plate
13	D.004651ND				16	Door panel
14	D.003407ND	D.003408ND			18	Doubling plate
15	D.003829ND				20	Packing ring
16	D.003783ND				18	Doubling plate
17	D.003782ND				18	Access door
18	D.001359		Steel	D.H.A.28 or S.3	20	Cover plate
19	D.003983ND	D.003984ND	Alclad	D.T.D.390	18	L.E. strap plate

Assembled on D.001931-2

Assembled on D.004287A

Assembled on D.003815-6

Assembled on D.003781A

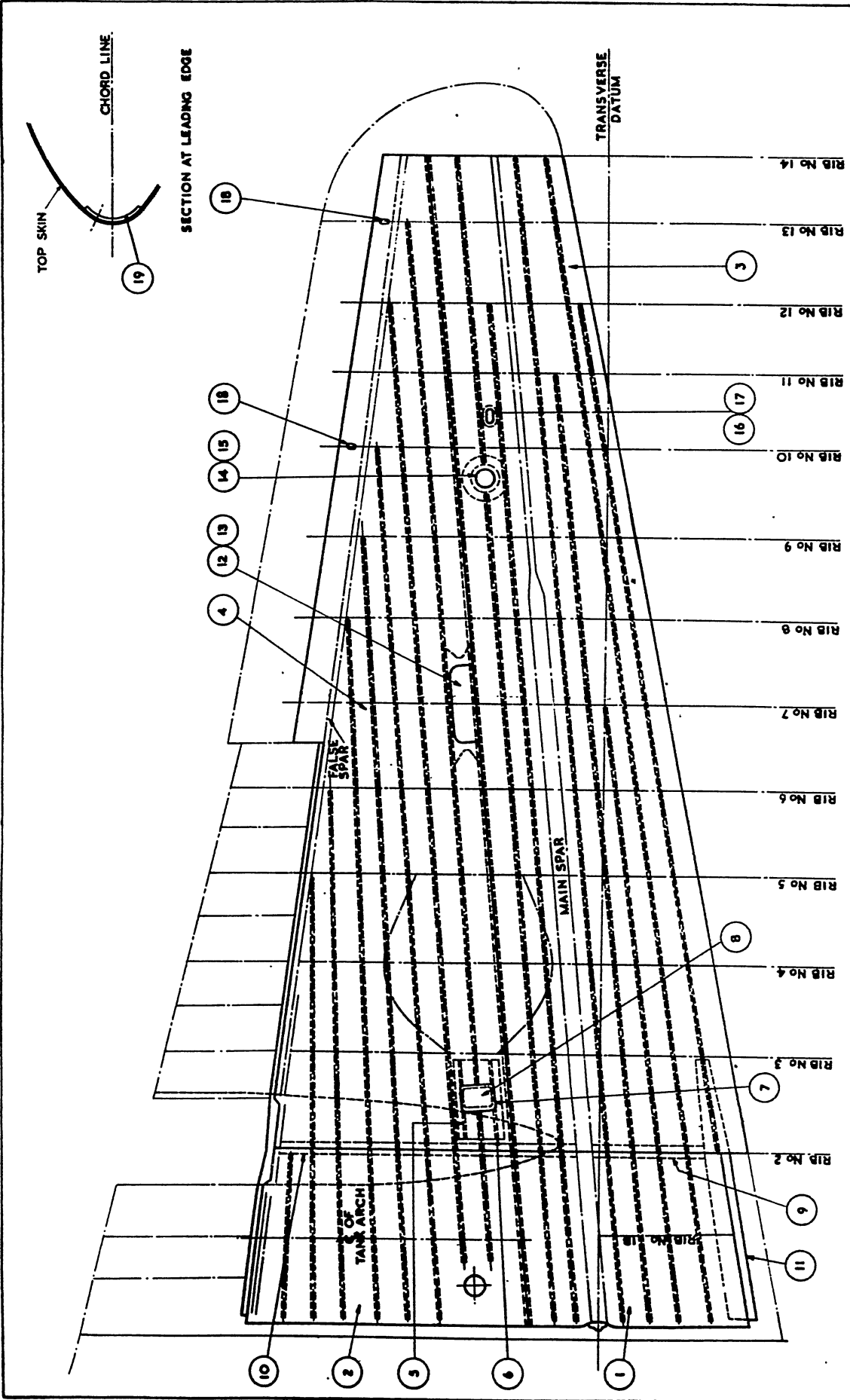


FIG.6/7

TOP SKIN - MAINPLANE

FIG.6/7

MAIN PLANE—BOTTOM SKIN

Key to items shown on Fig. No. 6/8

Assembly D.003505-6A

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	Port	Starboard					
1	D.003937ND	D.003938ND	Alclad	D.T.D.390	16	Inboard skin panel	
2	D.003921ND	D.003922ND			18	Forward skin panel	
3	D.003923ND	D.003924ND			18	Outboard skin panel	
4	D.003931ND	D.003932ND			18	Rear skin panel	
5	D.003937ND	D.003938ND			16	Intermediate skin panel	
6	D.003929ND	D.003930ND			18	Shroud skin panel	
7	D.004933ND				12	Door—Assembled on D.004925A	
8	D.003657ND	D.003658ND			12	Butt strap	} Assembled on D.003655
9	D.00707ND				16	Cover plate	
10	D.001292				M.S.	S.3 or D.H.A.28	
11	D.003821ND		Alclad	D.T.D.390	18	Cover plate	} Assembled on D.003813A
12	D.003227ND				16	Reinforcing plate	
13	D.003689ND				14	Doubling plate	
14		D.003690ND			14	Doubling plate	} Assembled on D.003725A
15		D.003691ND	18	Access door			
16	D.003519A	D.003520A			—	L.E. channel at ribs 2-5	

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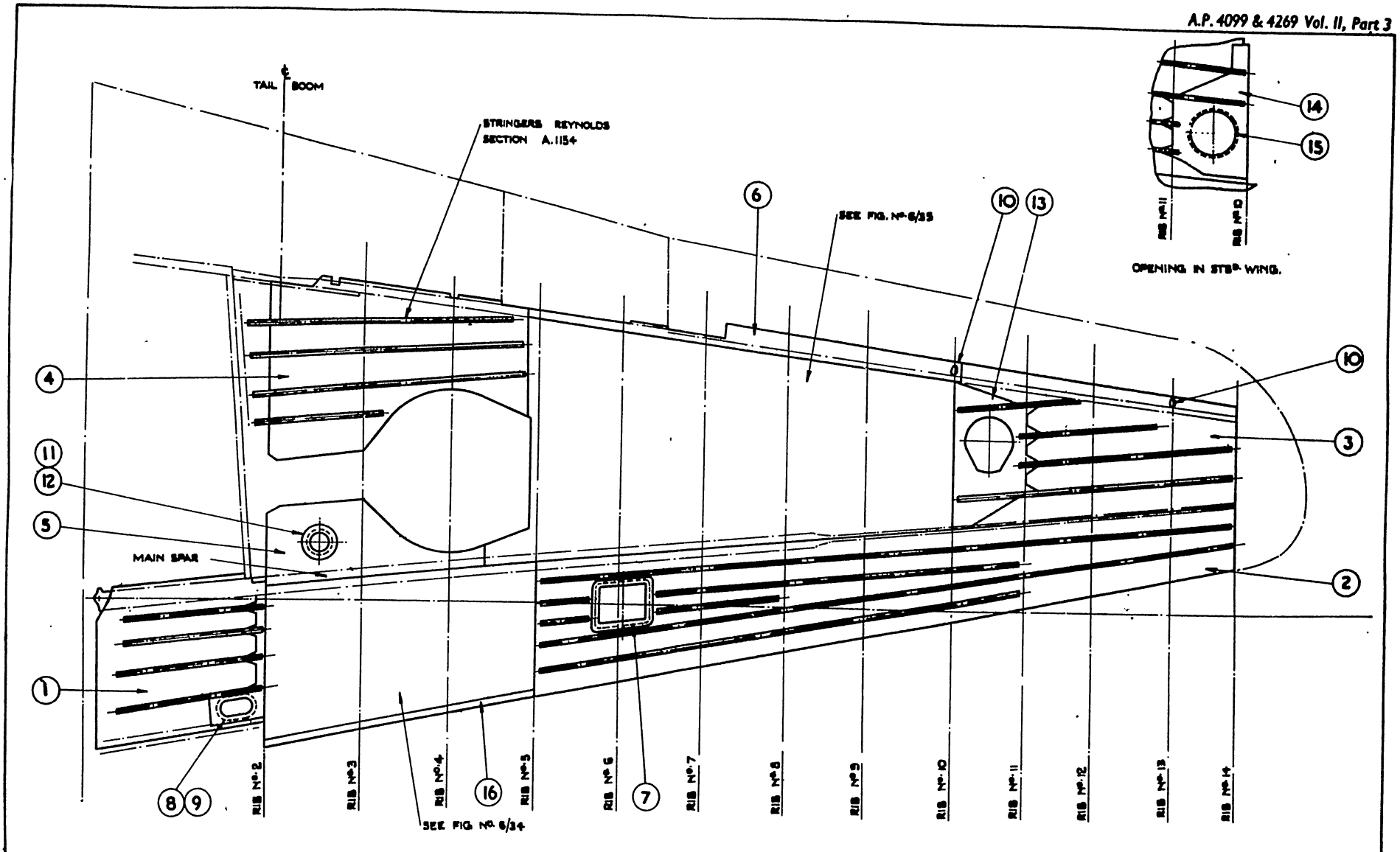
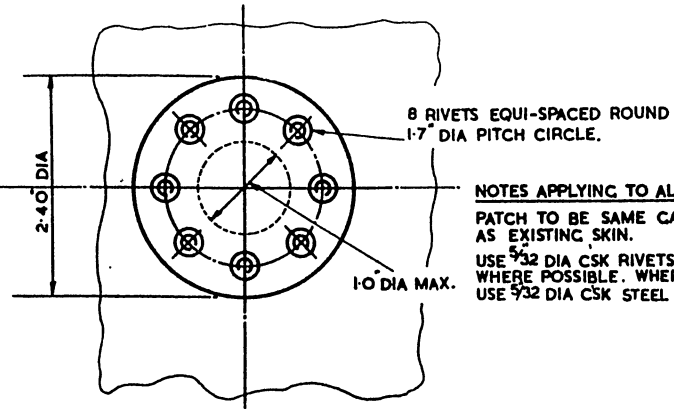
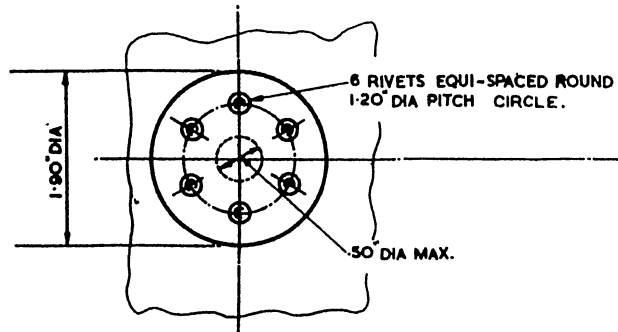


FIG.6/8

BOTTOM SKIN MAIN PLANE.

FIG.6/8



NOTES APPLYING TO ALL REPAIRS.
 PATCH TO BE SAME GAUGE & MATERIAL
 AS EXISTING SKIN.
 USE 3/32 DIA CSK RIVETS A.S.2229 OR A.S.2230.
 WHERE POSSIBLE. WHERE IMPOSSIBLE
 USE 3/32 DIA CSK STEEL CHOBERT RIVETS PINNED.

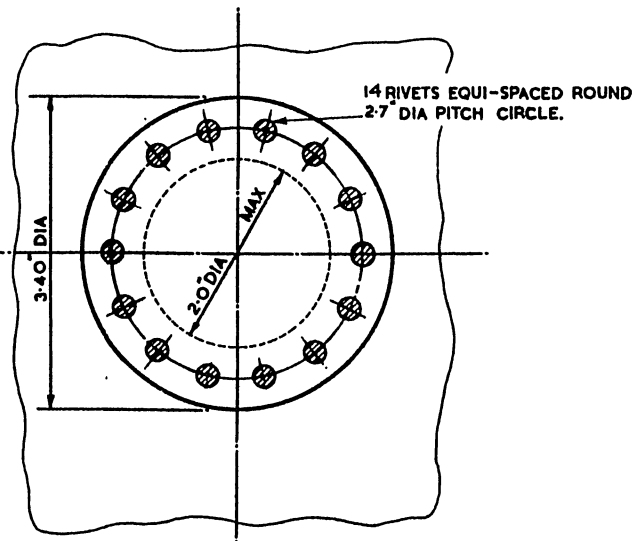
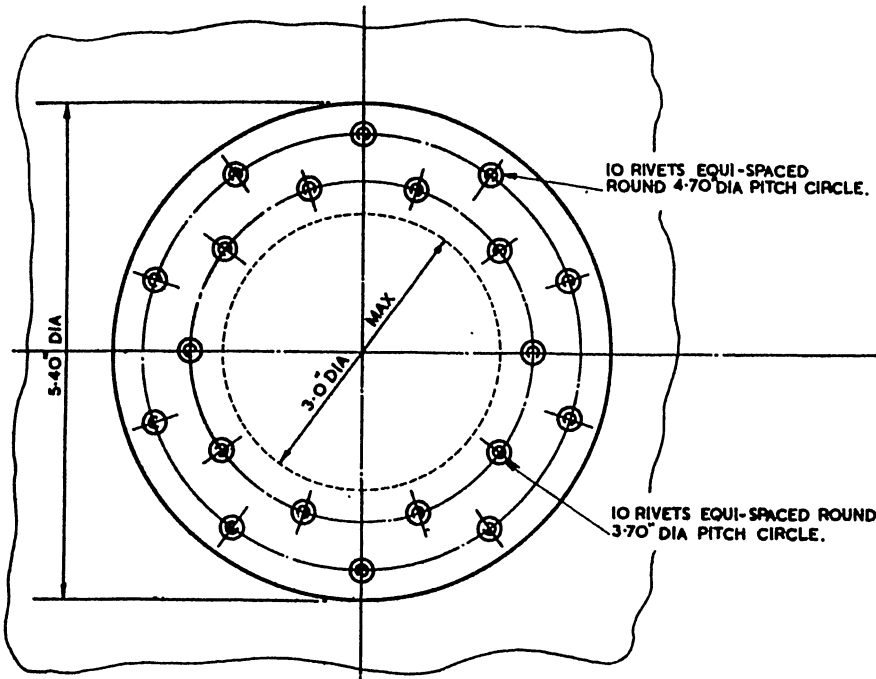
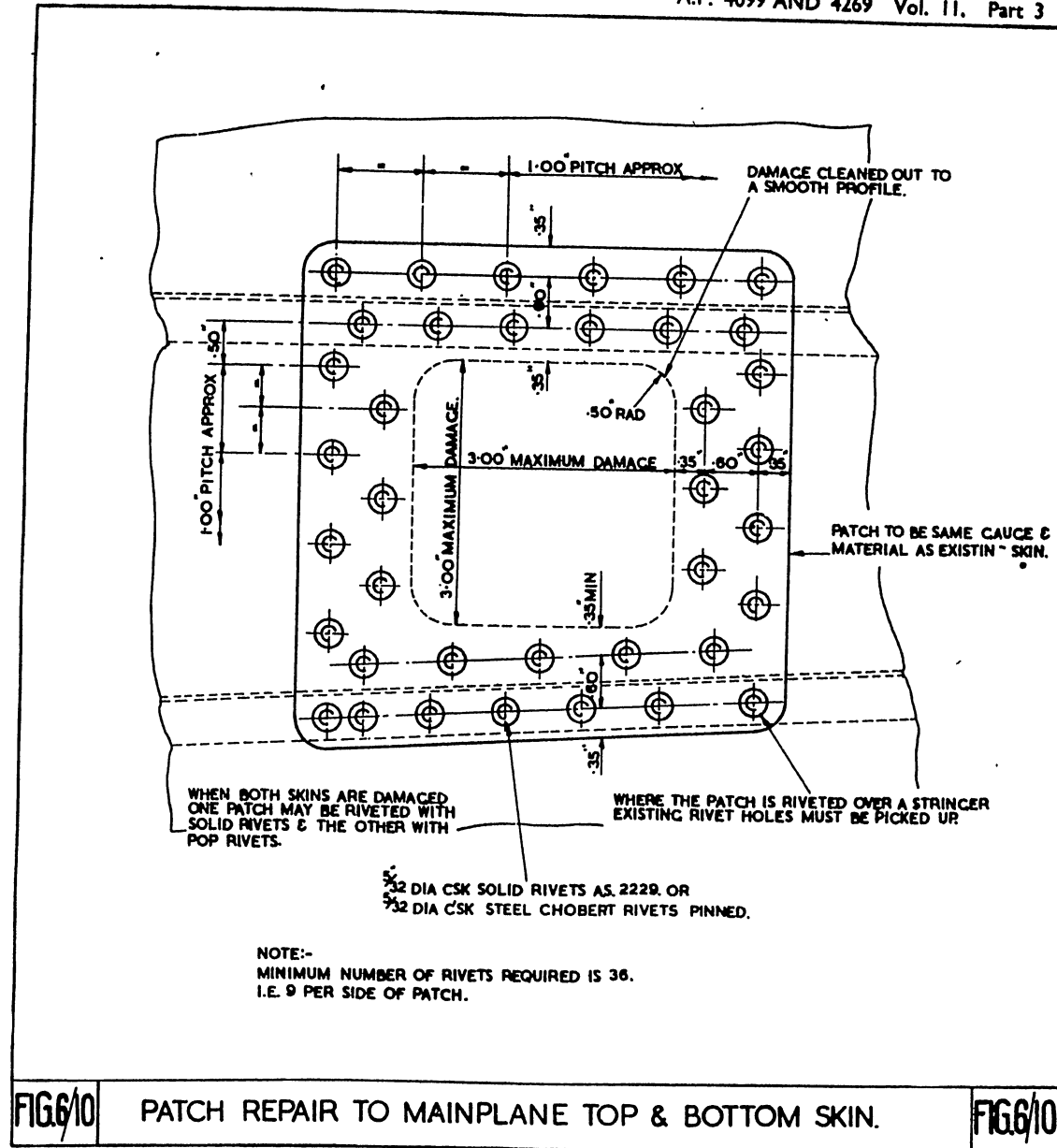
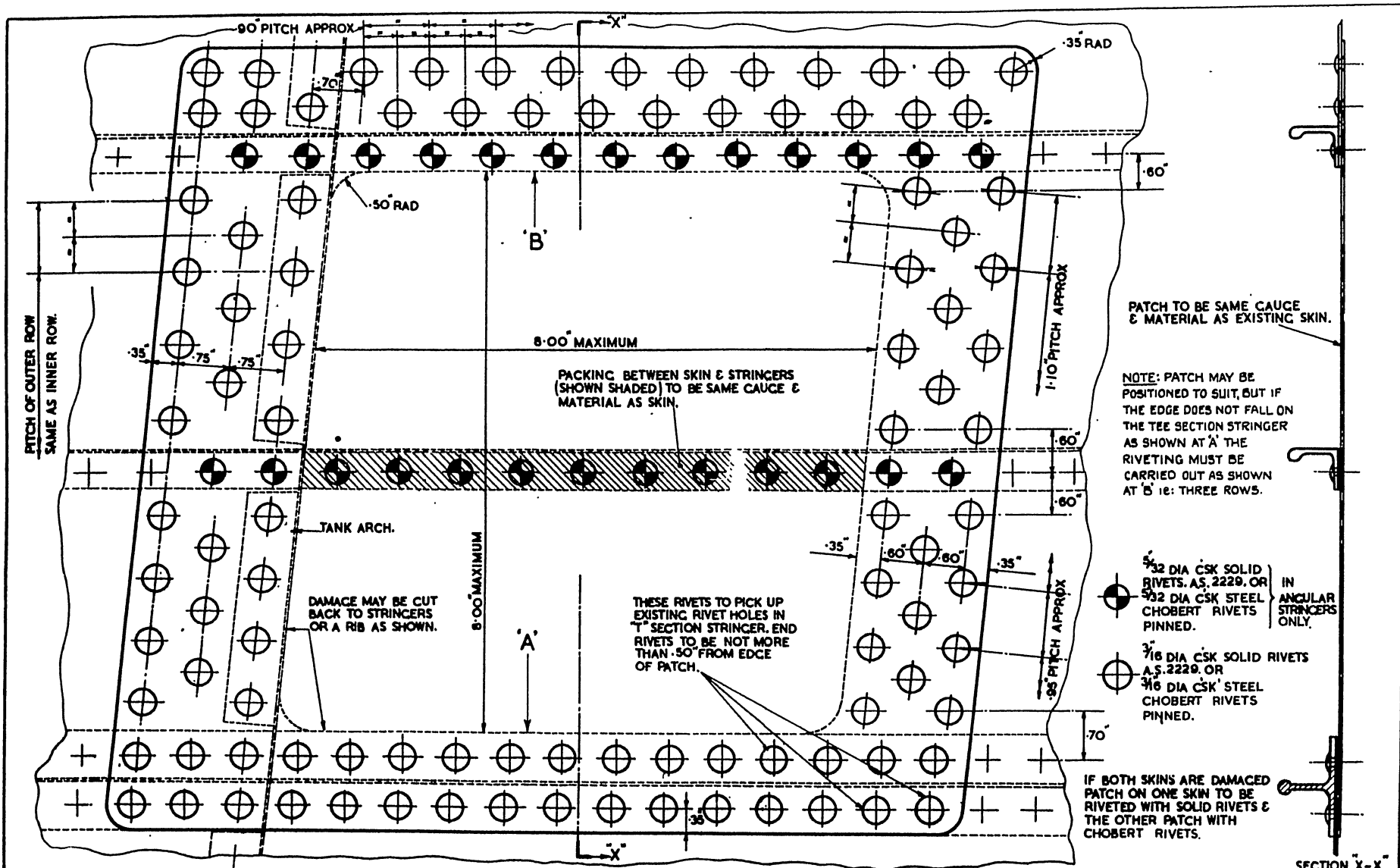


FIG.6/9

PATCH REPAIRS FOR MAINPLANE.

FIG.6/9





PATCH TO BE SAME GAUGE & MATERIAL AS EXISTING SKIN.

NOTE: PATCH MAY BE POSITIONED TO SUIT, BUT IF THE EDGE DOES NOT FALL ON THE TEE SECTION STRINGER AS SHOWN AT 'A' THE RIVETING MUST BE CARRIED OUT AS SHOWN AT 'B' IE: THREE ROWS.

-

IF BOTH SKINS ARE DAMAGED PATCH ON ONE SKIN TO BE RIVETED WITH SOLID RIVETS & THE OTHER PATCH WITH CHOBERT RIVETS.

SECTION X-X'

FIG.6/11

PATCH REPAIR TO 16 SWG SKIN - MAINPLANE BETWEEN RIBS 1 & 2.

FIG.6/11

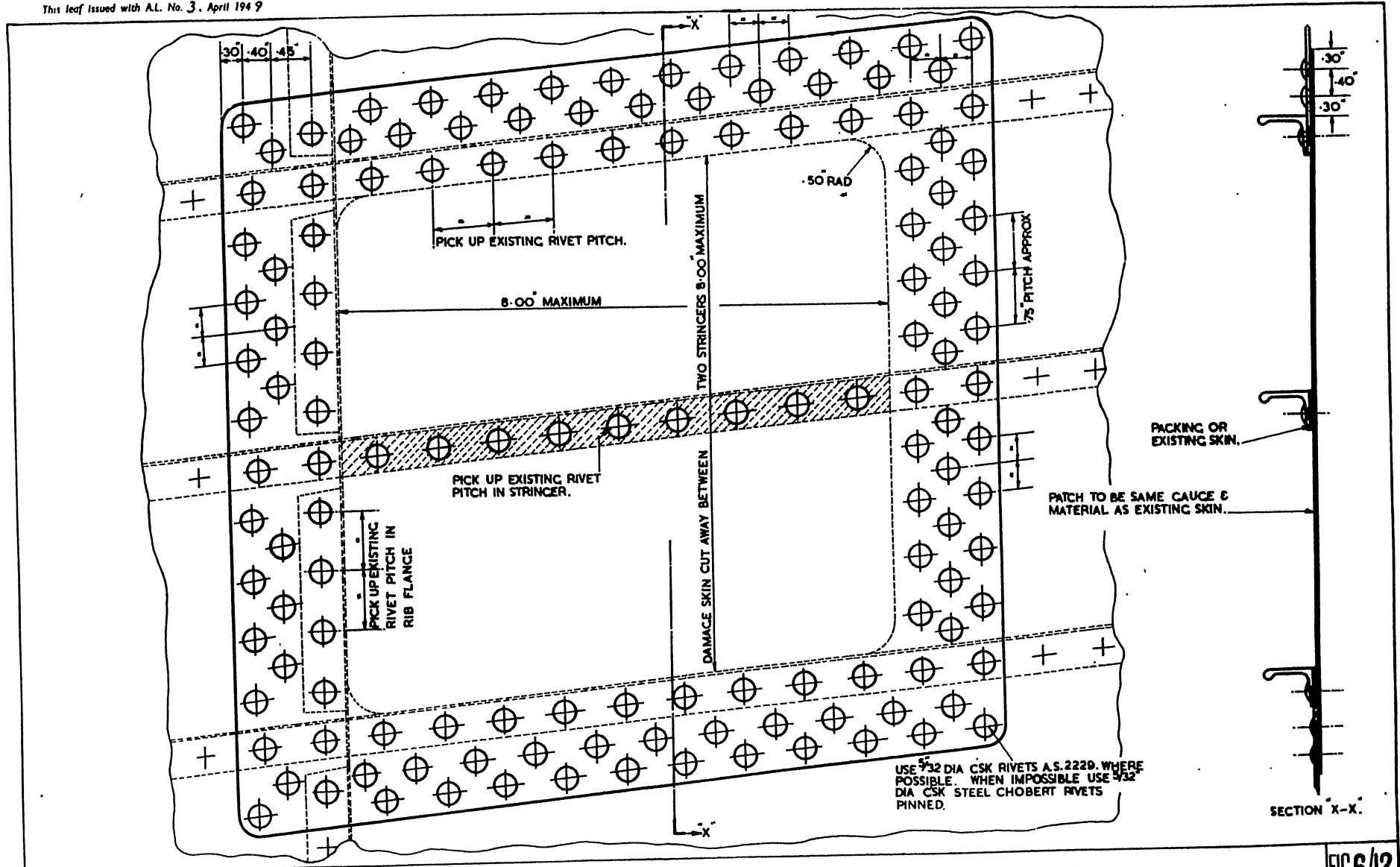


FIG. 6/12

PATCH REPAIR TO MAINPLANE SKINS BETWEEN RIBS 2 & 8.

FIG. 6/12

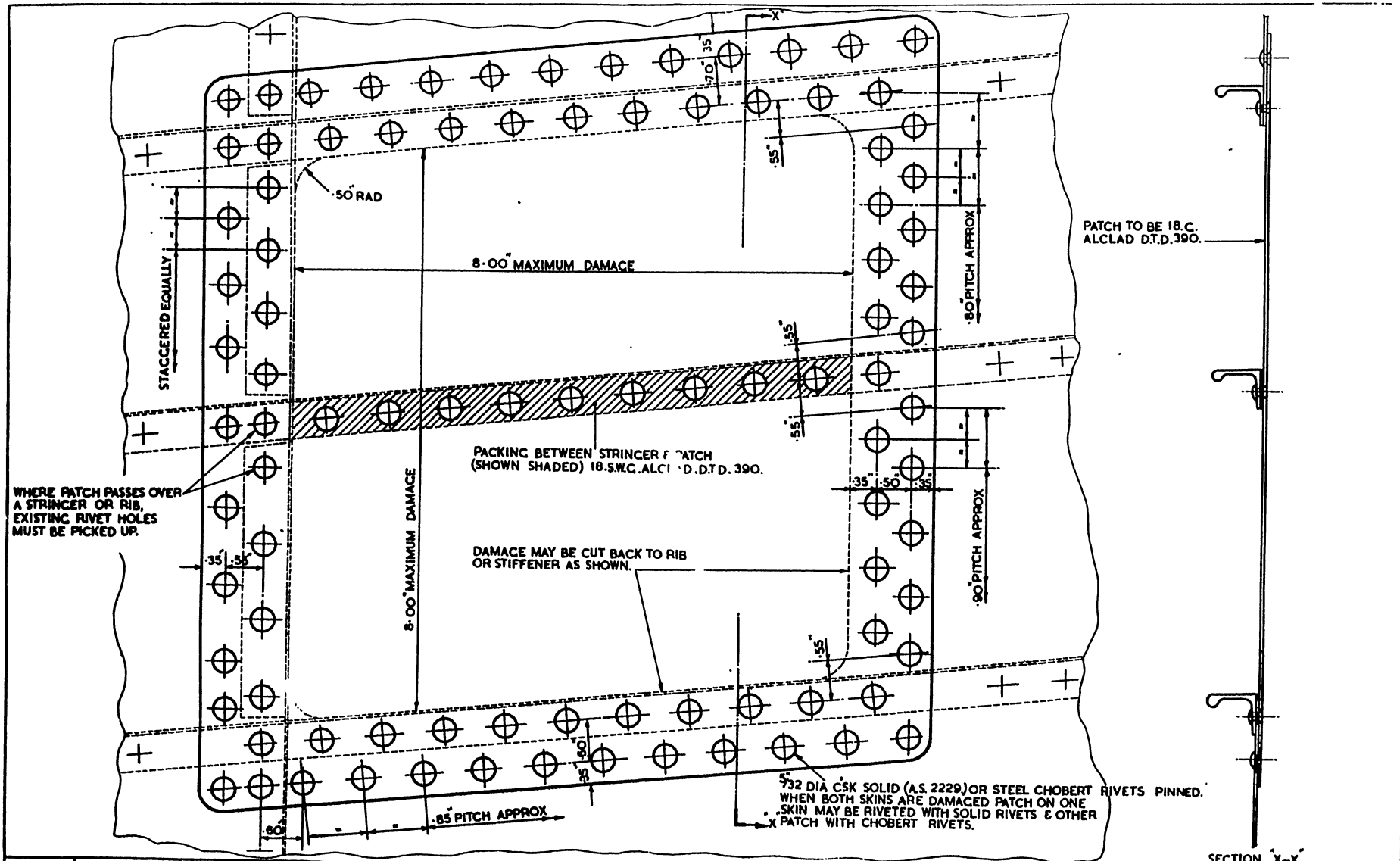
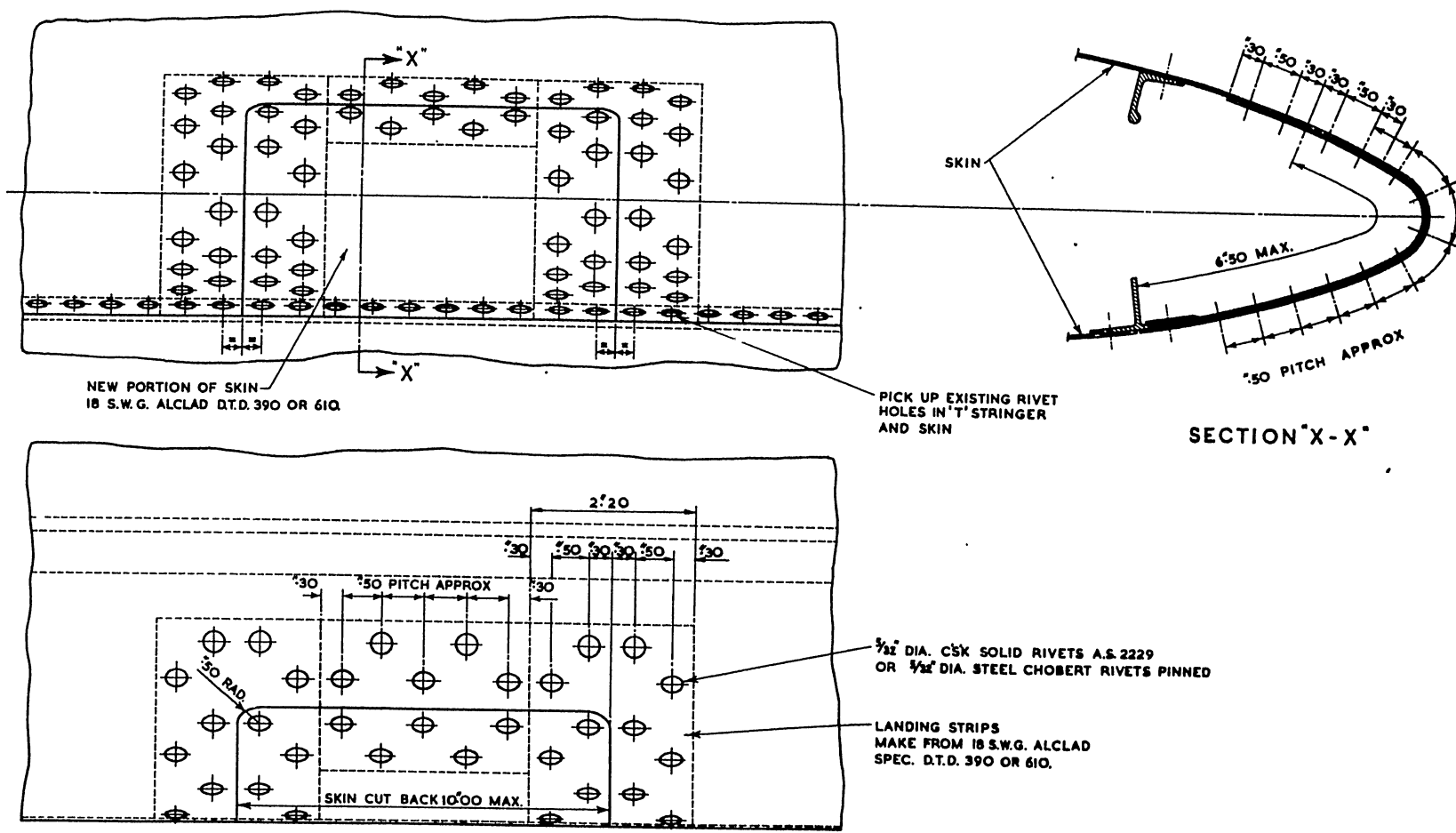


FIG6/13

REPAIR TO MAINPLANE SKIN BETWEEN RIBS 8 & 14

FIG6/13



NEW PORTION OF SKIN-
18 S.W.G. ALCLAD D.T.D. 390 OR 610

PICK UP EXISTING RIVET
HOLES IN 'T' STRINGER
AND SKIN

SECTION 'X-X'

3/16" DIA. CSK SOLID RIVETS A.S. 2229
OR 1/2" DIA. STEEL CHOBERT RIVETS PINNED

LANDING STRIPS
MAKE FROM 18 S.W.G. ALCLAD
SPEC. D.T.D. 390 OR 610.

NOTE
INBOARD OF RIB No.6, 3 ROWS OF RIVETS WILL
BE REQUIRED FOR CHORDWISE RIVETING.

PATCH REPAIR TO MAINPLANE LEADING EDGE SKIN

RESTRICTED

FIG. 6/14

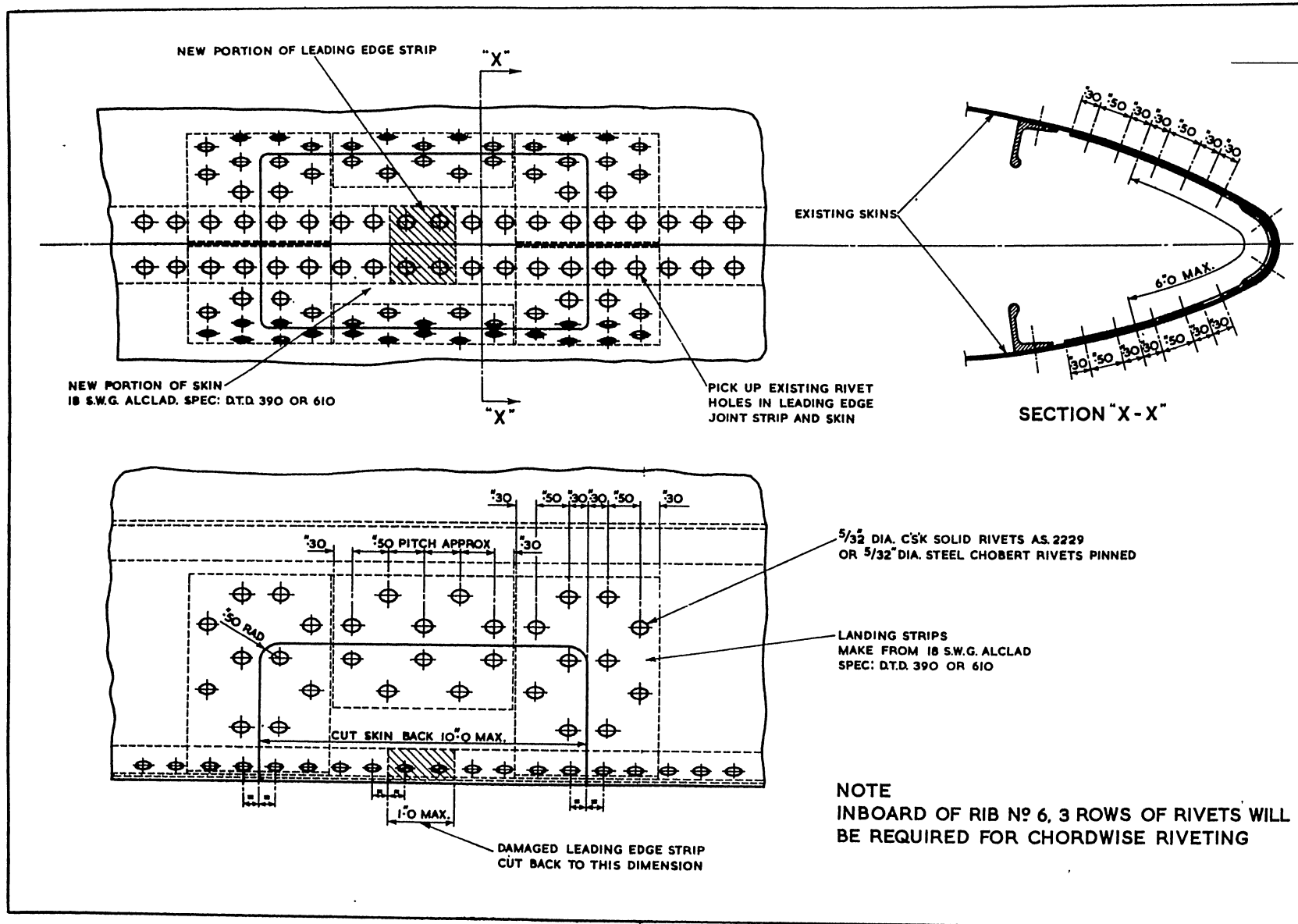


FIG. 6/14A.

PATCH REPAIR TO MAINPLANE LEADING EDGE SKIN.

FIG./14A.

RESTRICTED

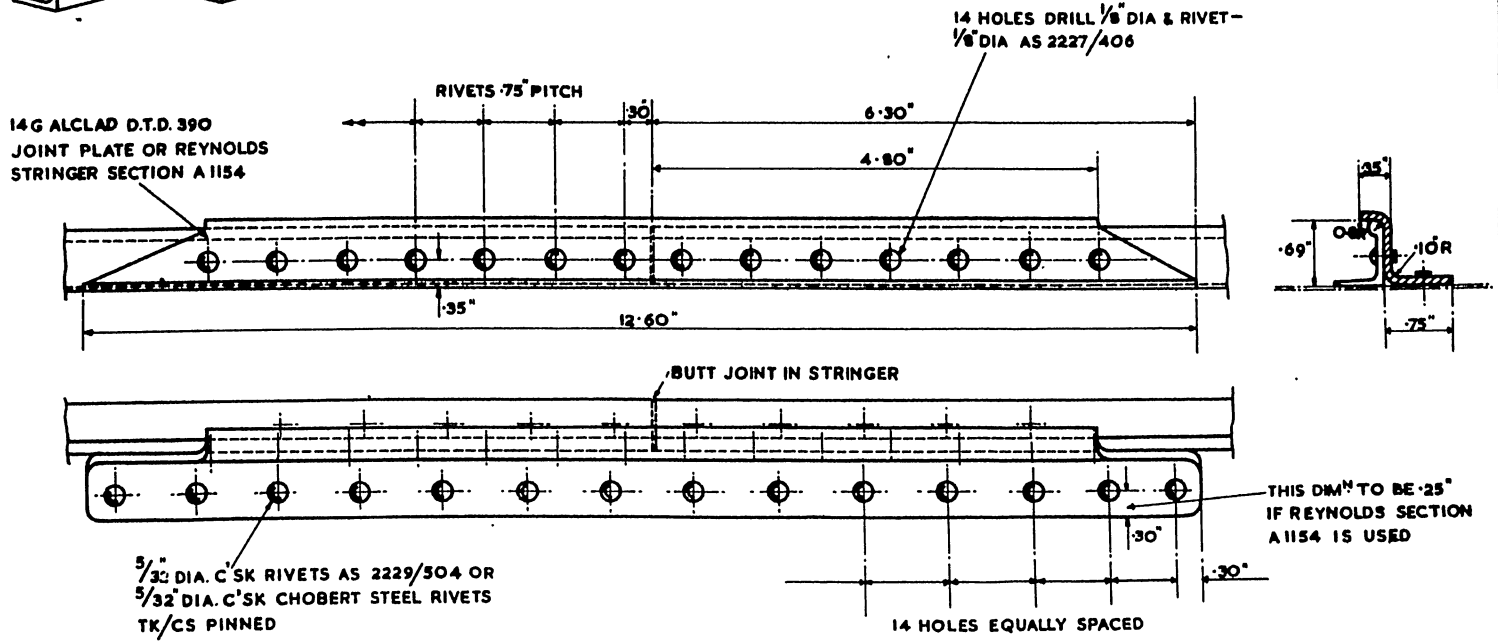
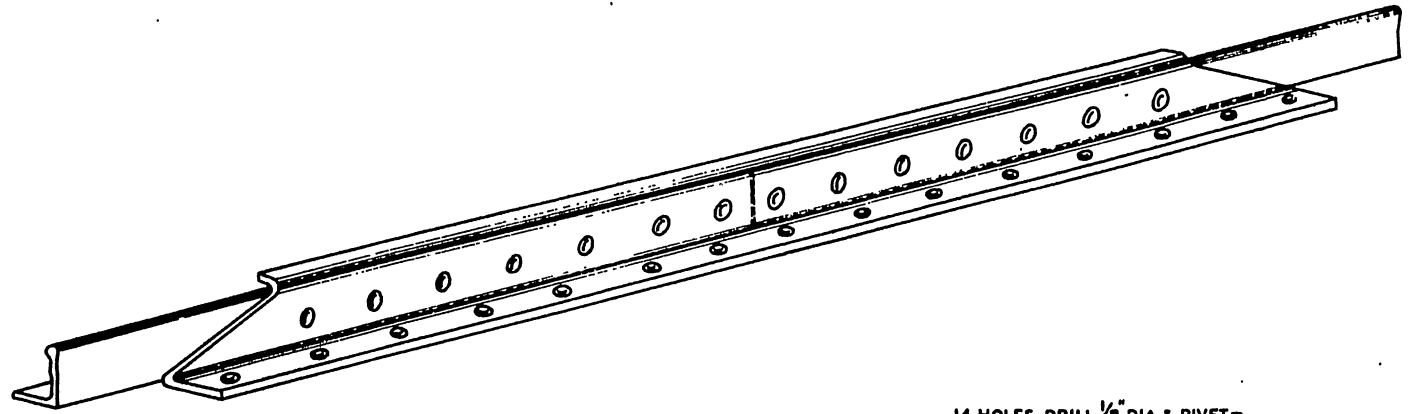
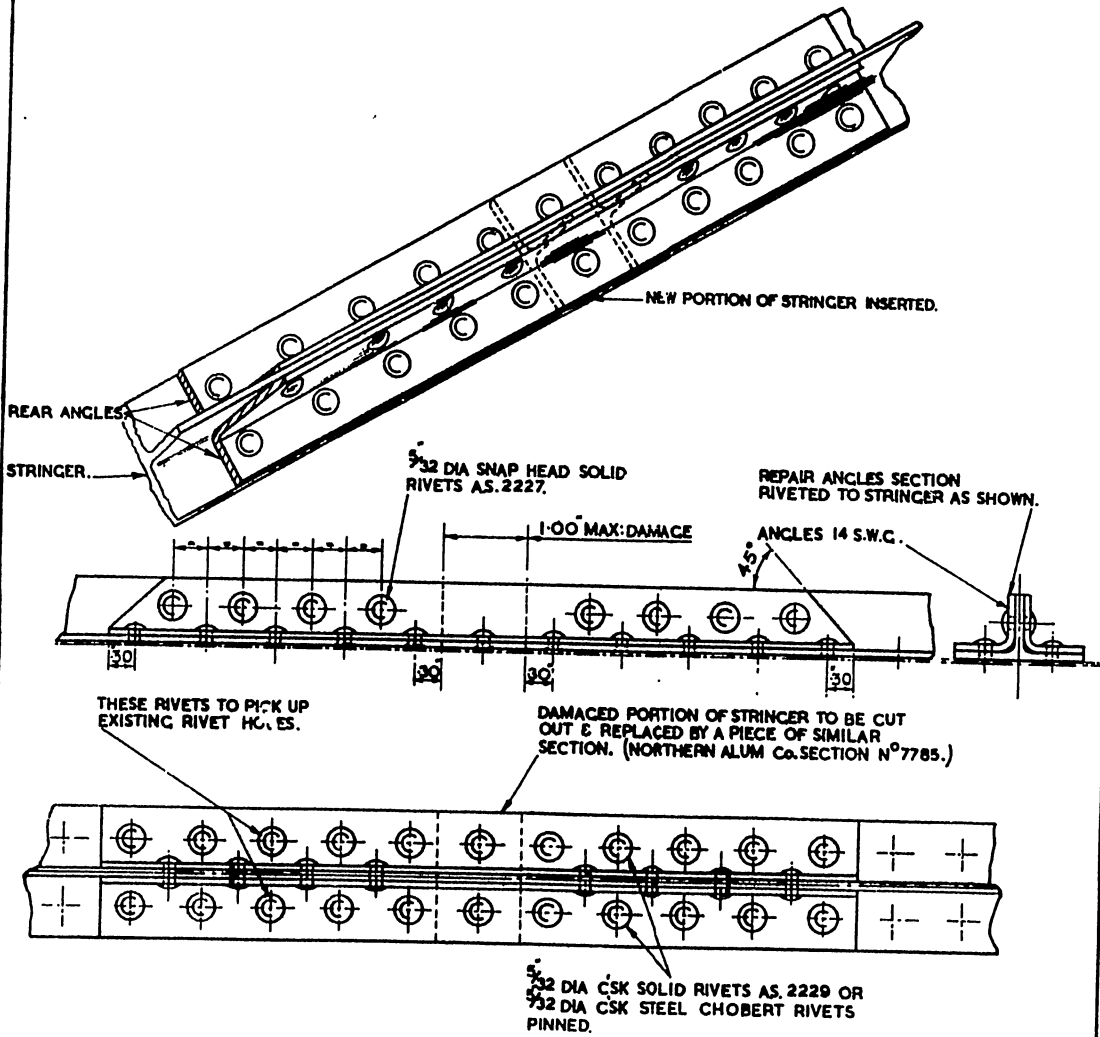


FIG.6/15

REPAIR TO SKIN STRINGERS OF MAINPLANE

FIG.6/15

RESTRICTED



FIGG/16

REPAIR TO SKIN STRINGERS OF MAINPLANE.

FIGG/16

TANK ARCH

Key to Items shown on Fig. No. 6/17

Assembly D.001087-8A

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001007	D.001008	Alclad	D.T.D.390	16	Tank arch
2	D.001010	D.001011			16	Joint plate—inboard
3	D.001012	D.001013			16	Joint plate—outboard
4	D.001081	D.001082			16	Post
5	D.001085	D.001086			16	Joint plate—inboard
6	D.001083	D.001084			16	Joint plate—outboard
7	D.001097	D.001097	Dural	D.T.D.423A or L.I	—	Block

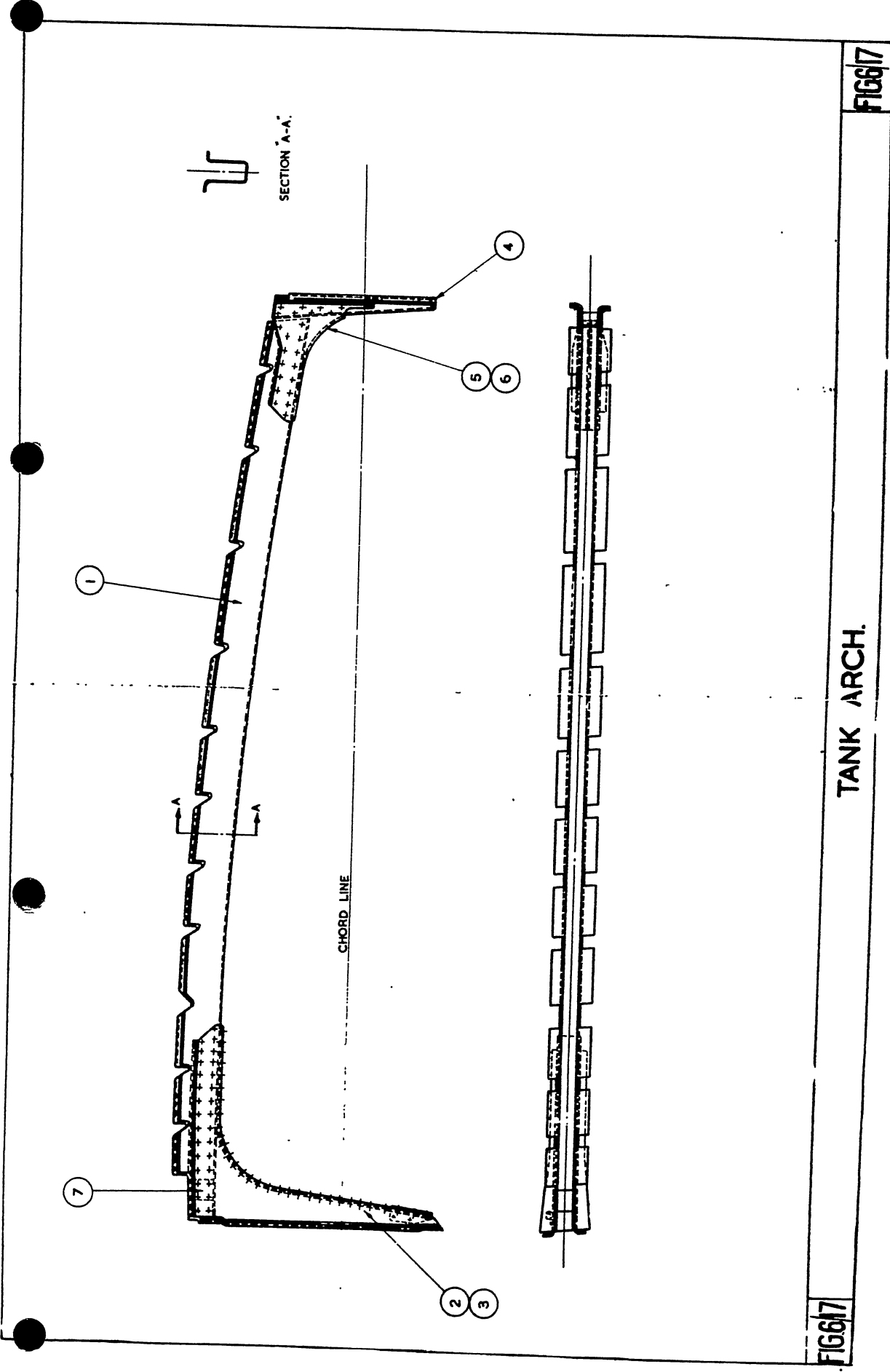


FIG 6/17

TANK ARCH.

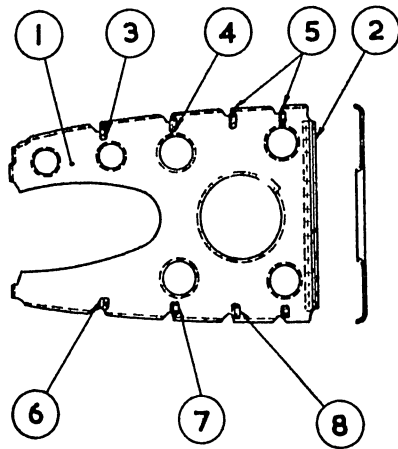
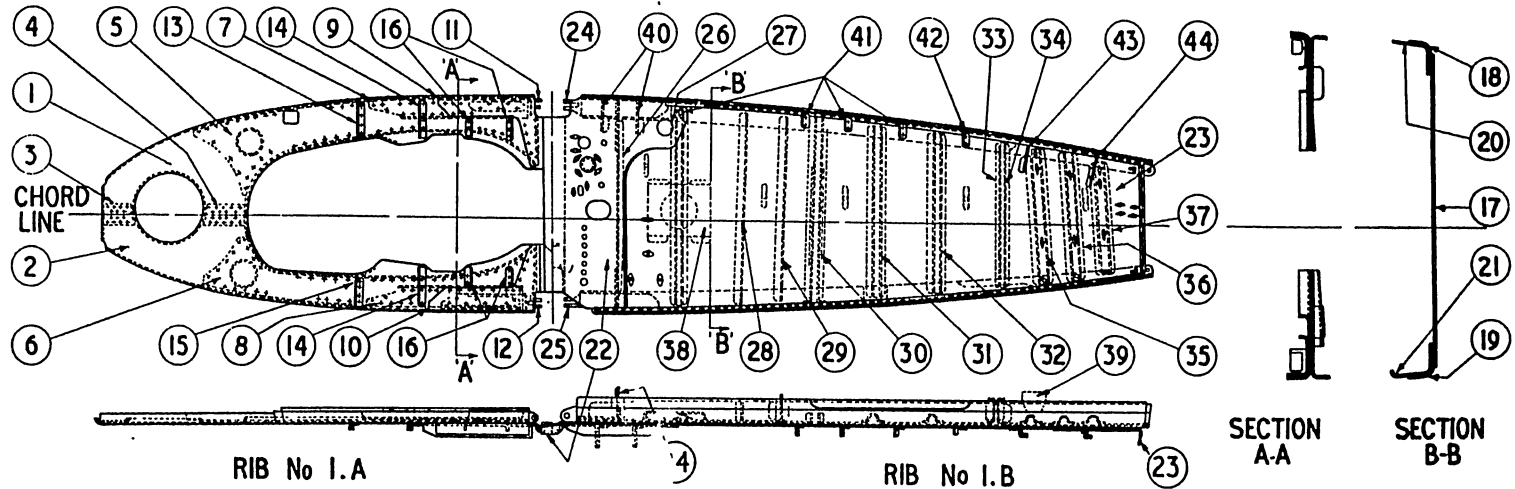
FIG 6/17

WING RIBS NO. I and IA
Key to items shown on Fig. No. 6/18

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
RIB No. I. Assembly D.00899-900						
17	D.001099ND	D.001100ND	Alclad	D.T.D.390	18	Main web
18	D.00891	D.00892			8	Top outer boom
19	D.00895	D.00896			10	Bottom outer boom
20	D.00893	D.00894			12	Top inner boom
21	D.00897	D.00898			12	Bottom inner boom
22	D.002449ND	D.002450ND			16	Attachment plate— assembled on D.001131-2A
23	D.001161	D.001162	Aluminium alloy	L.40 or D.T.D.423A	18	Rear attachment bracket
24	D.004263	D.004264			Bar	Top attachment fitting
25	D.004265	D.004266			Bar	Bottom attachment fitting
26	L.00351	L.00352	Alclad	D.T.D.390 or L.38	16	Front cowl post— Assembled on L.00123-4
27	D.004465	—	M.S. plate	S.3	18	Stiffener
28	L.00353	L.00354	—	—	—	Post—assembled on L.00125-6
29	L.00373	L.00374	Alclad	D.T.D.390	16	Stiffener—assembled on L.00121-2A
30	L.001215	L.001215			18	Post—assembled on L.00371-2
31	D.001122	D.001122			18	Stiffener
32	D.001123	D.001123	18	Stiffener		
33	L.00905ND	L.00906ND	20	Post—assembled on L.00375-6A		
34	L.00907ND	L.00908ND	20	Post—assembled on L.00377-8A		
35	D.002453ND	L.002454	16	Stiffener—assembled on D.001125-6A		
36	D.002455ND	D.002456ND	Alclad	D.T.D.390	16	Stiffener—assembled on D.001129-30A
37	D.002457ND	D.002458ND	14	Stiffener—assembled on D.001133-4A		
38	N.00226A	—	M.S. plate	S.3. or D.H.A.28	22	Bracket
39	—	N.00259	—	—	—	Bracket
40	D.001189	D.001190	Alclad	D.T.D.390 or L.38	20	Stringer bracket
4	D.001181	D.001182	—	—	—	Stringer bracket
42	D.001183	D.001184	—	—	—	Stringer bracket
43	D.001197	D.001198	—	—	—	Stringer bracket
44	D.001199	D.001200	—	—	—	Stringer bracket
RIB No. IA. Assembly D.00851-2A						
1	D.00846ND	D.00847ND	Alclad	D.T.D.390	16	Top frame
2	D.00848ND	D.00849ND			16	Bottom frame
3	D.00845ND	D.00845ND			16	Joint plate
4	D.00843ND	D.00844ND			16	Joint plate
5	D.00831ND	D.00832ND			18	Top boom reinforcing
6	D.00833ND	D.00834ND			18	Bottom boom reinforcing
7	D.00835	D.00836	14	Top channel		
8	D.00837	D.00838	12	Bottom channel		
9	D.001050	D.001051	16	Top bracket		
10	D.001052	D.001053	16	Bottom bracket		
11	D.004259	D.004260	Aluminium alloy	L.40 or D.T.D.423A	Bar	Top joint fitting
12	D.004261	D.004262			Bar	Bottom joint fitting
13	D.00841	D.00841	Alclad	D.T.D.390	18	Stringer bracket
14	D.003473	D.003474			18	Stringer bracket
15	D.00840	D.00840			18	Stringer bracket
16	D.003479	D.003480			18	Stringer bracket

RESTRICTED

Fig. 6/18. Rib No. 1, 1A and 1B



RIB No. 1.B

RIB No. 1B—Assembly D.00723-4

1	D.002475	D.002476	} Alclad D.T.D.390	18	Web
2	D.001232ND	D.001232ND		18	Angle
3	D.00753	D.00754		18	Stringer bracket
4	D.00769	D.00770		18	Stringer bracket
5	D.00757	D.00758		18	Stringer bracket
6	D.00754	D.00753		18	Stringer bracket
7	D.00756	D.00755		18	Stringer bracket
8	D.00758	D.00757		18	Stringer bracket

(ALL22, Dec. 56)

RIB No. 2 (Mk. 5 and subsequent)

Key to items shown in Fig. 6/19

Key No.	Description	Material or Section		Part No.	
		Specification	S.W.G	Port	Starboard
1	Rib pressing	L.72	18	D006699ND	D006700ND
2	Attachment angle	L.72	16	D003555ND	D003556ND
3	Vertical stiffener	L.72	18	D003551ND	D003552ND
4	Top stiffener	L.72	16	D003547ND	D003548ND
5	Vertical stiffener	L.72	18	D003553ND	D003554ND
6	Top reinforcing angle, inboard	L.72	14	D003344ND	D003343ND
7	Top reinforcing angle, outboard	L.72	14	D003343ND	D003344ND
8	Reinforcing angle	L.72	14	D005347ND	D005348ND
9	Rib pressing	L.72	18	D005325ND	D005326ND
10	Doubling plate pressing	L.72	14	D005327ND	D005328ND
11	Channel	L.72	14	D005329ND	D005330ND
12	Packing	L.72	8	D005331ND	D005332ND
13	Stiffener, extruded section	N.A. Co. Section 7785		D005345ND	D005345ND
14*	Reinforcing plate	D.T.D.124	16	D007949	D007949
15*	Reinforcing plate	L.72	16	D007045ND	D007046ND
16*	Packing	L.72	4	D007049ND	D007050ND
17*	Channel	L.72	14	D007047ND	D007048ND
18	Post	L.72	14	D005705ND	D005705ND
19	Stiffener, Standard Section	Reynolds Section A.1154		D002607ND	D002608ND
20	Stiffening angle	L.72	16	D005343ND	D005344ND
21	Reinforcing plate	L.72	14	D005321	D005322
22*	Reinforcing plate	D.T.D.124	16	D007945ND	D007946ND
23*	Reinforcing plate	D.T.D.124	16	D007947ND	D007948ND
24	Reinforcing plate	L.72	14	D005339ND	D005340ND
25	Reinforcing plate	L.72	14	D005337ND	D005338ND
26	Reinforcing angle	L.72	14	D005361ND	D005362ND
27	Reinforcing angle	L.72	14	D005359ND	D005360ND
28	Bottom stiffener	L.72	16	D005357ND	D005358ND
29	Channel attachment	L.72	16	D003527	D003528
30†	Reinforcing plate	L.72	16	D007045ND	D007046ND
31†	Packing	L.72	4	D007049ND	D007050ND
32†	Channel	L.72	14	D007047ND	D007048ND

* Items indicated thus were introduced by Mod. Vam. 3494.

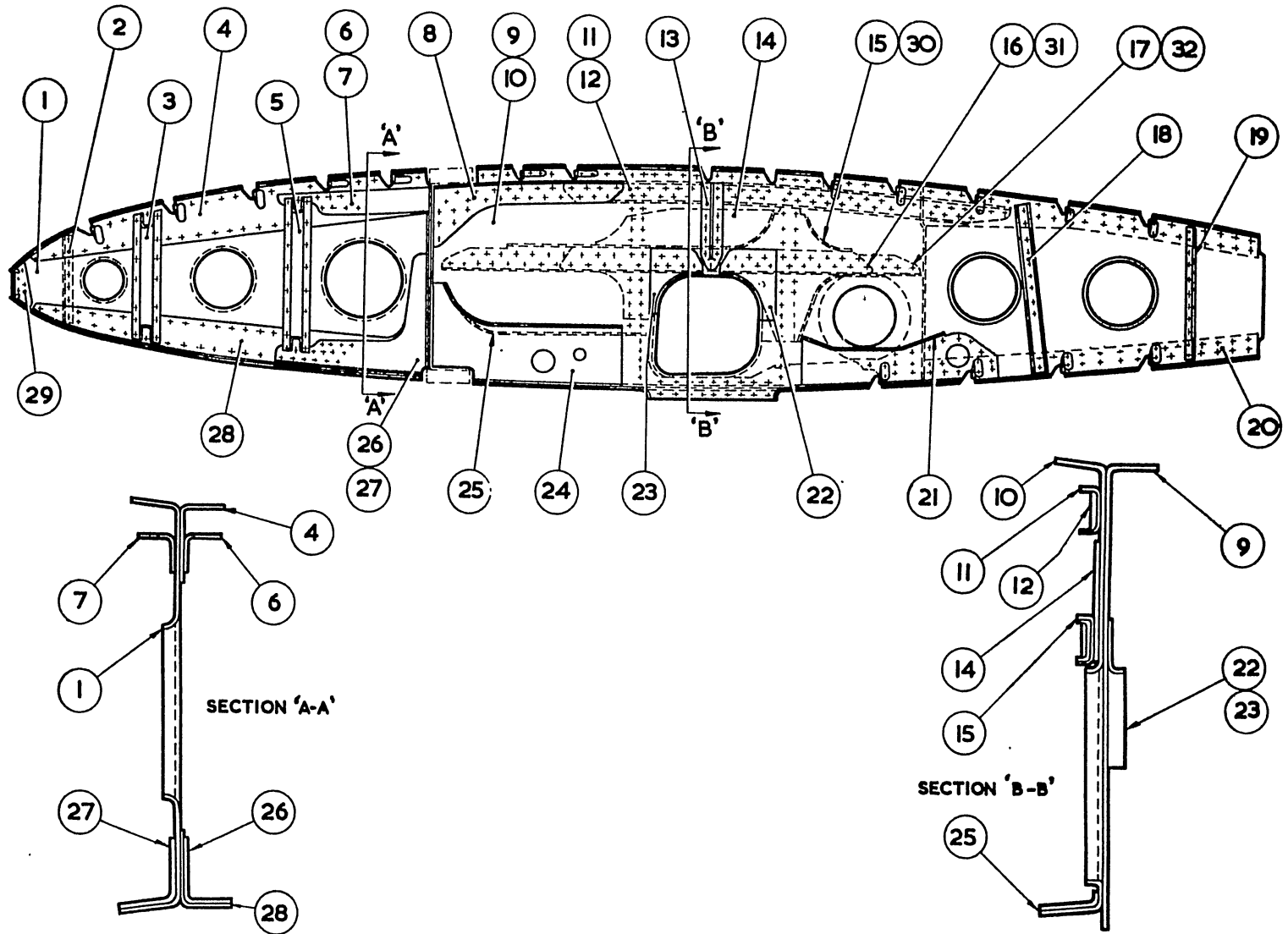
† Items indicated thus were introduced by Mod. Vam. 698.

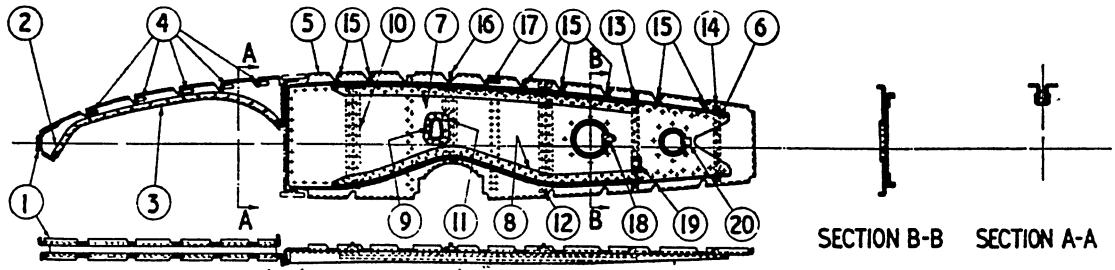
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(A.L.22, Dec. 56)

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Fig. No. 6/19. Rib No. 2 (Mk. 5 and subsequent)





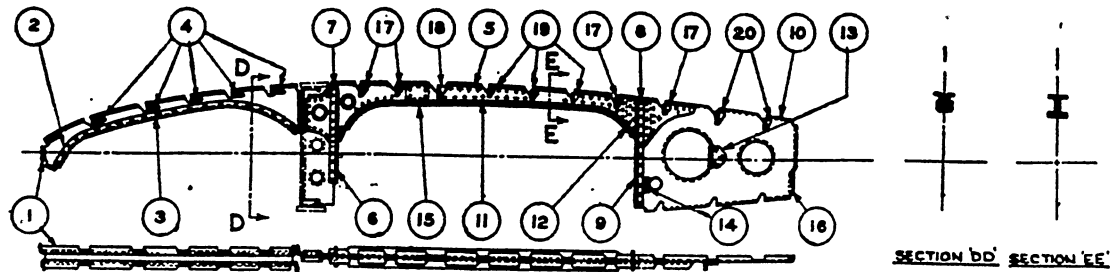
RIB No.3

Assembly D.002549-50 (Nose), F.003731-2A (Centre)

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	Port	Starboard					
1	D.003541ND	D.003542ND	Alclad	D.T.D.390	18	Inboard web	
2	D.003543ND	D.003544ND			18	Outboard web	
3	D.003545ND	D.003546ND			18	Channel	
4	D.00776	D.00775			18	Stringer bracket	
5	D.004167ND	D.004168ND			18	Centre rib pressing	
6	D.004169ND	D.004170ND			10	Rib reinforcing plate	
7	D.004163ND	D.004164ND			8	Top reinforcing angle	
8	D.004165ND	D.004166ND			8	Bottom reinforcing angle	
9	D.001807ND	D.001807ND			14	Reinforcing plate	
10	D.003490ND	D.003491ND			N.A. Co., Section 7785		Web stiffener No. 1
11	D.003275ND	D.003276ND					Web stiffener No. 2
12	D.00493ND	D.00494ND					Web stiffener No. 3
13	D.002617ND	D.002618ND			Reynolds Section A.1154		Web stiffener No. 4
14	D.003277ND	D.003278ND					Web stiffener No. 5
15	D.00765	D.00766	Alclad	D.T.D.390	18	Bracket	
16	D.00989	D.00990			18		
17	D.001169	D.001170			18		
18	P.001920	P.001920			16		
19	P.00737	P.00738			16		
20	Q.00285	Q.00285	16				

Fig. 6/20. Rib No. 3

RESTRICTED

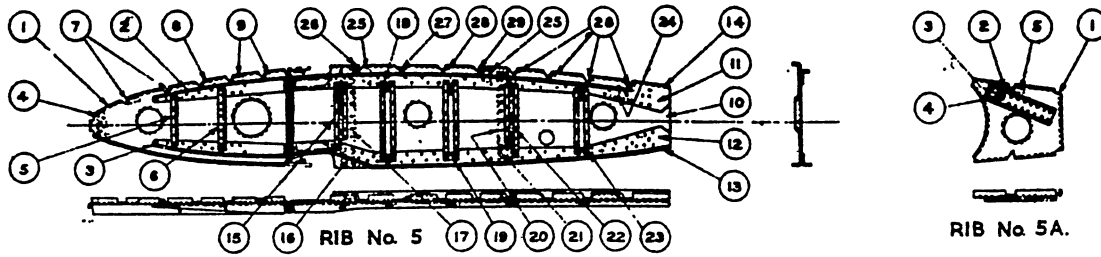


Assembly D.002551-2A (Nose), D.003733-4A (Centre)

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.003535ND	D.003536ND	Alclad	D.T.D.390	18	Inboard web
2	D.003537ND	D.003538ND			18	Outboard web
3	D.003539ND	D.003540ND			18	Channel
4	D.00775	D.00776			18	Stringer bracket
5	D.002401ND	D.002402ND			18	Rib pressing
6	D.001241ND	D.001241ND			13	Packing strip
7	D.002763ND	D.002764ND			18	Angle
8	D.00965ND	D.00966ND			18	Angle
9	D.00969ND	D.00969ND			18	Packing strip
10	D.003321ND	D.003322ND			18	Rib pressing
11	D.002399ND	D.002399ND			18	Rib doubling plate
12	D.002403ND	D.002403ND			18	Lap plate
13	P.002652	P.002652			Duralumin	D.T.D.270 or L3
14	P.001816	P.001816	16	Bracket		
15	D.00967ND	D.00968ND	18	Cap strip		
16	D.002627ND	D.002628ND	14	Corner packing		
17	D.00757	D.00758	Alclad	D.T.D.390	18	Stringer bracket
18	D.00777	D.00778			18	Stringer bracket
19	D.00781	D.00782			18	Stringer bracket
20	D.00759	D.00760			18	Stringer bracket

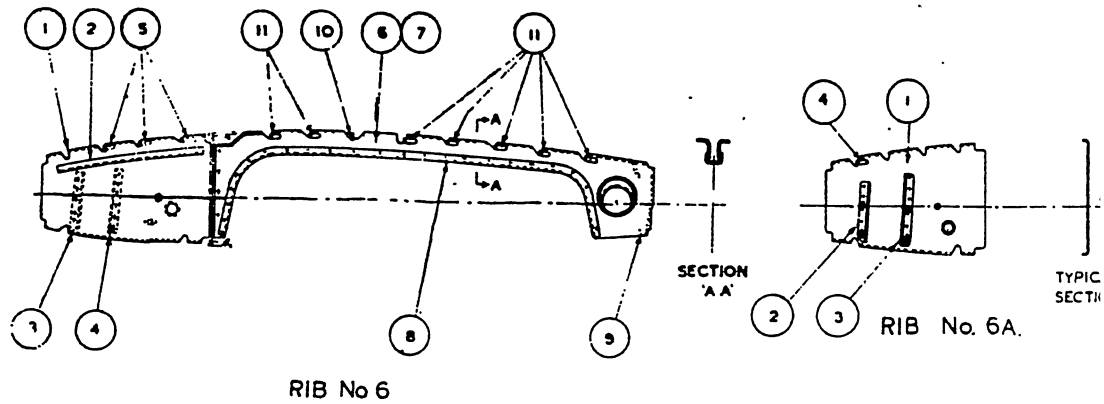
FIG. 6/21—RIB No. 4

B (AL3)



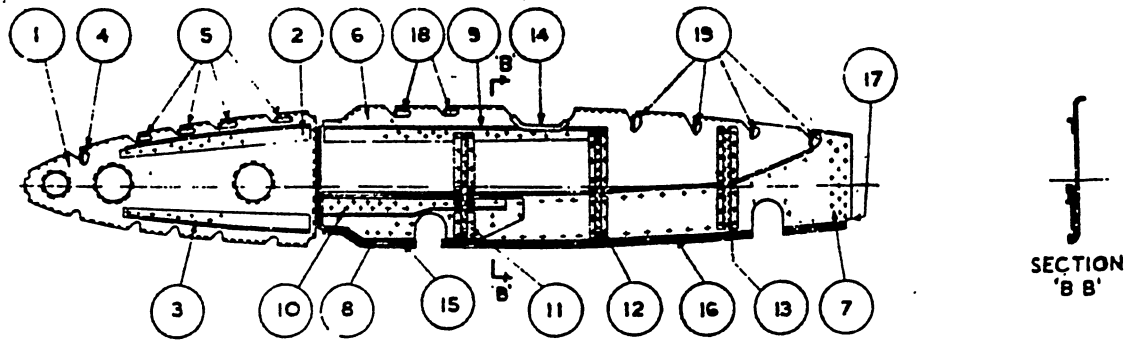
Key No.	Part No.		Material	Specification	S.W.G.	Description				
	Port	Starboard								
RIB No. 5. Assembly D.004943-4A (Nose), D.004297-8A (Centre)										
1	D.004945ND	D.004946ND	Alclad Reynolds Section A.1154	D.T.D.390	18	Rib pressing				
2	D.004947ND	D.004948ND			18	Top stiffener				
3	D.004949ND	D.004950ND			18	Bottom stiffener				
4	D.003525	D.003526			16	Channel attachment				
5	D.003529ND	D.003530ND			18	Web stiffener				
6	D.003531ND	D.003532ND			18	Web stiffener				
7	D.003267	D.003268			18	Stringer bracket				
8	D.003269	D.003270*			18	Stringer bracket				
9	D.003271	D.003272			18	Stringer bracket				
10	D.004299ND	D.004300ND			Alclad	D.T.D.390	18	Rib pressing		
11	D.004301ND	D.004302ND					12	Top stiffener		
12	D.004303ND	D.004304ND					12	Bottom stiffener		
13	D.003563ND	D.003563ND					14	Bottom spreader plate		
14	D.003561ND	D.003561ND					14	Top spreader plate		
15	D.003565ND	D.003566ND					M.S.P.	S.3 or D.T.D.124A (Soft)	18	Vertical stiffener
16	D.001025A	D.001025A							18	Hinge bracket
17	D.003575ND	D.003576ND	Alclad	D.T.D.390			18	Post		
18	D.003567ND	D.003568ND			18	Vertical stiffener				
19	D.003569ND	D.003570ND			18	Vertical stiffener				
20	D.003577ND	D.003578ND			18	Post				
21	D.001025A	D.001025A	M.S.P.	S.3 or D.T.D.124A (soft)	18	Hinge bracket				
22	D.003571ND	D.003572ND	Alclad	D.T.D.390	18	Vertical stiffener				
23	D.003573ND	D.003574ND			18	Vertical stiffener				
24	D.002009	D.002009	M.S.P.	S.3 or D.T.D.124A (soft)	18	Reinforcing plate				
25	D.001026	D.001026			16	Bracket				
26	D.00989	D.00990	Alclad	D.T.D.390	18	Stringer bracket				
27	D.00777	D.00778			18	Stringer bracket				
28	D.00765	D.00766			18	Stringer bracket				
29	D.003209	D.003209			18	Stringer bracket				
RIB No. 5A. Assembly D.003683-4A										
1	D.003265ND	D.003266ND	Alclad	D.T.D.390 or L.38	18	Rib pressing				
2	D.002013ND	D.002013ND	Alclad	D.T.D.390 or L.38	16	Reinforcing channel				
3	D.002016	D.002016	M.S.	S.3 or DHA.28	20	Washer plate				
4	D.002015	D.002015	M.S.	S.1	Bar	Bush				
5	D.003417	D.003418	Alclad	D.T.D.390	18	Stringer bracket				

FIG. 6/22—RIB No. 5 and 5A



Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
RIB No. 6. Assembly D.004965-6/1 (Nose), D.002557-8A (Centre)						
1	D.004989ND	D.004990ND	Alclad	D.T.D.390	18	Rib pressing
2	D.003641ND	D.003642			18	Channel stiffener
3	D.003633	D.003634			18	Stiffener
4	D.003635	D.003636			18	Stiffener
5	D.003417	D.003418			18	Stringer bracket
6	D.003615ND	D.003616ND			18	Inboard web
7	D.003617ND	D.003618ND			18	Outboard web
8	D.003619ND	D.003619ND			18	Channel
9	D.003621	D.003622	M.S.P.	S.3	20	Bracket
10	D.003303	D.003304	Alclad	D.T.D.390	18	Stringer bracket
11	D.00775	D.00776			18	Stringer bracket
RIB No. 6A. Assembly D.004967-8A						
1	D.004987ND	D.004988ND	Alclad	D.T.D.390	18	Rib pressing
2	D.003413ND	D.003414ND			18	Stiffener
3	D.003415ND	D.003416ND			18	Stiffener
4	D.00775	D.00776			18	Stiffener bracket

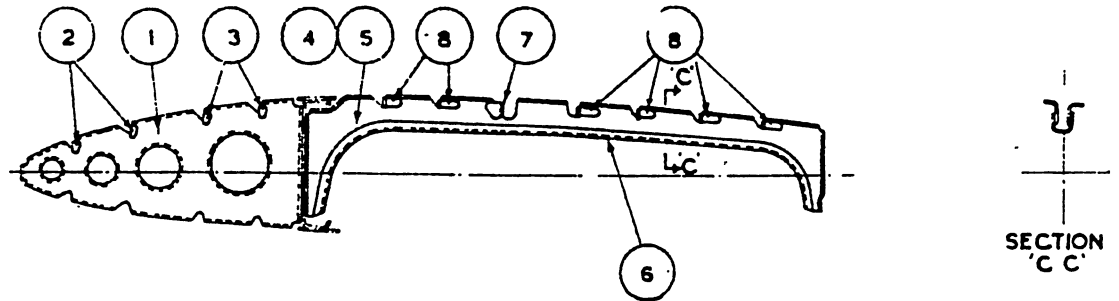
FIG. 6/23—RIB No. 6 and 6A



Assembly D.004953-4/1 (Nose), D.004479-80/1 (Centre)

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.004963ND	D.004964ND	Alclad	D.T.D.390	18	Rib pressing
2	D.004959ND	D.004960ND			18	Angle
3	D.004961ND	D.004962ND			18	Angle
4	D.00753	D.00754			18	Stringer bracket
5	D.00775	D.00776			18	Stringer bracket
6	D.004487ND	D.004488ND			18	Rib pressing
7	D.00491ND	D.00492ND			18	Stiffener rib pressing
8	D.004493ND	D.004494ND			12	Doubling plate
9	D.003401ND	D.003402ND			18	Reinforcing angle
10	D.004497ND	D.004498ND			18	Reinforcing angle
11	D.003403ND	D.003404ND			18	Stiffener
12	D.003405ND	D.003406ND			18	Stiffener
13	D.004481ND	D.004482ND			18	Stiffener
14	D.003399ND	D.003400ND			20	Guide plate
15	D.003259ND	D.003260ND			14	Packing
16	D.004499ND	D.004500ND			14	Packing
17	D.003261ND	D.003262ND			14	Packing
18	D.00776	D.00777			18	Stringer bracket
19	D.00757	D.00758			18	Stringer bracket

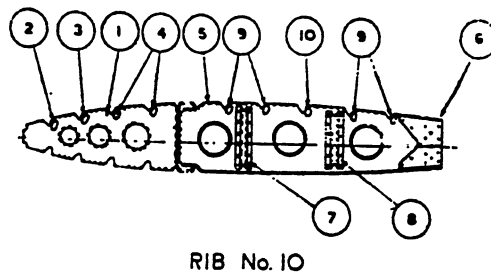
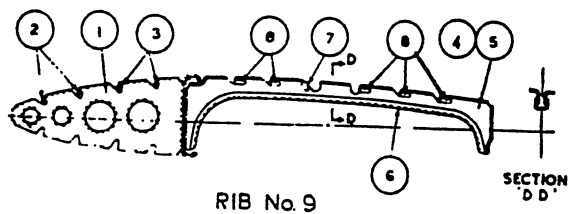
FIG. 6/24—RIB No. 7



Assembly D.00249-50 (nose), D.002561-2A (Centre)

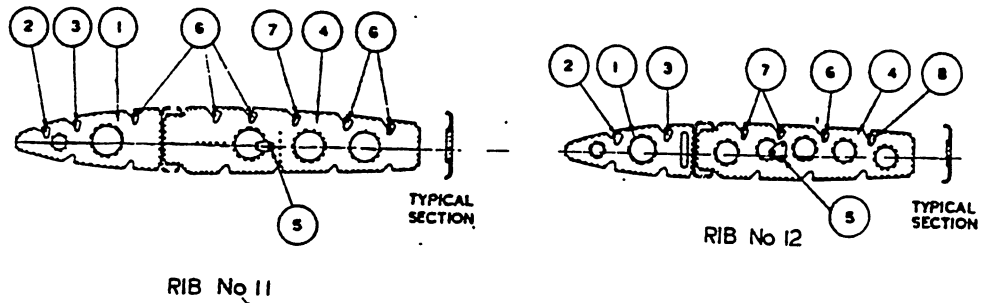
Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.00249	D.00250	Alclad	D.T.D.390	20	Rib pressing
2	D.00753	D.00754			18	Stringer bracket
3	D.00757	D.00758			18	Stringer bracket
4	D.003595ND	D.003596ND			18	Inboard web
5	D.003597ND	D.003598ND			18	Outboard web
6	D.003599ND	D.003599ND			18	Channel
7	D.003303	D.003304			18	Stringer bracket
8	D.00775	D.00776			18	Stringer bracket

FIG. 6/25—RIB No. 8



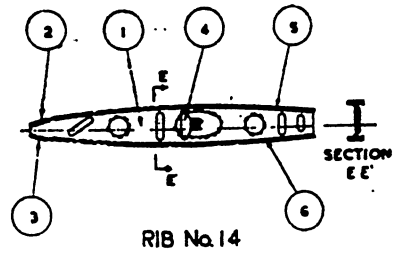
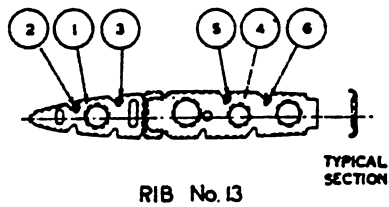
Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
RIB No. 9. Assembly D.00253-4 (Nose), D.00255-6 (Centre)						
1	D.00253	D.00254	Alclad	D.T.D.390	20	Rib pressing
2	D.00753	D.00754			18	Stringer bracket
3	D.00757	D.00758			18	Stringer bracket
4	D.003601ND	D.003602ND			18	Inboard web
5	D.003603ND	D.003604ND			18	Outboard web
6	D.003605ND	D.003605ND			18	Channel
7	D.003303	D.003304			18	Stringer bracket
8	D.00775	D.00776			18	Stringer bracket
RIB No. 10. Assembly D.00257-8						
1	D.00257	D.00258	Alclad	D.T.D.390	20	Rib pressing
2	D.00769	D.00770			18	Stringer bracket
3	D.00753	D.00754			18	Stringer bracket
4	D.00757	D.00758			18	Stringer bracket
5	D.003589ND	D.003590ND			18	Rib pressing
6	D.003593ND	D.003594ND			18	Doubling plate
7	D.003587ND	D.003588ND			18	Stiffener
8	D.003591ND	D.003592ND			18	Stiffener
9	D.00757	D.00758			18	Stringer bracket
10	D.00777	D.00778			18	Stringer bracket

FIG. 6/26—RIB No. 9 and 10



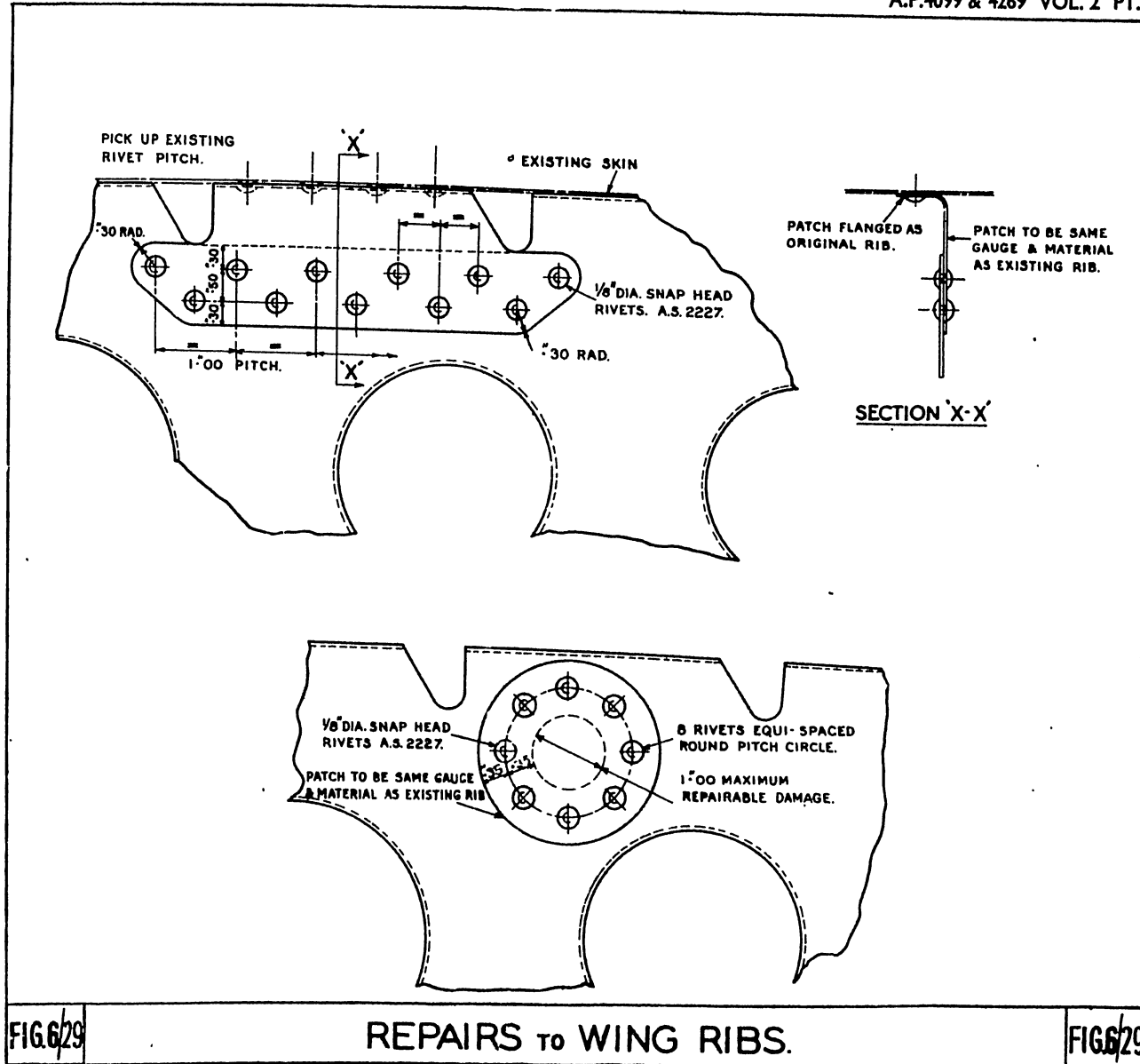
Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
RIB No. 11. Assembly D.00261-2 (Nose), D.003735-6 (Centre)						
1	D.00261	D.00262	Alclad	D.T.D.390	20	Rib pressing
2	D.00769	D.00770			18	Stringer bracket
3	D.00753	D.00754			18	Stringer bracket
4	D.004355ND	D.004355ND			20	Rib pressing
5	D.001494	D.001494			16	Conduit clip mtg.
6	D.00757	D.00758			18	Stringer bracket
7	D.00777	D.00778			18	Stringer bracket
RIB No. 12. Assembly D.002919-20 (Nose), D.00267-8 (Centre)						
1	D.00265	D.00266	Alclad	D.T.D.390	20	Rib pressing
2	D.00753	D.00753			18	Stringer bracket
3	D.00758	D.00759			18	Stringer bracket
4	D.001858ND	D.001859ND			20	Rib pressing
5	D.003202	D.001495	L.F.S.	L.F.S.23		Conduit guide
6	D.00777	D.00778	Alclad	D.T.D.390	18	Stringer bracket
7	D.00757	D.00758			18	Stringer bracket
8	D.00771	D.00772			18	Stringer bracket

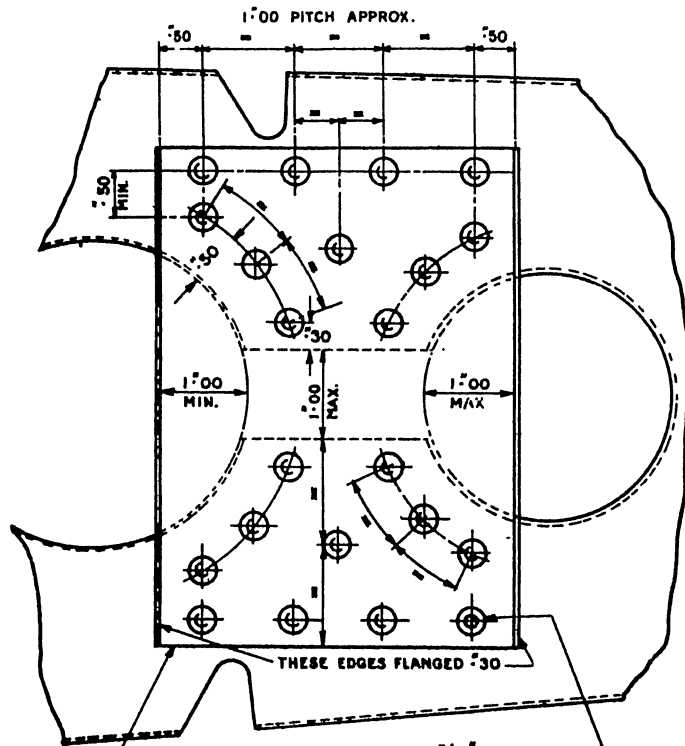
FIG. 6/27—RIB No. 11 and 12



Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
RIB No. 13. Assembly D.002921-2 (Nose), D.002923-4 (Centre)						
1	D.00269	D.00270	Alclad	D.T.D.390	20	Rib pressing
2	D.00753	D.00754			18	Stringer bracket
3	D.00757	D.00758			18	Stringer bracket
4	D.00271	D.00272			20	Rib pressing
5	D.00771	D.00772			18	Stringer bracket
6	D.00777	D.00778			18	Stringer bracket
RIB No. 14. Assembly D.00239-40						
1	D.00239B	D.00240B	Alclad	D.T.D.390 or L.38	20	Rib pressing
2	D.00239E	D.00239F			16	Packing strip
3	D.00239F	D.00239E			16	Packing strip
4	D.00150I	D.00150I			16	Conduit mtg. brkt.
5	D.00239C	D.00239C	—	—	—	Top nut strip
6	D.00239D	D.00239D	—	—	—	Bottom nut strip

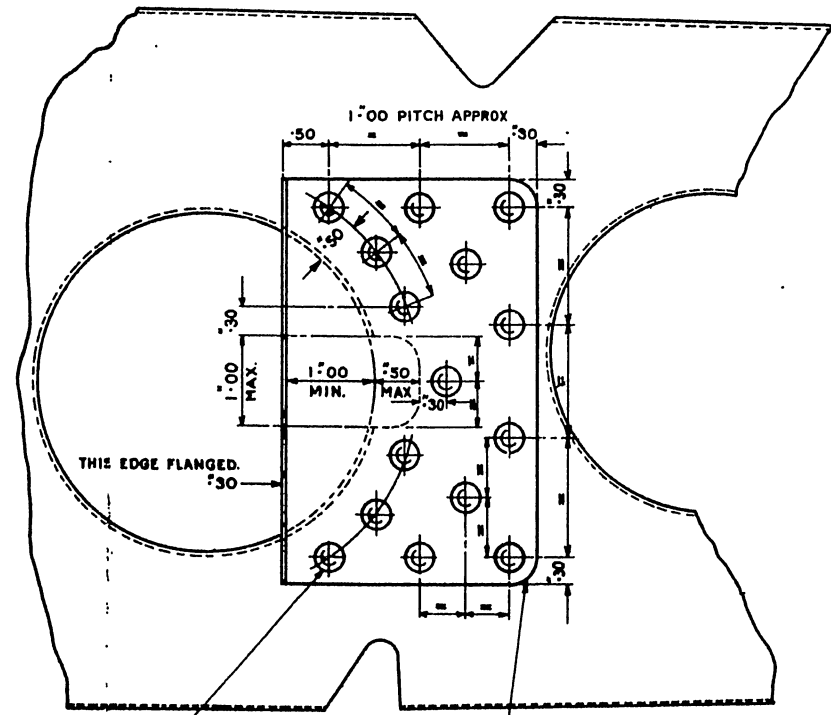
FIG. 6/28—RIB No. 13 and 14





PATCH TO BE SAME GAUGE & MATERIAL AS EXISTING RIB

5/32 DIA. SNAP HEAD RIVETS. A.S. 2227.



5/32 DIA. SNAP HEAD RIVETS. A.S. 2227.

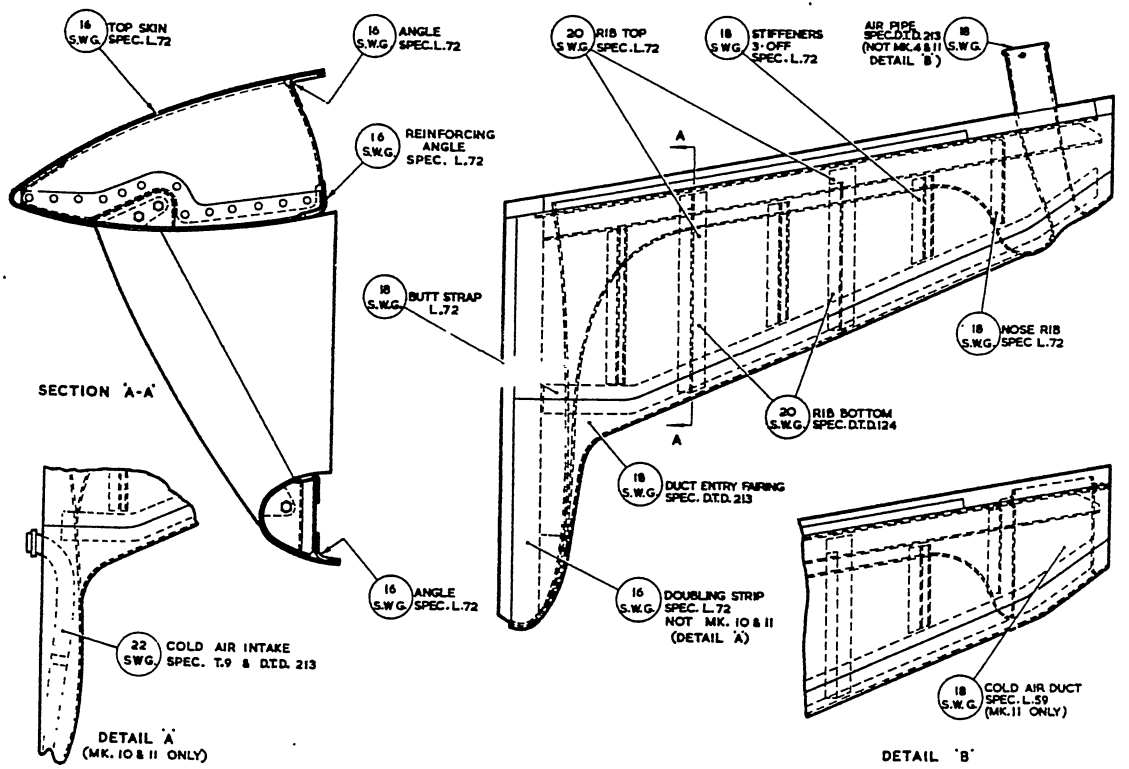
PATCH TO BE SAME GAUGE & MATERIAL AS EXISTING RIB.

FIG. 6/30

REPAIRS TO WEBS OF WING RIBS.

FIG. 6/30

FIG. 6/32 AIR INTAKE



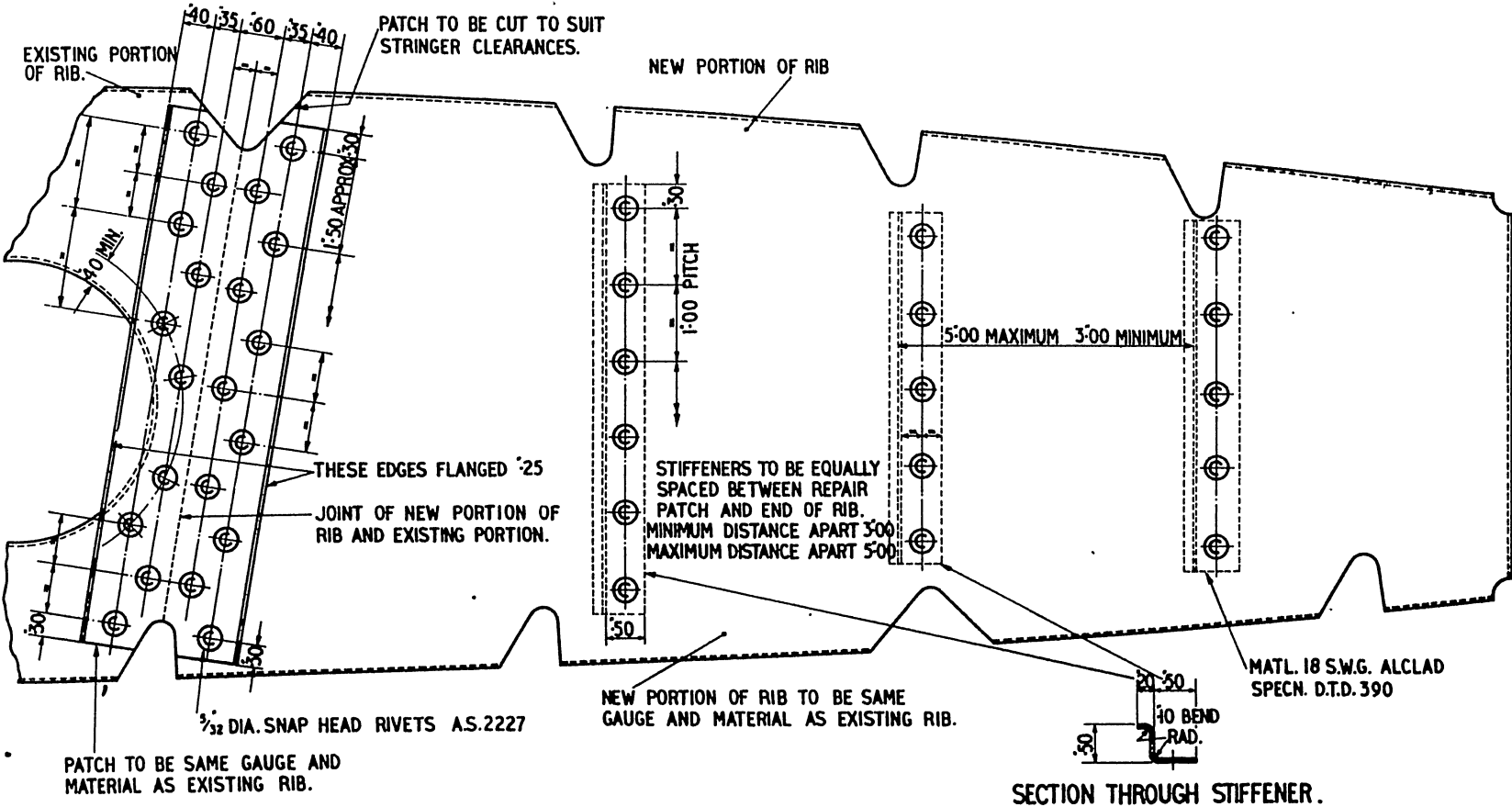
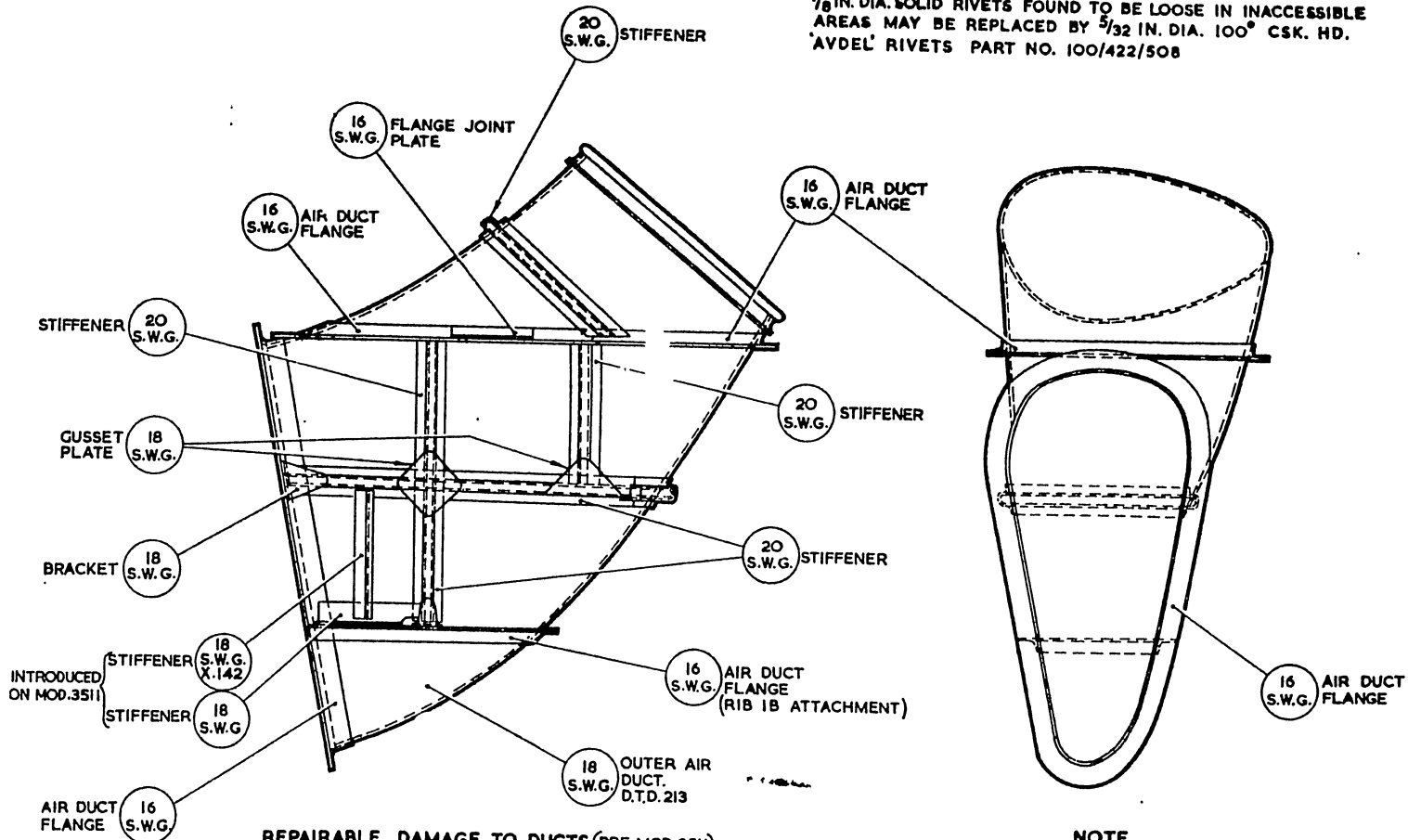


FIG. 6/31 METHOD OF REPLACING DAMAGED PORTION OF WING RIB RESTRICTED

RESTRICTED

Fig. 6/32A. Outer air duct



LOOSE RIVETS
 1/8 IN. DIA. SOLID RIVETS FOUND TO BE LOOSE IN INACCESSIBLE AREAS MAY BE REPLACED BY 5/32 IN. DIA. 100° CSK. HD. 'AYDEL' RIVETS PART NO. 100/422/508

REPAIRABLE DAMAGE TO DUCTS (PRE MOD. 3511)
 CRACKS WHICH MAY BE FOUND TO RUN ALONG THE RIVET LINE AT THE RIB 1B ATTACHMENT FLANGE IN THE UPPER AND LOWER SURFACES SHOULD BE REPAIRED AS SHOWN IN FIG. 6/55 OR 6/56

NOTE
 UNLESS STATED OTHERWISE ALL MATERIAL IS TO SPECIFICATION L.72

(A.L.30, Sep. 58)

A.P. 4099 & 4269, Vol. 2, Part 3, Chap. 6 (A.L.30)

WHEEL WELL AND UNDERCARRIAGE DIAPHRAGMS

Key to Items shown on Fig. No. 6/33

Assembly. D.003709-10A and D.004201-2A (Mk. 3) or D.005195-6

Key No.	Part No.		Material	Specification	S.W.G.	Description		
	Port	Starboard						
1	D.003395ND	D.003396ND	Alclad	D.T.D.390	16	Front centre wall		
2	D.003393ND	D.003394ND			16	Front bottom angle		
3	D.002779ND	D.002780ND			16	Front top angle—inboard		
4	D.002781ND	D.002782ND			16	Front top angle—outboard		
5	D.003397ND	D.003398ND			18	Rear centre wall		
6	D.003795ND	D.003796ND			18	Rear bottom angle		
7	D.002783ND	D.002784ND			18	Rear top angle—inboard		
8	D.002785ND	D.002786ND			18	Rear top angle—outboard		
9	D.004179ND	D.004180ND			18	Stiffening ring		
10	D.004183ND	D.004184ND			16	Cover plate		
11	D.004177ND	D.004178ND			18	Stiffening ring		
12	D.004181ND	D.004182ND			16	Cover plate		
13	D.001089	D.001090			18	Bracket		
14	D.001091	D.001092			18	Bracket		
15	D.001054ND	D.001054ND			16	Packing strip		
16	D.001016ND	D.001016ND			18	Packing strip		
17	D.001179	D.001179			L.F.S.	L.F.S.26	Door stop	
18	G.00502ND	G.00502ND			M.S.P.	D.H.A.28	18	Plate } Assembled on G.00427A
19	G.00503ND	G.00503ND					17	Barrel } Assembled on G.00428A
20	G.00506ND	G.00506ND					18	Plate } Assembled on G.00428A
21	G.00507ND	G.00507ND					17	Barrel } Assembled on G.00428A
22	D.002037ND	D.002037ND					18	Stiffening plate
23	D.002038ND	D.002038ND			18	Stiffening plate		
24	G.00501ND	G.00501ND			18	Bracket assembled on G.00433A		
25	D.00115	D.00116	Alclad	D.T.D.390	18	Front stiffener		
26	D.001827	D.001827	Light-alloy casting	D.T.D.298 or D.T.D.300			Front bracket	
27	D.001120	D.001120	Alclad	D.T.D.390	18	Gusset		
28	D.00117	D.00118	Alclad	D.T.D.390	18	Rear stiffener		
29	D.001825	D.001826	Light-alloy casting	D.T.D.298 or D.T.D.300	18	Rear bracket		
30	D.004197	D.004198	Alclad	D.T.D.390	14	Diaphragm front		
31	D.00865	D.00866	Alclad	D.T.D.390	16	Stiffener		
32	D.00869	D.00870			16	Stiffener		
33	D.00877	D.00878			16	Stiffener		
34	D.002930	D.002930			16	Stiffener		
35	D.00873	D.00874			16	Stiffener		
36	D.00882	D.00882			16	Stiffener		
37	D.004219	D.004220			16	Gusset		
38	D.002433ND	D.002433ND			M.S.P.	D.T.D.124 (soft)	16	Reinforcing member
39	D.002431ND	D.002432ND	16	Angle } Assembled on D.00861-2A				
40	D.00881	D.00881	Alclad	D.T.D.390	16	Reinforcing member		
41	D.00297	D.00298			16	Angle bracket		
42	D.00871	D.00872			14	Diaphragm rear		
43	D.00867	D.00868			16	Stiffener		
44	D.00879	D.00880			16	Stiffener		
45	D.00875	D.00876			16	Stiffener		
46	D.00859	D.00860			16	Stiffener		
47	D.002761ND	D.002762ND	M.S.P.	D.T.D.124 (soft)	16	Reinforcing member		
48	D.002429ND	D.002428ND			16	Angle } Assembled on D.00863A		
49	G.0079	G.0079	Dural.	L.I or D.T.D.423A	16	Reinforcing member		
50	G.00630	G.00630	Dural.	L.I or D.T.D.423A	Bar	Hinge pick-up—radius rod		
51	D.001958	D.001958	Alclad	D.T.D.390 or L.38	20	Hinge pick-up—main undercarriage		
52	D.001247	D.001247	M.S.P.	S.3	16	Mounting bracket assembled on D.001195A		
53	D.005191	D.005192			16	Lug		
54	D.005171	D.005171	Alclad	D.T.D.390	14	Diaphragm front		
55	D.005173	D.005173			16	Stiffener		
56	D.005183	D.005184			16	Stiffener		
57	D.005177	D.005177			16	Stiffener		
58	D.005181	D.005182			16	Stiffener		
59	D.005189	D.005189			16	Stiffener		
60	D.005165	D.005166			M.S.P.	D.T.D.124A	16	Gusset
61	D.005163	D.005164					16	Reinforcing plate
62	D.005193	D.005194			M.S.P.	D.T.D.124A	10	Reinforcing plate
63	D.005175	D.005175					14	Diaphragm rear
64	D.005173	D.005173	Alclad	D.T.D.390	16	Stiffener		
65	D.005187	D.005188			16	Stiffener		
66	D.005179	D.005179			16	Stiffener		
67	D.005185	D.005186			16	Stiffener		
68	D.005169	D.005170			16	Stiffener		
69	D.005167	D.005168			M.S.P.	D.T.D.124A	10	Reinforcing plate
70	G.001010	G.001010			Dural.	L.I or D.T.D.423A	10	Reinforcing plate
					Bar	Hinge pick-up, main undercarriage		

Note . . .

Items 1 to 52 apply to Mk. 3 aircraft.

Items 1 to 29, 49 and 53 to 70 apply to Mk. 5 and 20 aircraft.

RESTRICTED

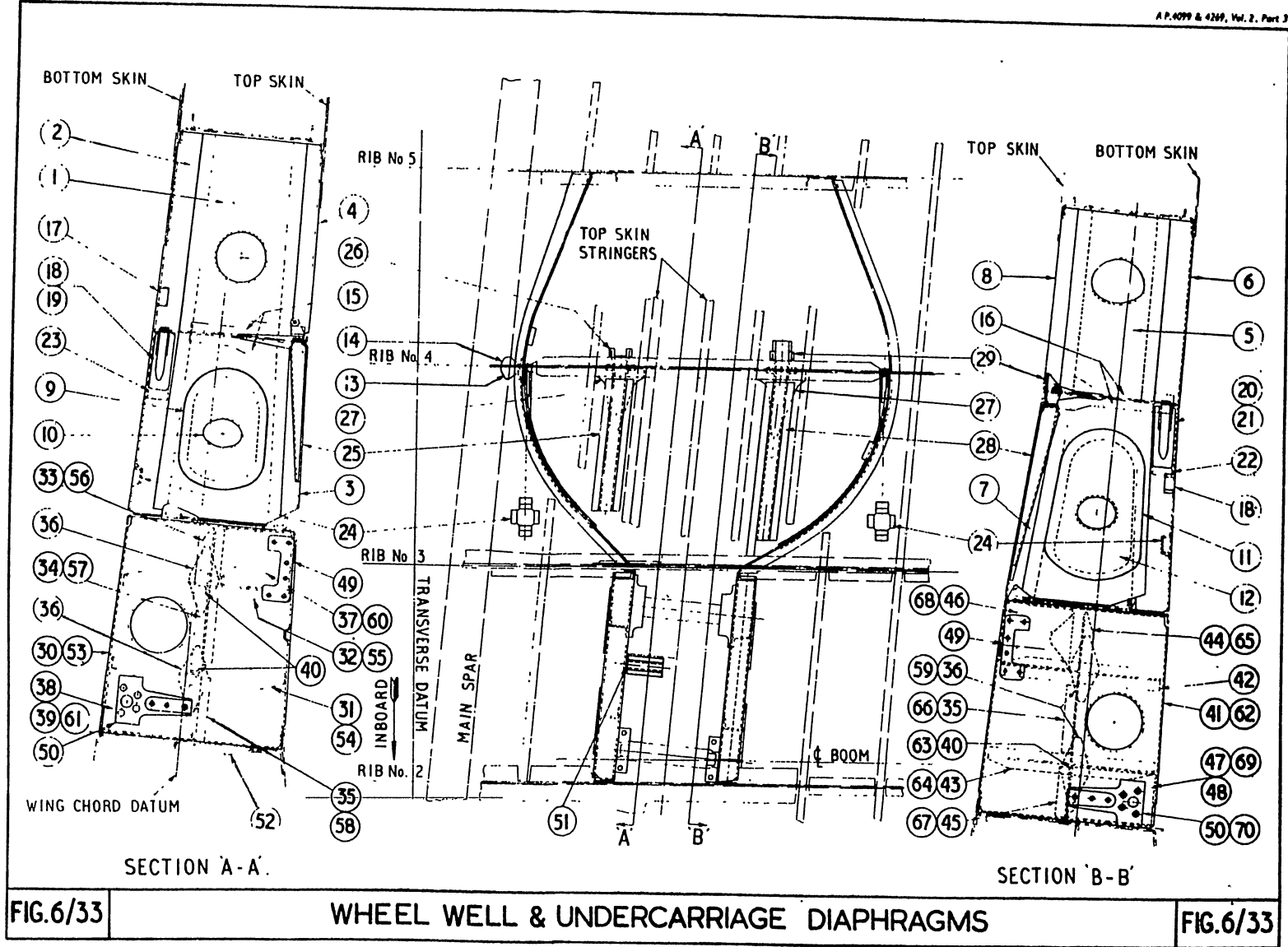


FIG.6/33

WHEEL WELL & UNDERCARRIAGE DIAPHRAGMS

FIG.6/33

WING TANK DOORS

Key to Items shown on Fig. 6/34

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
INNER DOOR. Assembly D.005029-30A						
1	D.005023ND	D.005024ND	Alclad	D.T.D.546	6	Tank door
2	D.005025ND	D.005026ND	Alclad	D.T.D.390	6	Access door
3	D.004875ND	D.004876ND	Alclad	D.T.D.390	10	Nut plate
4	D.004234	D.004234ND	Alclad	D.T.D.390 or L. 38	10	Reinforcing ring
5	D.004329ND	D.004329ND	Alclad	D.T.D.546	6	Access door
6	D.005022ND	D.005022ND	L.F.S.	L.F.S.23	·5 in. × ·38 in.	Strip
7	D.005027ND	D.005027ND	L.F.S.	L.F.S.23	·5 in. × 38 in.	Strip
LEADING EDGE DOOR. Assembly D.002583-4						
1	D.002583	D.002584	Alclad	D.T.D.390	10	Tank door

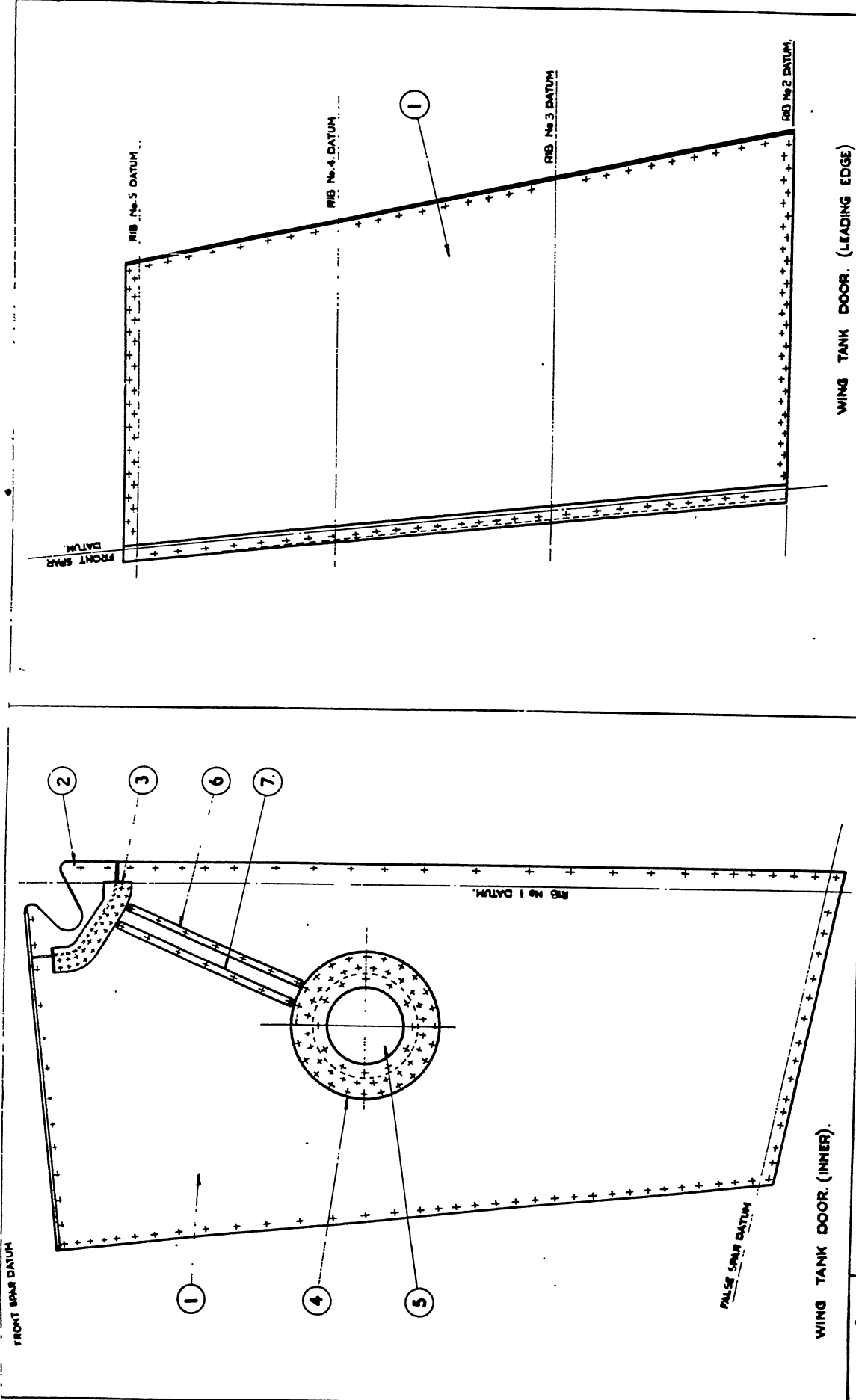


FIG.6/34 WING TANK DOORS. (INNER & L. E.) **FIG.6/34**

WING TANK DOOR. (LEADING EDGE)

WING TANK DOOR. (INNER)

WING TANK DOOR (OUTER)

Key to Item shown on Fig. 6/35

Assembly D.002585-6A

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.00353ND	D.00354ND	Alclad	D.T.D.390 or L.38	10	Tank door
2	D.004294ND	D.004294ND	Alclad	D.T.D.390 or L.38	10	Inspection door
3	D.004234ND	D.004234ND	Alclad	D.T.D.390 or L.38	10	Reinforcing ring
4	D.005585	D.005585	L.F.S.	L.F.S. 23 or 26	—	Packing
5	D.004362ND	D.004362ND	L.F.S.	L.F.S.23	$\frac{1}{2}$ in. \times $\frac{3}{8}$ in.	Runway strip
6	D.004363ND	D.004363ND	L.F.S.	L.F.S.23	$\frac{1}{2}$ in. \times $\frac{3}{8}$ in.	Runway strip
7	P.00317	P.00317	Alum. Mang.	D.T.D.213	20	Duct—venting system

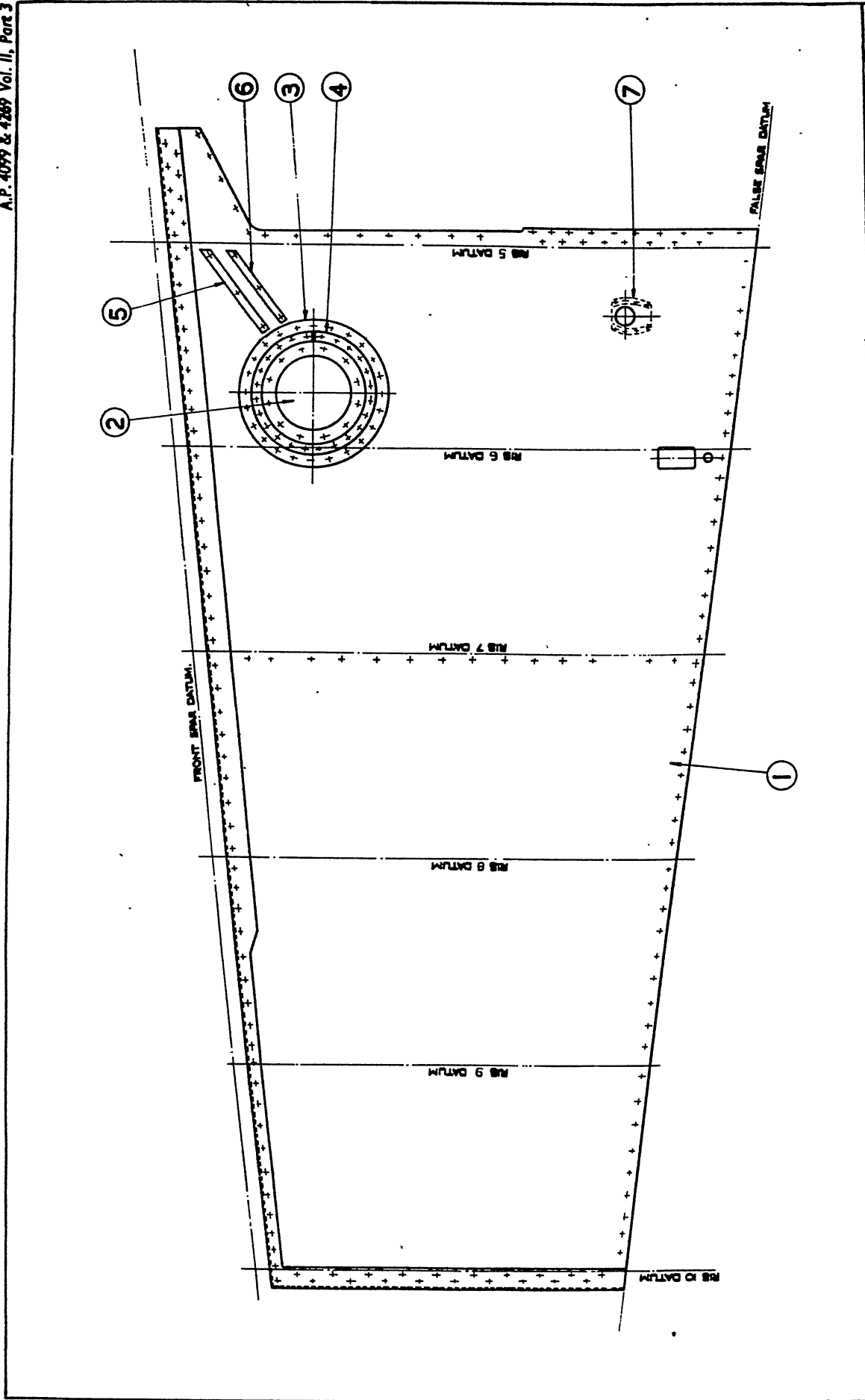


FIG.6/35

WING TANK DOOR (OUTER)

FIG.6/35

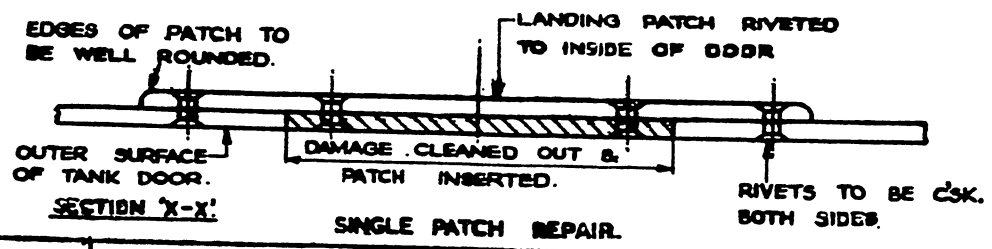
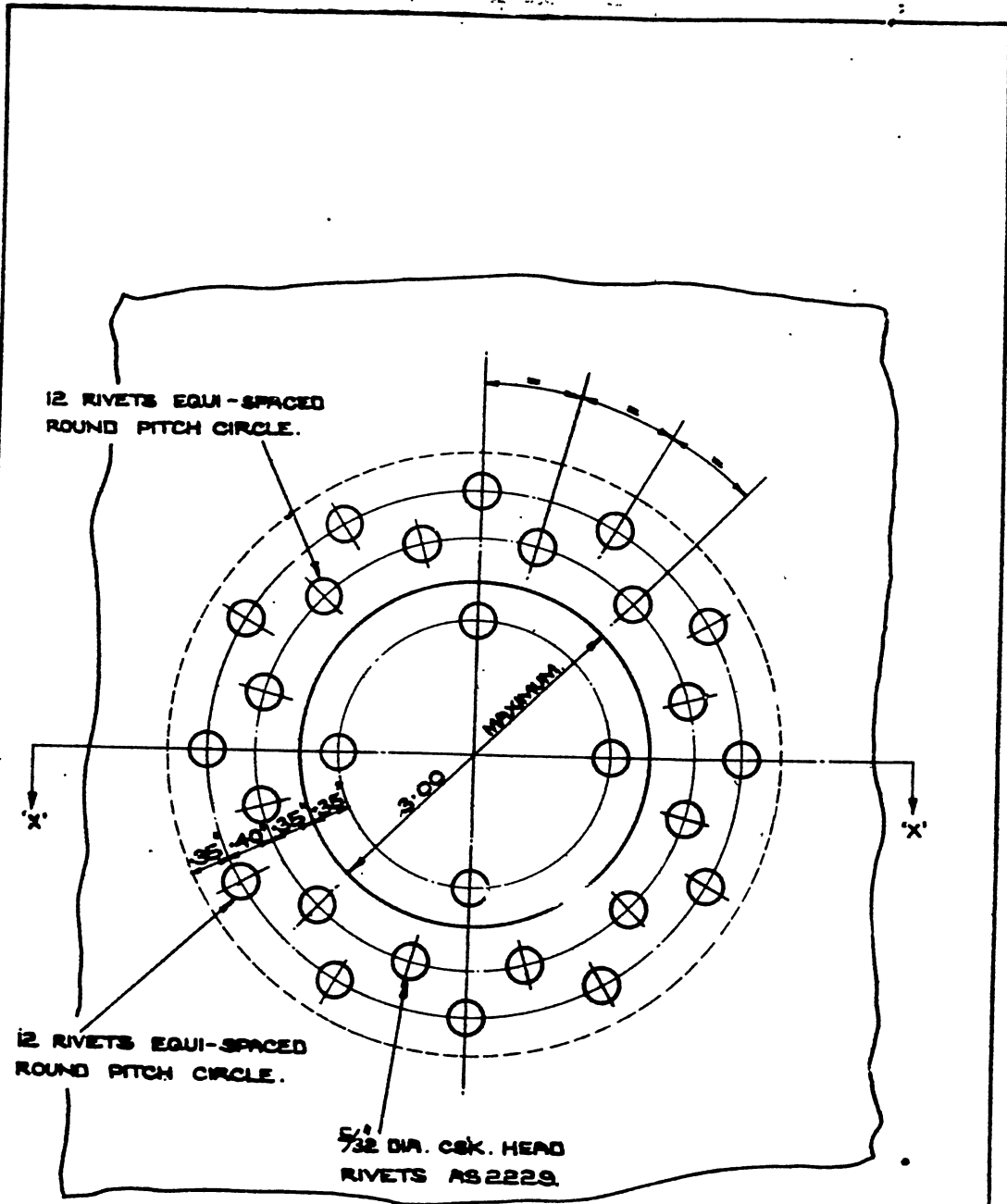


FIG.6/36

REPAIR TO TANK DOOR.

FIG.6/36

This leaf issued with AL No. 3, April, 1949

A.P. 4099 & 4269 VOL. 2 PT. 3

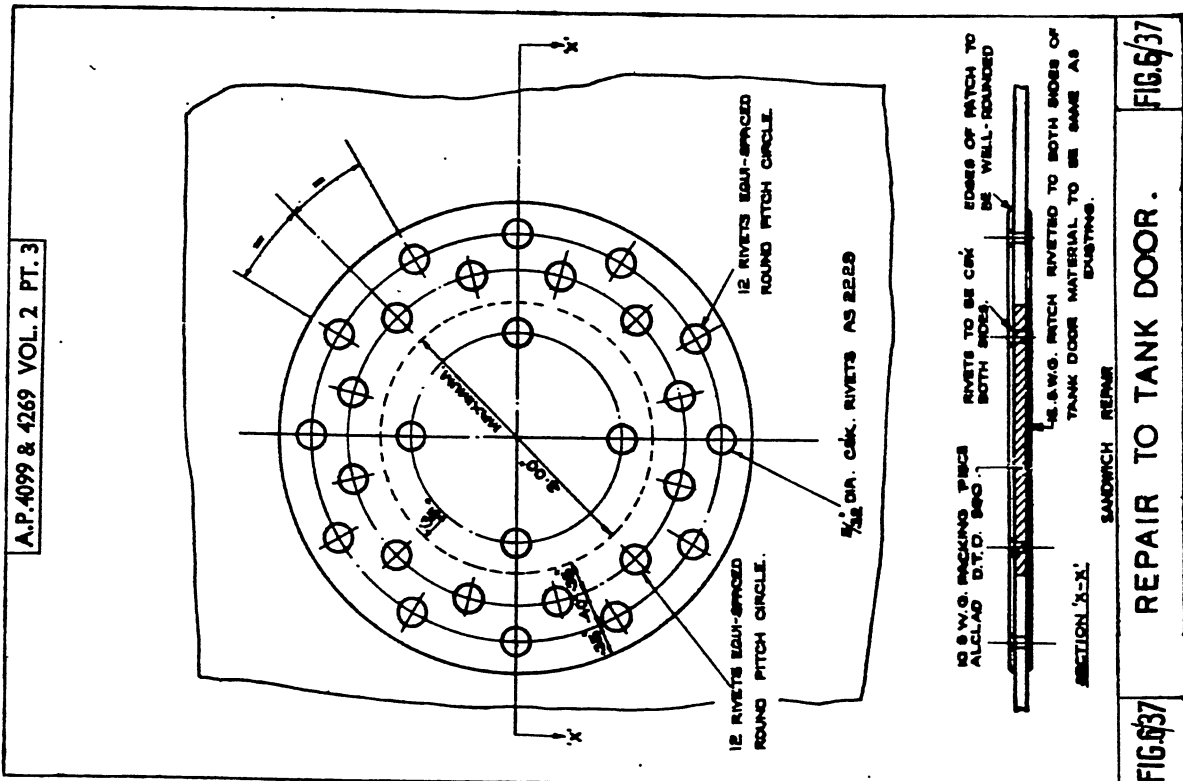


FIG 637 REPAIR TO TANK DOOR. FIG 637

AILERON (Mk. 3)

Key to items shown on Fig. No. 6/38

Assembly D.001507-8A

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001815ND	D.001816ND	Alclad	D.T.D.390	22	Top skin
2	D.001817ND	D.001818ND			22	Bottom skin
3	D.00110A	D.00111A			18	Aileron spar
4	D.001793	D.001793	Dural.	L.1 or L.3 or D.T.D.423A		Trailing edge
5	D.001555A	D.001556A	Alclad	D.T.D.390	20	Tab shroud
6	D.001559	D.001560				Assembly of aileron tab
7	D.003135	D.003135				Assembly of outboard mass balance
8	D.003134A/I	D.003134A/I				Assembly of inboard mass balance
9	D.00106	D.00106	Dural. or alum. alloy Alum. mag. or alum. copper alloy	L.1 or forging D.T.D.423A D.T.D.300 or D.T.D.298	Casting	Outer hinge bracket
10	D.00109	D.00109				Centre hinge bracket
11	D.003313A	D.003314A				Lever hinge bracket
12	D.001365	D.001364	Alclad	D.T.D.390	18	Inspection door
13	D.001373A	D.001374A			18	Reinforcing ring
14	D.00585	D.00586			22	Nose rib
15	D.00583	D.00584	M.S. plate	S.3	22	Nose rib
16	D.00351	D.00350			22	Nose rib
17	D.001543	D.001544			20	Rib No. 1
18	D.001553A	D.001554A	Alclad	D.T.D.390	22	Rib No. 2
19	D.001547	D.001548			20	Rib No. 7
20	D.001551A	D.001552A			20	Rib No. 13
21	D.001549A	D.001550A			20	Rib No. 21
22	D.001545	D.001546			20	Rib No. 23

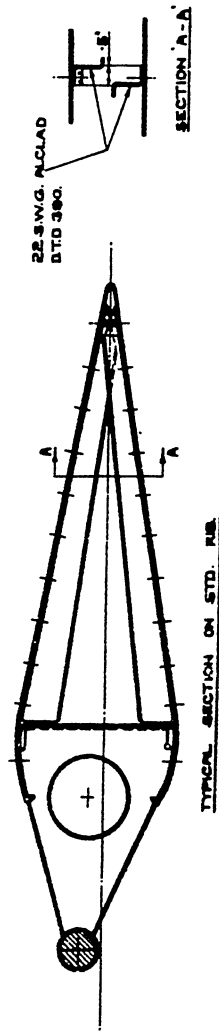
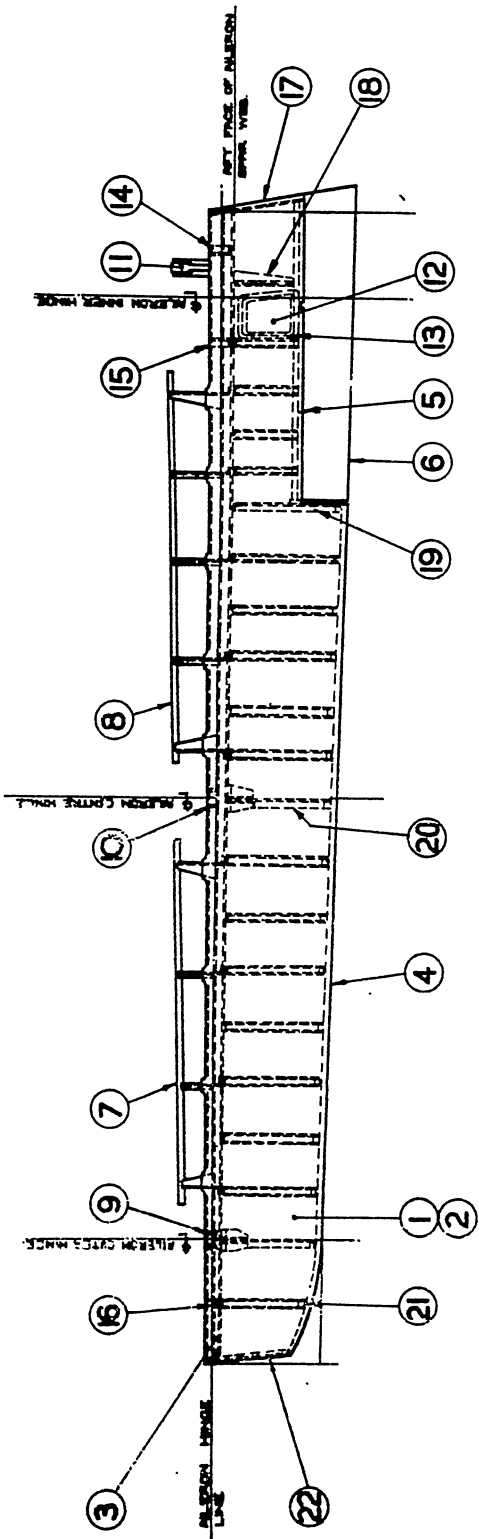


FIG 638

AILERON.

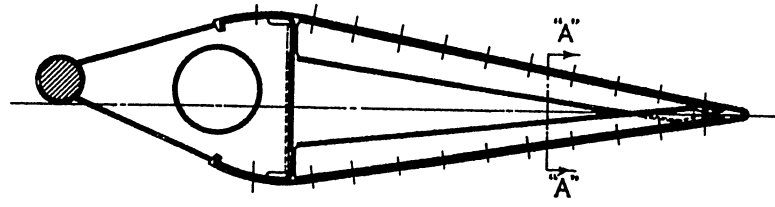
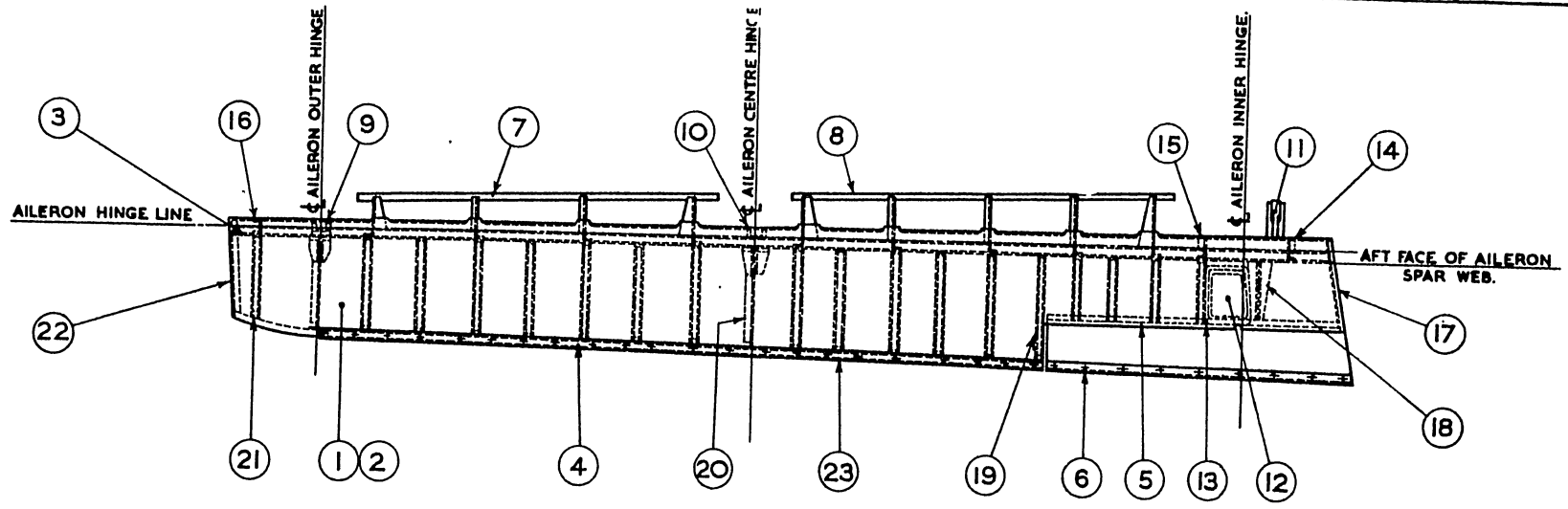
FIG 638

AILERON (Mk. 5 and 20)

Key to Items shown on Fig. 6/38A

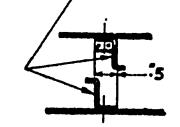
Assembly D.006657-8

Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.006661ND	D.006662ND	Alclad	D.T.D.390	22	Top skin
2	D.006663ND	D.006664ND	Alclad	D.T.D.390	22	Bottom skin
3	D.006659	D.006660	Alclad	D.T.D.390	18	Aileron spar
4	D.006665	D.006665	Dural.	L.1 or L.3 or D.T.D.423A		Trailing edge
5	D.001555A	D.001556A	Alclad	D.T.D.390	20	Tab shroud
6	D.001559A/I	D.001560A/I	—	—	—	Assembly of aileron tab
7	D.003135A/I	D.003135A/I	—	—	—	Assembly of outboard mass balance
8	D.003134A/I	D.003134A/I	—	—	—	Assembly of inboard mass balance
9	D.00106	D.00106	Dural. or Alum. alloy Dural. or Alum. alloy Alum. Mag. or Alum. Copper alloy	L.1 or forging		Outer hinge bracket
10	D.00109	D.00109		L.1 or forging		Centre hinge bracket
11	D.003313A	D.003314A		D.T.D.300 or D.T.D.298		Lever hinge bracket (casting)
12	D.001365	D.001364	Alclad	D.T.D.390	18	Inspecting door
13	D.001373A	D.001374A			18	Reinforcing ring
14	D.00583	D.00584			22	Nose rib
15	D.00585	D.00586			22	Nose rib
16	D.00351	D.00350			22	Nose rib
17	D.001543	D.001544			20	Rib No. 1
18	D.001553A	D.001554A			M.S.P.	S.3
19	D.001547	D.001548	Alclad	D.T.D.390	20	Rib No. 7
20	D.001549A	D.001550A			20	Rib No. 13
21	D.001551A	D.001552A			20	Rib No. 21
22	D.006593	D.006594			20	Rib No. 23
23	D.004563ND	D.004563ND			24	Trailing edge balance strip



TYPICAL SECTION ON STD. RIB.

22 S.W.G. ALCLAD
D.T.D. 390



SECTION "A-A"

FIG. 6/38A

AILERON

FIG. 6/38A

AILERON SPAR

Key to items shown on Fig. No. 6/39

Assembly D.006659-60

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.003279ND	D.003280ND	Alclad	D.T.D.39U	18	Aileron spar inboard portion
2	D.006595ND	D.006596ND			18	Aileron spar outboard portion
3	D.003285ND	D.003286ND			18	Bottom stiffener
4	D.003283ND	D.003284ND			18	Top stiffener
5	D.003289ND	D.003289ND			18	Joint plate
6	D.003287ND	D.003287ND			18	Reinforcing ring

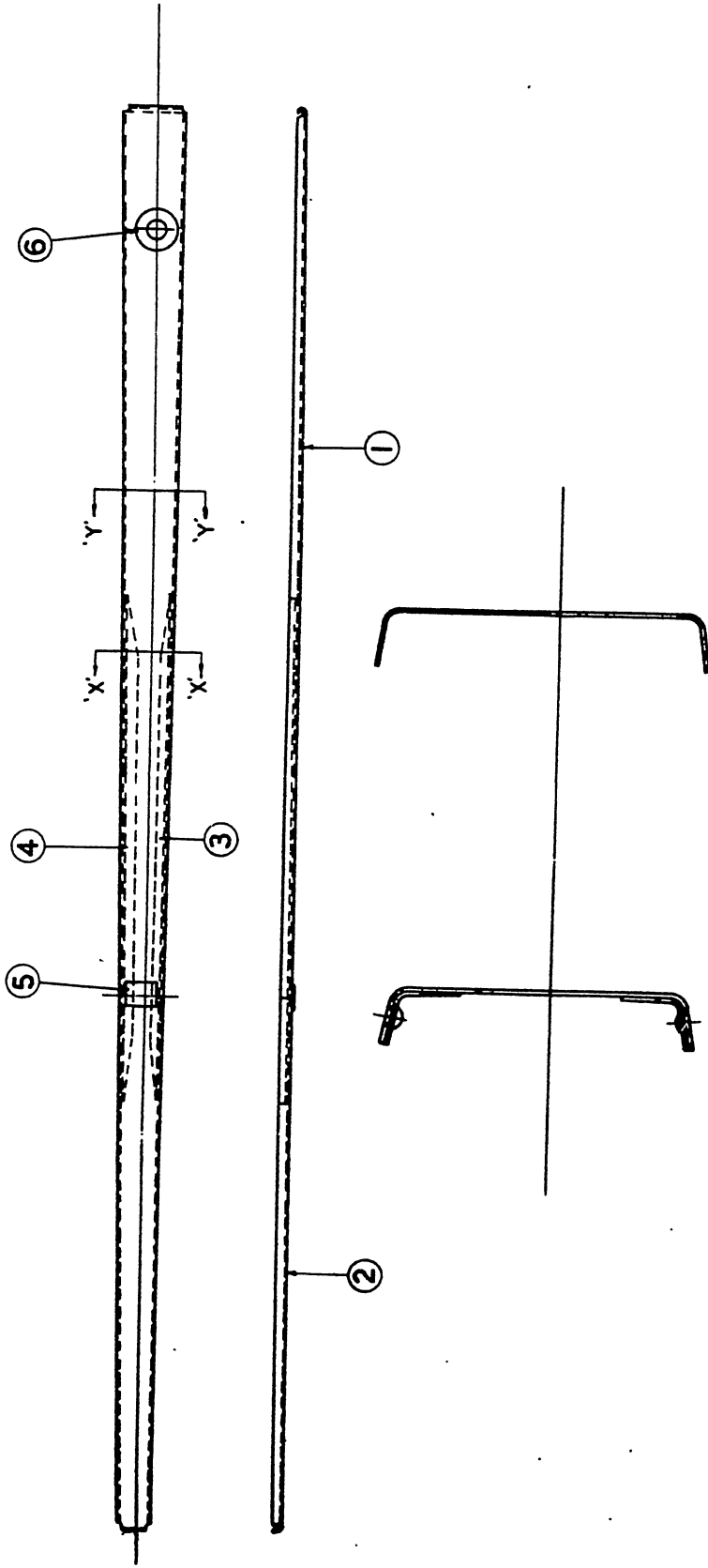


FIG 639

AILERON SPAR.

FIG 639

x = Distance in inches from hinge line to estimated centre of applied patch or insert.

y = Total distance in inches from wing root to estimated repair centre, i.e. distance " z " from aileron inner hinge to estimated repair centre plus 107.8 inches.

m = Weight in ounces of repair material minus weight of material removed to clean out damaged area (to nearest $\frac{1}{4}$ oz.).

Note.—" mxy " must be resolved for each repair so that the change of weight may be determined from the algebraic sum of the repair moments.

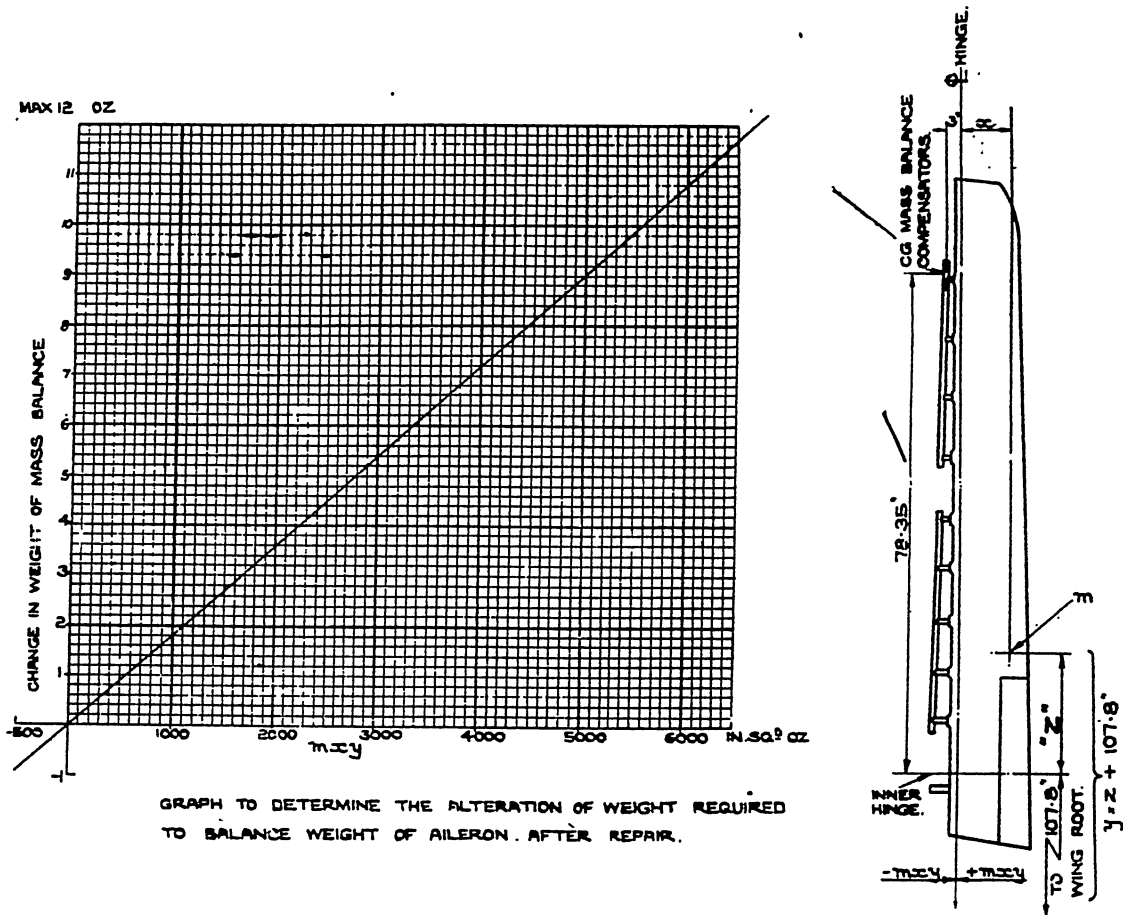
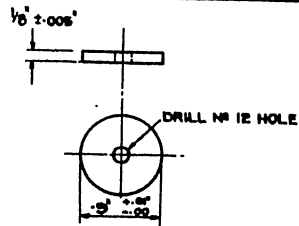


FIG. 6/40—RE-BALANCE CHART FOR AILERON

DETAIL OF COMPENSATOR WEIGHT.

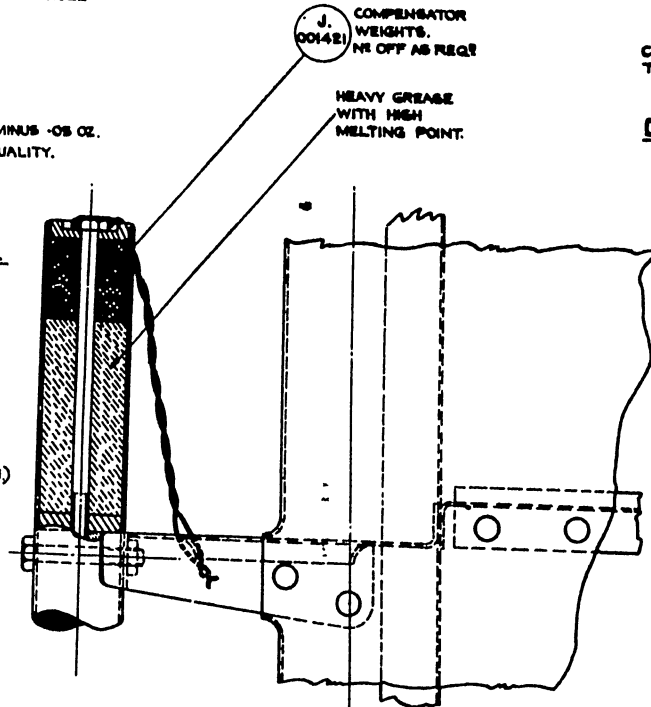
PT. NO. J.001421.



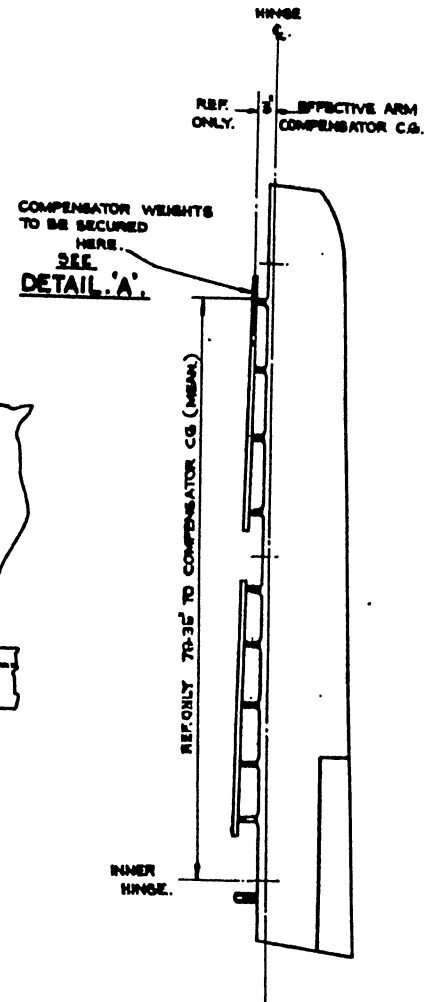
WEIGHT:- 1/2 OUNCE, PLUS OR MINUS .05 OZ.
 MATERIAL:- LEAD, COMM. QUALITY.
 FINISH:- NIL.

METHOD OF SECURING COMPENSATOR WEIGHTS.

1. REMOVE 2 B.A. BOLT AND SEALING CAP.
2. PLACE THE NUMBER OF COMPENSATOR WEIGHTS REQUIRED ON THE BOLT.
3. PARTLY FILL THE COMPENSATOR CHAMBER WITH GREASE. (SO THAT NO AIR-SPACE WILL REMAIN)
4. INSERT THE 2 B.A. BOLT, CAP, AND COMPENSATOR WEIGHTS TOGETHER.
5. FINALLY LOCK 2 B.A. BOLT WITH 20 S.W.G. IRON LOCKING WIRE.



DETAIL 'A' - PART SECTION.



AILERON SHROUD

Key to Items shown on Fig. No. 6/42

Assembly D.003997-8A

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001302ND	D.001303ND	Alclad	D.T.D.390	20	Shroud former—top
2	D.002437A	D.002438A		D.T.D.390 or L.38	20	Diaphragm No. 1
3	D.00515ND	D.002703ND		D.T.D.390	20	Shroud upper portion
4	D.00516ND	D.002704ND			20	Shroud lower portion
5	D.001305	D.001306		D.T.D.390 or L.38	20	Diaphragm No. 2
6	D.003935	D.003936			20	Diaphragm No. 3
7	D.003100ND	D.00511ND		D.T.D.390	20	Shroud upper portion
8	D.003101ND	D.00512ND			20	Shroud lower portion
9	D.001300	D.001301		D.T.D.390 or L.38	20	Diaphragm No. 4
10	D.001311	D.001312			20	Diaphragm No. 5
11	D.001310	D.001310		D.T.D.390	20	Shroud former

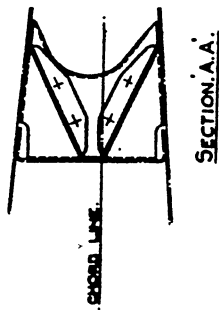
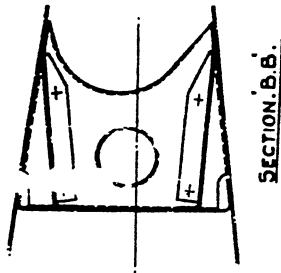
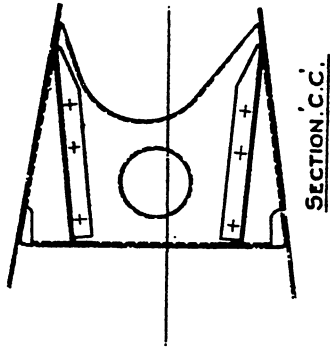
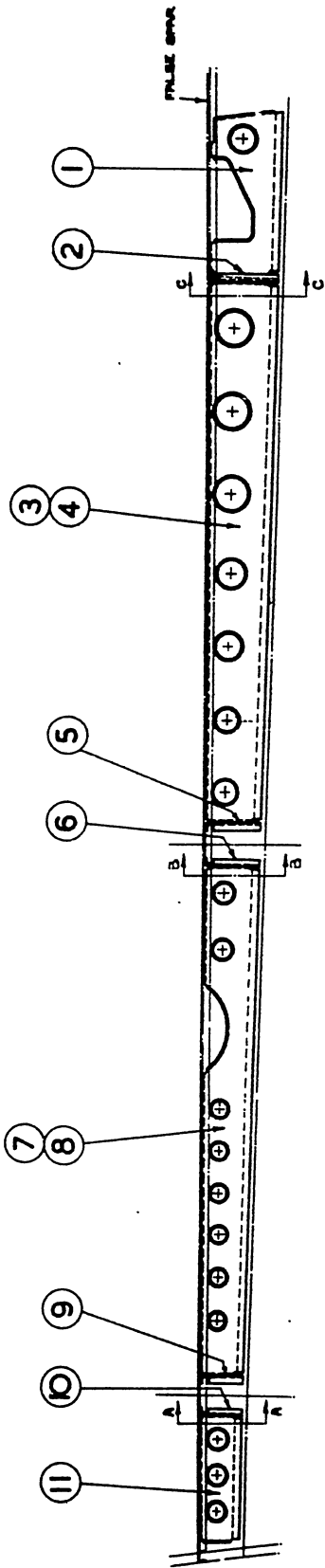


FIG 6/42

AILERON SHROUD.

FIG 6/42

FLAP, INNER PORTION (Mk. 3)

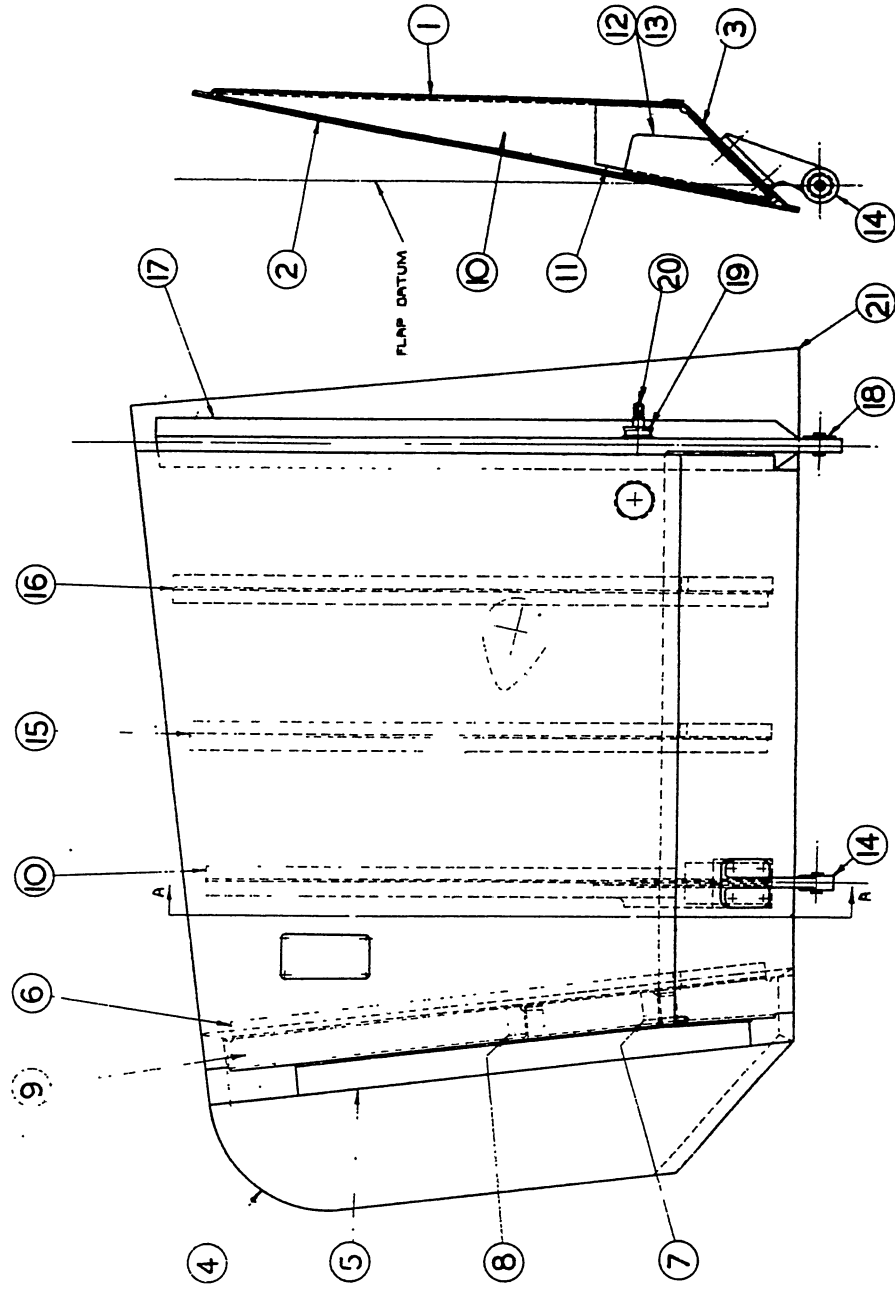
Key to items shown on Fig. No. 6/43

Assembly D.001605-6A

Key No.	Part No.		Material	Specification	S.W.G.	Description				
	L.H.	R.H.								
1	D.001683ND	D.001684ND	Alclad	D.T.D.390	22	Top skin				
2	D.001685ND	D.001686ND			22	Bottom skin				
3	D.001687ND	D.001688ND			20	Front skin				
4	D.001689ND	D.001690ND			14	Extension plate				
5	D.001753	D.001754			18	Stiffening angle				
6	D.001623	D.001624			20	Rib No. 18				
7	D.001749	D.001750			20	Stiffener				
8	D.001751	D.001752			20	Stiffener				
9	D.001758ND	D.001758ND			L.F. sheet	L.F.S.23	Packing block			
10	D.001834ND	D.001834ND			Alclad	D.T.D.390	20	Rib No. 17		
11	D.001761ND	D.001761ND					20	Stiffening plate		
12	D.002331ND— L.H.	D.002331ND— L.H.	M.S. plate	S.3 or D.T.D.124A	18	Hinge support bracket				
	D.002332ND— R.H.	D.002332ND— R.H.								
13	D.002333ND— L.H.	D.002333ND— L.H.					M.S. plate	S.3 or D.T.D.124A	8	Reinforcing plate
	D.002334ND— R.H.	D.002334ND— R.H.								
14	D.002289ND	D.002289ND	Dural. or alum. alloy	L.1 or D.T.D.423A	Forging	Hinge bracket assembled on D.0063A				
15	D.001608	D.001608	Alclad	D.T.D.390	20	Rib No. 16				
16	D.001607	D.001607			20	Rib No. 15				
17	D.001603	D.001604			Alum. mag. or alum. copper	D.T.D.300 or D.T.D.298	Casting	Hinge rib No. 14		
18	D.0085	D.0085	H.T.S.	S.2	Bar	Ball race housing				
19	D.001742	D.001742	M.S. plate	S.3 or D.H.A.28	20	Locking plate				
20	D.001715	D.001716	H.T.S.	S.11	Bar	Spindle				
21	D.001701ND	D.001702ND	Alclad	D.T.D.390	14	Reinforcing plate				

Assembled on
D.001609A

Assembled
on
D.001661
-2A



SECTION AA

FLAP, INNER PORTION (Mk. 5 and 20)

Key to Items shown on Fig. No. 6/43A

Assembly D.005060-1A

Key No.	Part No.		Material	Specification	S.W.G.	Description	
	L.H.	R.H.					
1	D.001683ND	D.001684ND	Alclad	D.T.D.390	22	Top skin	
2	D.001685ND	D.001686ND			22	Bottom skin	
3	D.001687ND	D.001688ND			20	Front skin	
4	D.002568ND	D.002569ND			14	Extension plate	
5	D.001753	D.001754				Stiffening angle	
6	D.001623	D.001624			18	Rib No. 18	
7	D.001749	D.001750			20	Stiffener	
8	D.001751	D.001752			20	Stiffener	
9	D.003007	D.003008	Alclad	D.T.D.390	20	Rib No. 17	
10	D.003009	D.003010			20	Stiffening plate	Assembled on D.003005-6
11	D.003022ND-L.H.	D.003022ND-L.H.	M.S. plate	S.3 or D.T.D.124A	18	Hinge support bracket	Assembled on D.003020-1A
	D.003023ND-R.H.	D.003023ND-R.H.					
12	D.003024ND-L.H.	D.003024ND-L.H.	M.S. plate	S.3 or D.T.D.124A	$\frac{3}{8}$ n. x $\frac{1}{2}$ in.	Reinforcing plate	
	D.003025ND-R.H.	D.003025ND-R.H.					
13	D.002289ND	D.002289ND	Dural. or alum. alloy	L.1 or D.T.D.423A	Forging	Hinge bracket assembled on D.0063A	
14	D.003003	D.003004	Alclad	D.T.D.390	20	Rib No. 16	
15	D.003005	D.003006			20	Rib No. 15	
16	D.001603	D.001604	Alum. mag. or alum. copper H.T.S.	D.T.D.300 or D.T.D.298 S.2	Casting	Hinge rib No. 14	
17	D.0085	D.0085			Bar	Ball race housing	
18	D.001742	D.001742	M.S. plate	S.3 or D.H.A.28	20	Locking plate	
19	D.001715	D.001716	H.T.S.	S.11	Bar	Spindle	
20	D.005067ND	D.005068ND	Alclad	D.T.D.390	14	Reinforcing plate	
21	D.005071ND	D.005072ND	—	—	14	Stiffener	
22	D.005075ND	D.005076ND	—	—	10	Extension plate	

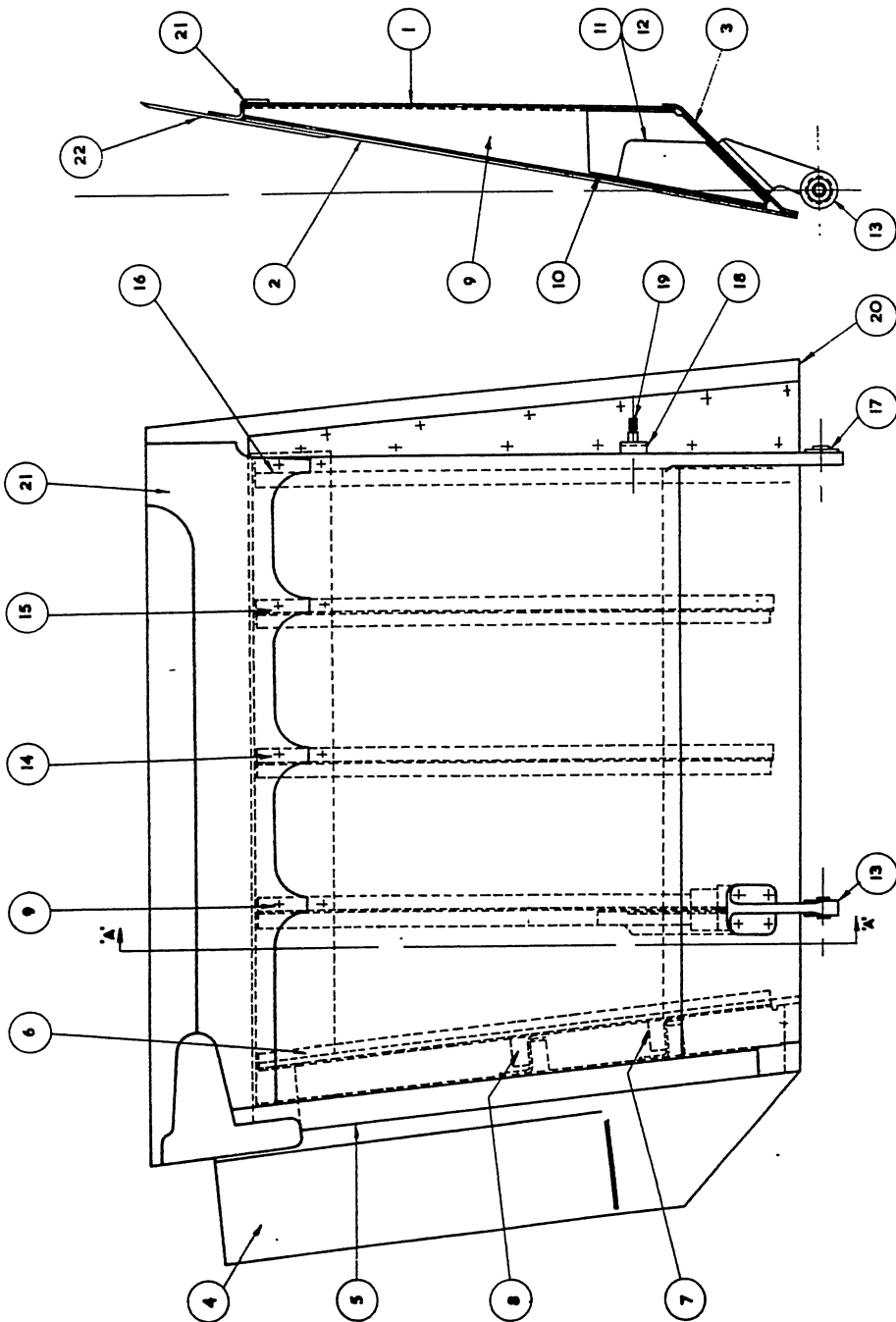


FIG.6/43A

INNER PORTION OF FLAP.

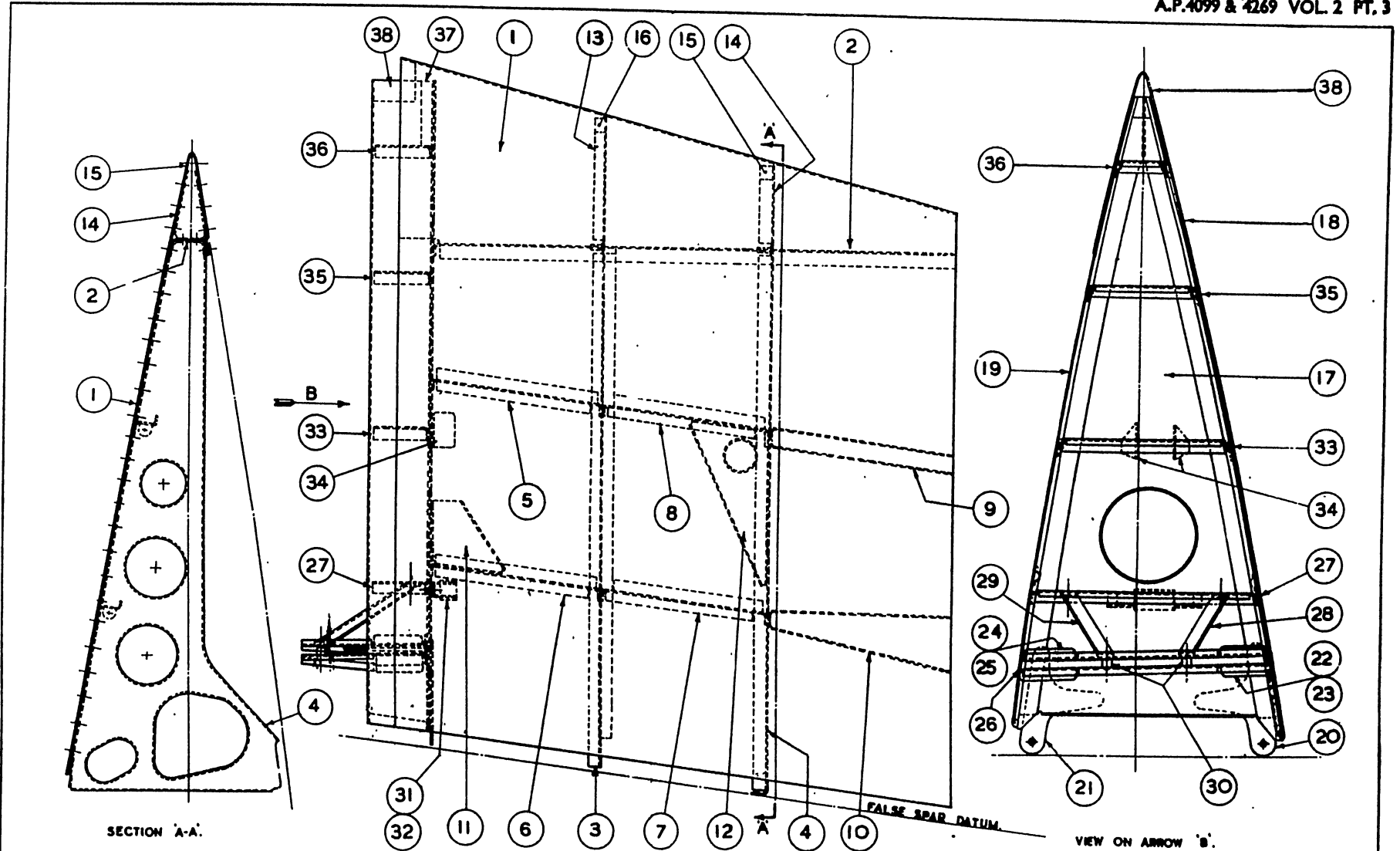
FIG.6/43A

INBOARD FLAP SHROUD (Mk. 3)

Key to items shown on Fig. No. 6/44

Assembly D.001729-30

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001747ND	D.001748ND	Alclad	D.T.D.390	22	Skin
2	D.001735	D.001736			20	Transverse stiffener
3	D.001733	D.001734			20	Stiffener No. 1
4	D.001731	D.001732			18	Shroud rib No. 1
5	D.00695	D.00696			20	Stiffener
6	D.00695	D.002976			20	Stiffener
7	D.00681	D.00682			20	Stiffener
8	D.00681	D.002976			20	Stiffener
9	D.001849	D.001850			20	Stiffener
10	D.002391	D.002392			16	Stiffener
11	—	D.003012A			16	Stiffener
12	—	D.003014A	18	Rear fixing bracket		
13	D.001743	D.001744	18	Rear fixing bracket		
14	D.001745	D.001746	22	Riblet No. 1		
15	D.002737	D.002738	22	Riblet No. 2		
16	D.002735	D.002736	—	Packing block		
17	D.00499	D.00500	—	Packing block		
18	D.00521	D.00522	20	Web-rear cone support		
19	D.00523	D.00524	20	Top boom		
20	D.00543	D.00543	20	Bottom boom		
21	D.00544	D.00544	14	Rib attachment plate		
22	L.00392B	L.00393B	14	Rib attachment plate		
23	L.00114	L.00114	20	Rib post } Assembled		
24	L.00394B	L.00395B	18	Bearing plate } on L.00392-3A		
25	L.00114	L.00114	20	Rib post } Assembled		
			18	Bearing plate } on L.00394-5A		
26	L.00350	L.00350	Dural.	L.1 or L.3	Bar or Sht.	
			Bakelite	F.294	Sht.	Packing block
			Red fibre	Commercial		
27	D.00525	D.00526	Alclad	D.T.D.390	20	Former No. 1
28	D.001563	D.001563			10	Top stay
29	D.001564	D.001564			10	Bottom stay
30	D.001566	D.001566	Dural.	T.4	17	$\frac{1}{4}$ in. o/d
31	L.00396B	L.00396B	Dural.	D.T.D.423A	Bar	Distance piece
32	L.00396C	L.00396C	M.S. plate	D.H.A.28	20	Bracket } Assembled on L.00396A
33	D.00527	D.00528	M.S. plate	D.H.A.28	20	"U" piece }
34	L.00397	L.00398	Alclad	D.T.D.390	20	Former No. 2
			Alclad	D.T.D.390 or L.38	16	Rear attachment bracket
35	D.00529	D.00530	Alclad	D.T.D.390	20	Former No. 3
36	D.00719	D.00720			20	Former No. 4
37	D.00531	D.00531			20	Bracket
38	D.001339A	D.001340A			—	Packing block
			L.F. sheet	L.F.S.23		



INBOARD FLAP SHROUD (Mk. 5 and 20)

Key to items shown on Fig. 6/44A

Assembly D.001729-36

Key No.	Part No.		Material	Specification	S.W.G.	Description		
	Port	Starboard						
1	D.001747ND	D.001748ND	Alclad	D.T.D.390	22	Skin		
2	D.001735	D.001736			20	Transverse stiffener		
3	D.001733	D.001734			20	Stiffener No. 1		
4	D.001731	D.001732			18	Shroud No. 1		
5	D.00695	D.00696			20	Stiffener		
6	D.002975	D.002976			20	Stiffener		
7	D.00681	D.00682			20	Stiffener		
8	D.00681	D.002976			20	Stiffener		
9	D.001849	D.001850			16	Stiffener		
10	D.002391	D.002392			16	Stiffener		
11		D.003012A	Alclad	D.T.D.390 or L.38	18	Rear fixing bracket		
12		D.003014A			18	Rear fixing bracket		
13	D.001743	D.001744	Alclad	D.T.D.390	22	Riblet No. 1		
14	D.001745	D.001746			22	Riblet No. 2		
15	D.002737	D.002738	L.F.S.	L.F.S.23	—	Packing block		
16	D.002739	D.002740			—	Packing block		
17	D.00499	D.00500	Alclad	D.T.D.390	20	Web—rear cone support		
18	D.00521	D.00522			20	Top boom		
19	D.00523	D.00524			20	Bottom boom		
20	D.00524	D.003026	Alclad	D.T.D.390 or L.38	14	Rib attachment plate		
21	D.002936	D.002937			14	Rib attachment plate		
22	L.00392B	L.00393B			20	Rib post		
23	L.00114	L.00114			18	Bearing plate	} Assembled on D.00392-3A	
24	L.00394B	L.00395B			20	Rib post		} Assembled on L.00394-5A
25	L.00114	L.00114			18	Bearing plate		
26	L.00350	L.00350			} Dural. Bakelite or Red fibre	L.1 or L.3 F.294 Comml.	Sheet	Packing block
27	D.00525	D.00526					Bar	
28	D.001563	D.001563			Alclad	D.T.D.390	20	Former No. 1
29	D.001564	D.001564					10	Top stay
30	D.001566	D.001566	10	Bottom stay				
31	L.00396B	L.00396B	Dural.	T.4 or D.T.D.423A	17 or Bar	$\frac{5}{16}$ in. o/d distance piece		
32	L.00396C	L.00396C			20		Bracket	} Assembled on L.00396A
33	D.00527	D.00528	M.S.P.	D.H.A.28	20	"U" piece		
34	L.00397	L.00398	Alclad	D.T.D.390	20	Former No. 2		
			Alclad	D.T.D.390 or L.38	16	Rear attachment bracket		
35	D.00529	D.00530	Alclad	D.T.D.390	20	Former No. 3		
36	D.00719	D.00720			20	Former No. 4		
37	D.00531	D.00531			20	Bracket		
38	D.001339A	D.001340A	L.F.S.	L.F.S.23	—	Packing block		

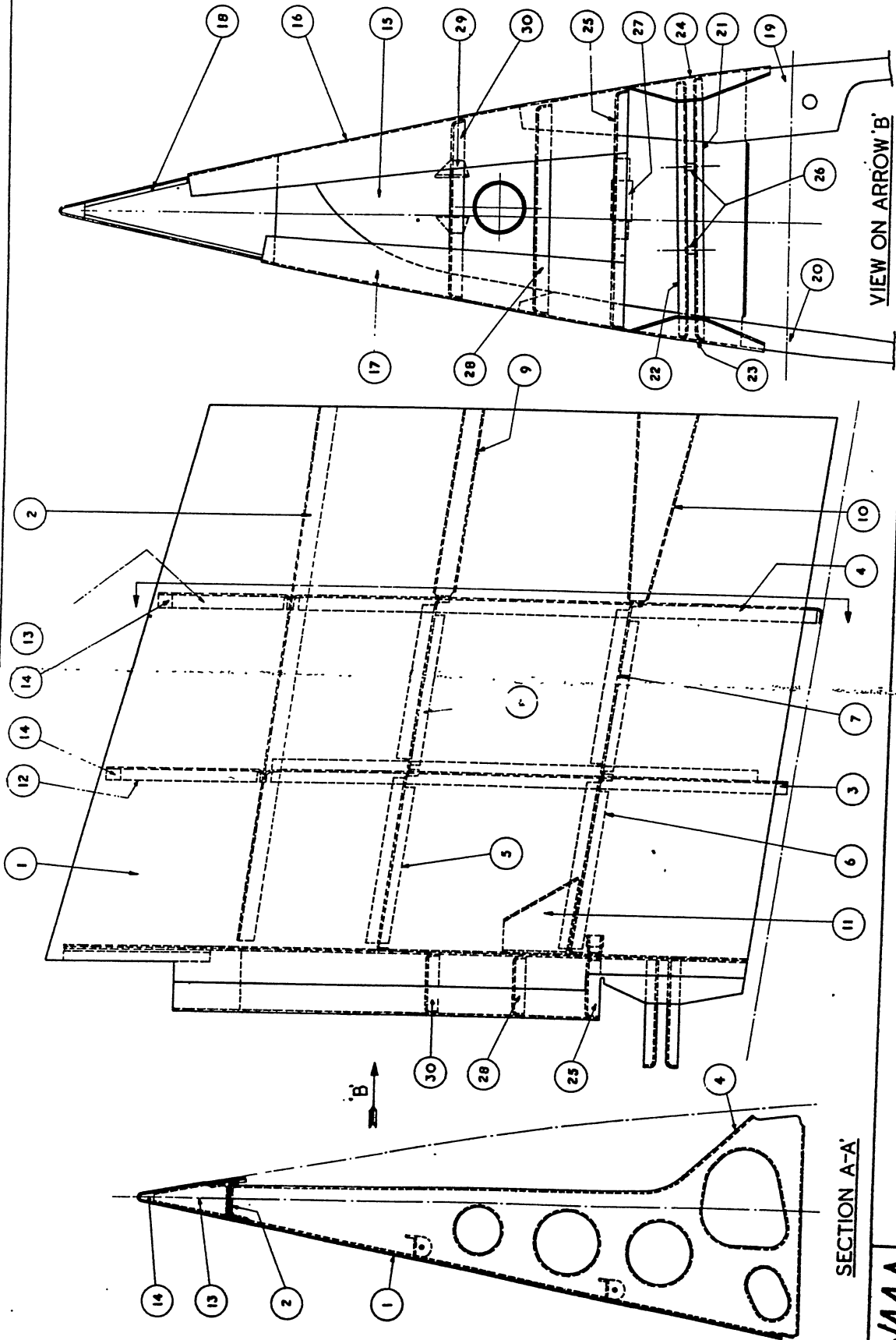


FIG.6/44A

INBOARD FLAP SHROUD

FIG.6/44A

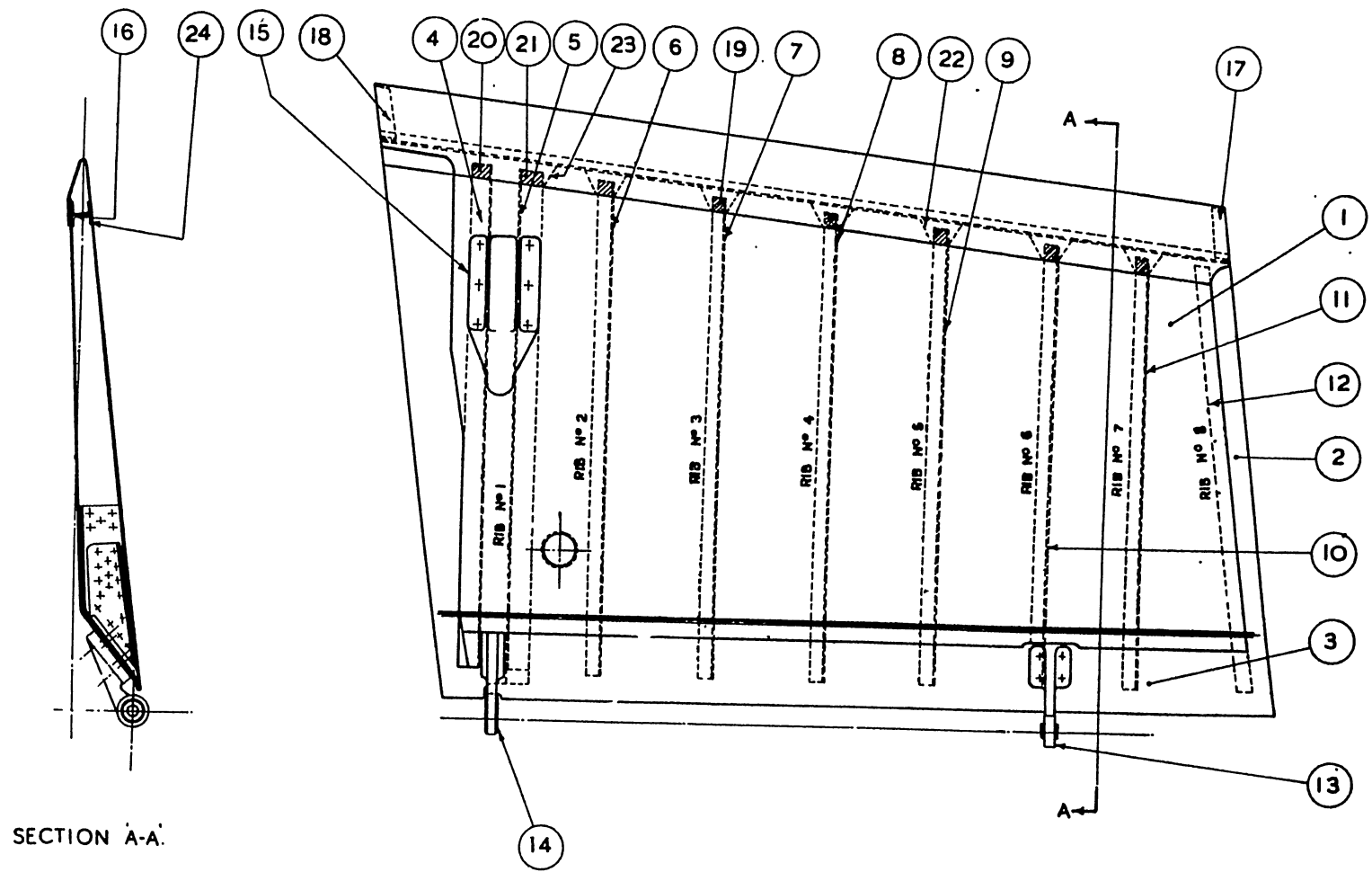


FIG.6/45

OUTER PORTION OF FLAP.

FIG.6/45

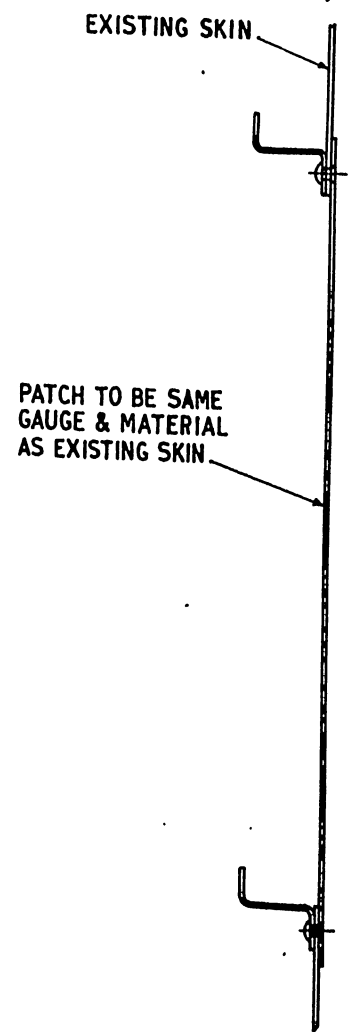
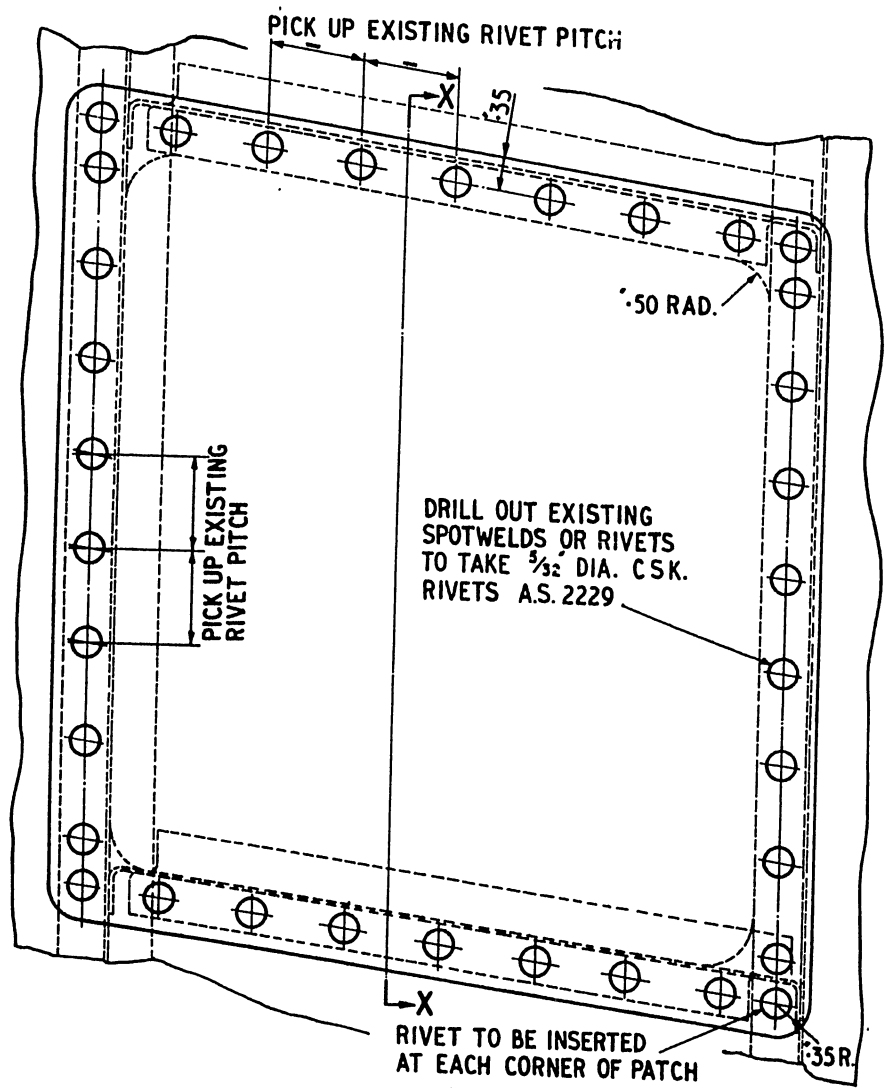


Fig. 6/46. Patch repair to flap shroud skin

RESTRICTED

OUTBOARD FLAP SHROUD

Key to Items shown on Fig. 6/47

Assembly D.008009-10A

Key No.	Part No.		Specification	S.W.G.	Description	
	Port	Starboard				
1	D.008021ND	D.008022ND	L.72	22	Top skin	
2	D.002107	D.002108		20	Trailing edge section	
3	D.007993	D.007994		20	Stiffener	
4	D.001875ND	D.001876ND		20	Rib	} Assembled on D.001611-2
5	D.001883ND	D.001884ND		20	Stiffening plate	
6	D.001679	D.001680		20	Gusset	
7	D.001721	D.001722		20	Stiffener	
8	D.002121ND	D.002122ND		20	Rib	} Assembled on D.002103-4
9	D.002123ND	D.002124ND		18	Support angle	
10	D.001681	D.001682		20	Bracket	
11	D.001843	D.001844		16	Stiffener	
12	D.001845	D.001846		16	Stiffener	
13	D.007997	D.007998		20	Stiffener	
14	D.007995	D.007996		20	Stiffener	
15	D.00693	D.00694		20	Stiffener	
16	D.002930	D.002931		20	Stiffener	
17	D.002101	D.002102		20	Stiffener	
18	D.002841	D.002842		20	Stiffener	
19	D.002111	D.002112		L.F.S.23		Trailing edge member
20	D.002849ND	D.002850ND	L.I or D.T.D.423A		Skin support member	
21	D.002752	D.002753	L.F.S.23		Packing block	
22	D.002261	D.002262	L.F.S.23		Packing block	
23	D.007989	D.007990	L.72	20	Stiffener	
24	D.007991	D.007992		20	Stiffener	

RESTRICTED

(A.L.25, Aug. 57)

DIVE BRAKE FLAP

Key to items shown on Fig. No. 6/48

Assembly **D.002175-4A, Mk. 3 and 5**
D.005041-2A, Mk. 20

Key No.	Part No.		Specification	S.W.G.	Description	
	Port	Starboard				
1	D.005593ND	D.005594ND		20	Bottom skin	
2	D.002191ND	D.002192ND		20	Top skin	
3	D.005591ND	D.005592ND		18	Front skin	
4	D.002199	D.002200		16	Spar	
5	D.002217ND	D.002218ND		18	Rib No. 1—	
6	D.002219ND	D.002220ND		18	pressing Doubling plate	Assembled on D.002177-8A
7	D.002221ND	D.002221ND		18	Angle	
8	D.002179	D.002180		18	Rib No. 1A—	pressing
9	D.002223ND	D.002224ND		18	Rib, pressing, outboard	
10	D.002225ND	D.002226ND		18	Rib, pressing, inboard	Rib No. 2 Assembled on D.002932-35A
11	D.002227ND	D.002228ND	L.72	18	Doubler plate	
	D.007429ND	D.007430ND				
12	D.002229ND	D.002230ND		14	Reinforcing plate	
13	D.002231ND	D.002232ND		18	Rib No. 3—	
14	D.002233ND	D.002234ND		18	pressing Extension plate	Assembled on D.002183-4A
15	D.002235ND	D.002235ND		18	Angle	
16	D.002861	D.002862		18	Angle	
17	D.002237ND	D.002238ND		18	Rib No. 4—	
18	D.002239ND	D.002240ND		18	pressing Extension plate	Assembled on D.002185-6A
19	D.002869	D.002870		18	Angle	
20	D.005239ND	D.005235ND		18	Rib No. 5—	
21	D.002245ND	D.002246ND		18	pressing Doubling plate	Assembled on D.005099-5100A
22	D.005232ND	D.005233ND		18	Angle	
23	D.003096	D.003097		18	Reinforcing plate	
24	D.002201ND	D.002202ND	D.T.D.423A or L.I	—	Trailing edge	
25	D.002265ND	D.002266ND	L.F.S.23	—	Packing block	
26	D.002265	D.002265	D.T.D.300 or 298	—	Jack attachment fitting	
27	D.002263	D.002263	S.11	—	Jack attachment fitting	
28	D.002264	D.002264	S.I	—	Shackle	
29	D.002203	D.002204	L.72	18	Bracket	
30	D.002383ND	D.002384ND	L.40	—	Hinge block. Assembled on D.002195A	
31	D.002207	D.002208		12	Shear bracket	
32	D.002215ND	D.002215ND	L.72	18	Reinforcing plate	
33	D.002205	D.002206				
34	D.002291ND	D.002292ND	D.T.D.124A (Soft)	18	Bracket	
35	D.002335ND	D.002336ND	L.40	—	Bracket, assembled on D.002209-10 Hinge block, assembled on D.002211-2	
36	D.005045ND	D.005046ND	L.72	8	Extension skin	
37	D.005050ND	D.005050ND		Bar	Leading edge anchor block	
38	D.005049ND	D.005049ND	L.I	Bar	Trailing edge anchor block	
39	D.002813	D.002814				
40	D.002815	D.002816				
41	D.002817	D.002818	L.F.S.23	—	Packing block	
42	D.002819	D.002820				
43	D.002821	D.002822				
44	D.002823	D.002824				

Note.—Items apply to all marks of aircraft except as follows:—
39 to 44 are exclusive to Mk. 3 and 5
36 to 38 are exclusive to Mk. 20.

RESTRICTED

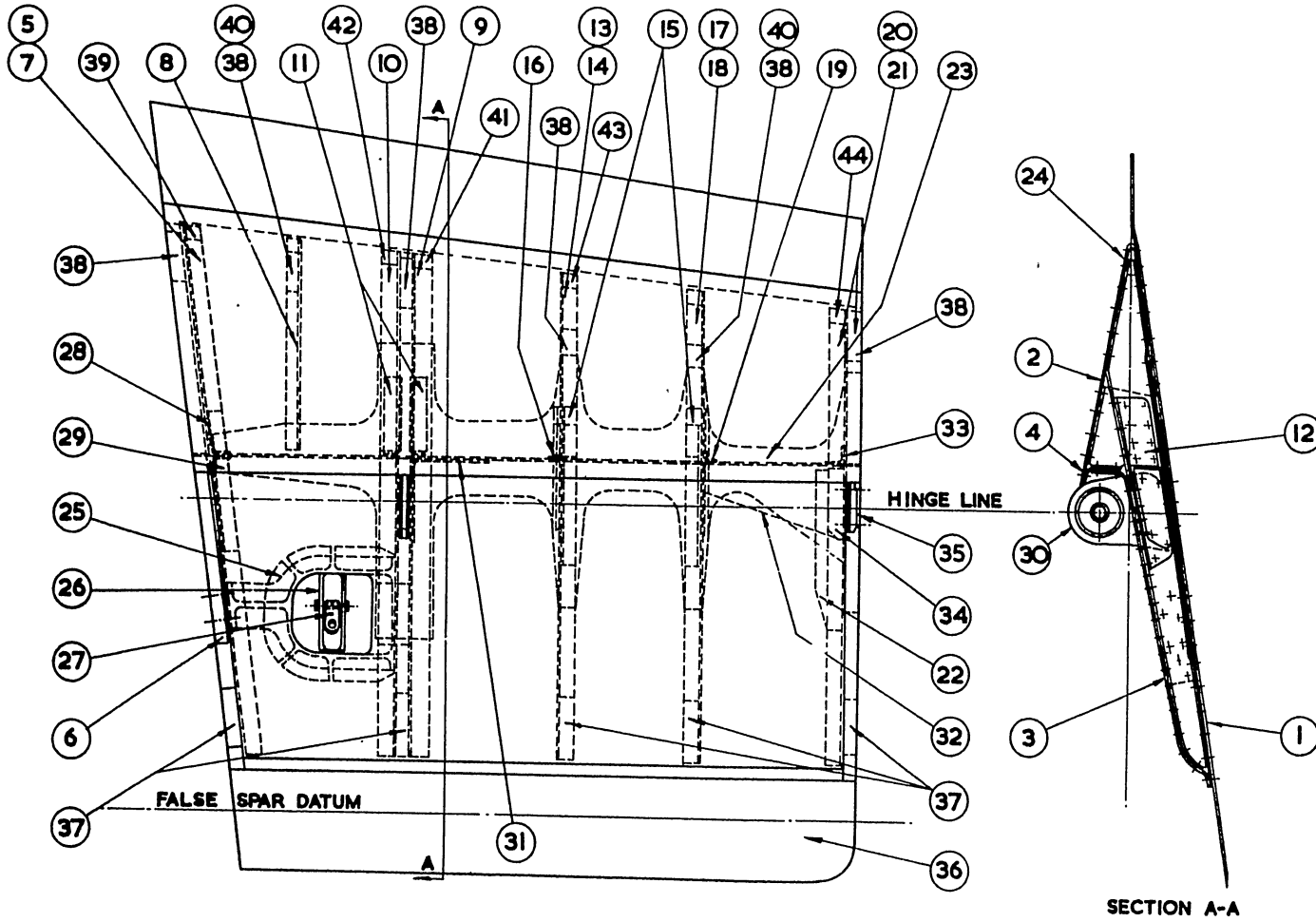


Fig.6/48. Dive brake flap

PP8777 215517/4878 B 57 1000 C&P Cp. 959(4)

RESTRICTED

(A.L.25, Aug. 57)

(Continued overleaf)

RESTRICTED

(A.L.25, Aug. 57)

DIVE BRAKE FLAP SHROUD

Key to items shown on Fig. No. 6/49

Assembly D.008007-8A

Key No.	Part No.		Specification	S.W.G.	Description
	Port	Starboard			
1	D.002355ND	D.002356ND	L.72	20	Top skin
2	D.002357ND	D.002358ND		20	Bottom skin
3	D.002359	D.002360		20	Bottom skin, outboard
4	D.002361	D.002362		20	Bottom skin, inboard
5	D.002367	D.002368		18	Cover plate
6	D.002349ND	D.002350ND		18	Reinforcing channel— assembled on D.002347-8A
7	D.002353ND	D.002354ND	L.I or D.T.D.423A	20	Shroud—assembled on D.002351-2A
8	D.002365ND	D.002365ND			Trailing edge member
9	D.002827	D.002828	L.F.S.23	20	Packing block
10	D.002829	D.002830			
11	D.002271ND	D.002272ND			
12	D.002270ND	D.002270ND	L.72	18	Rib No. 4 pressing
13	D.002279	D.002280		18	Reinforcing bracket
14	D.002275ND	D.002276ND		18	Corner bracket
15	D.002277	D.002278		D.T.D.124A	20
16	D.002281ND	D.002282ND	L.72	18	Reinforcing bracket
17	D.002283	D.002283		D.T.D.124A (soft)	18
18	D.002765ND	D.002766ND	L.72	18	Reinforcing plate
19	D.002407ND	D.002408ND		18	Stiffener
20	D.002295ND	D.002296ND		18	Support angle
21	D.002297ND	D.002298ND	D.T.D.300 or D.T.D.298	20	Rib No. 7 pressing
22	D.001209	D.001210		18	Stiffener
23	D.003981	D.003982		16	Joint plate
24	D.002149ND	D.002150ND		18	Tension strap
25	D.008053ND	D.008054ND	L.72	—	Main hinge bracket— assembled on D.002143-4A
26	D.008055ND	D.008056ND		20	Angle—outboard
27	D.007885	D.007885	L.I or D.T.D.423A	20	Angle—inboard
28	D.007983	D.007984	L.72	20	Packing block
29	D.007981	D.007982		20	Stiffener
				20	Stiffener

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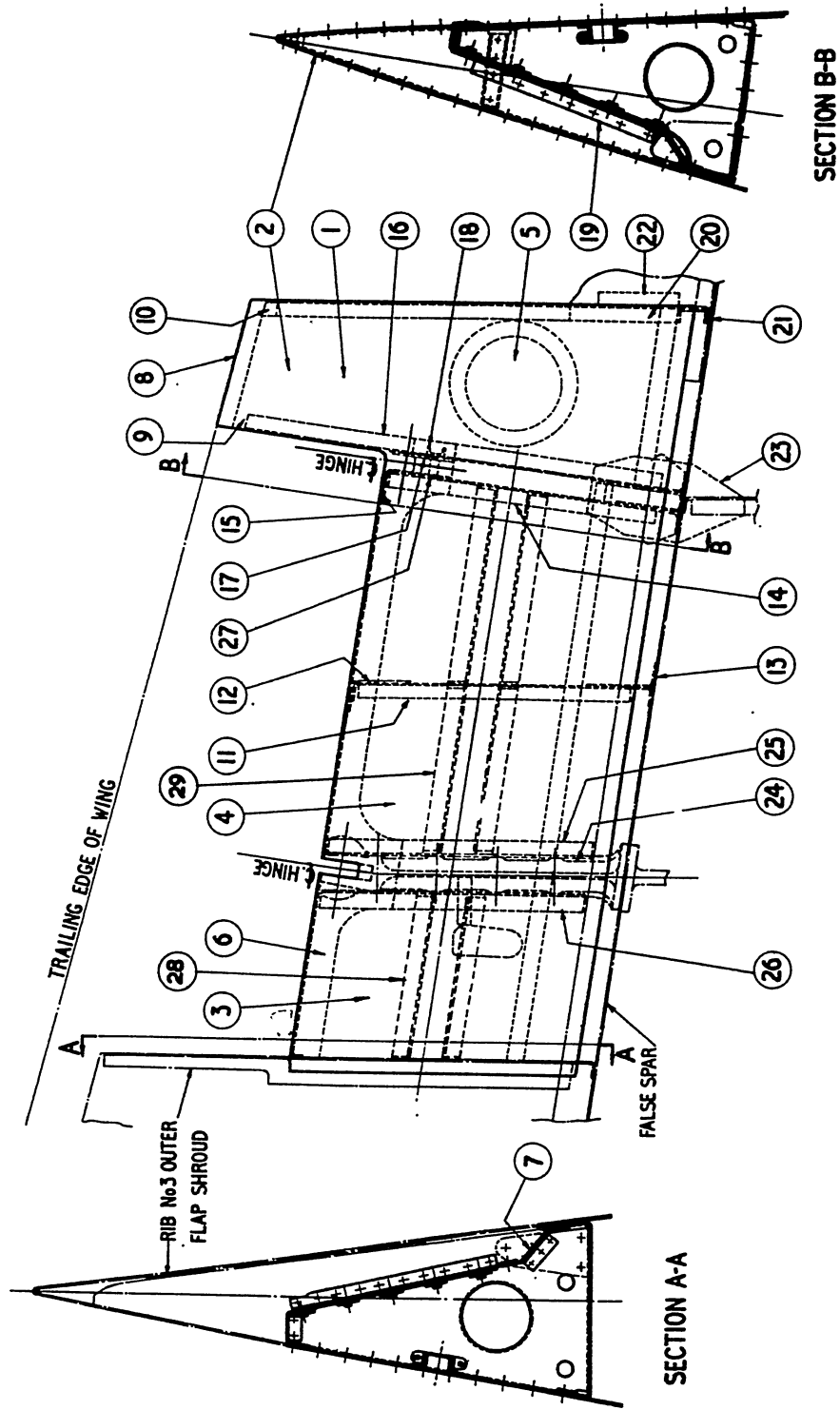


Fig. 6/49. Dive brake flap shroud

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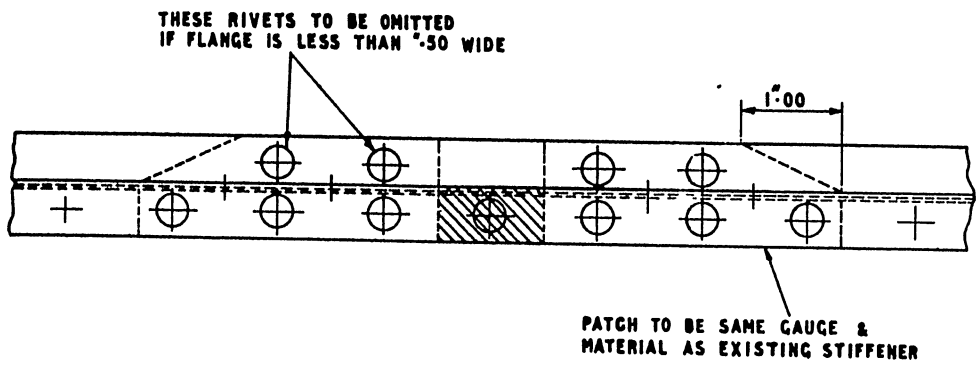
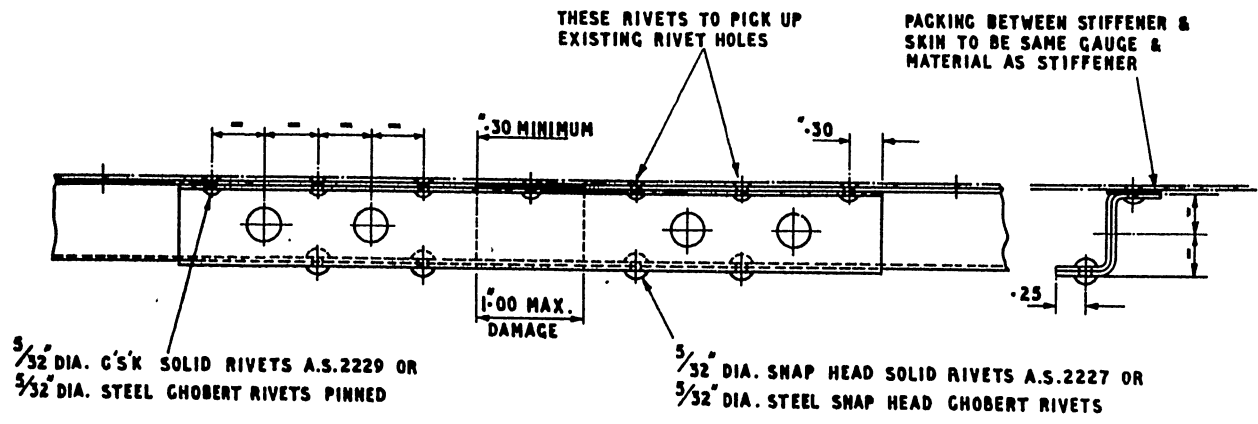


Fig.6/50. Repair to stiffener in flap shrouds and aileron

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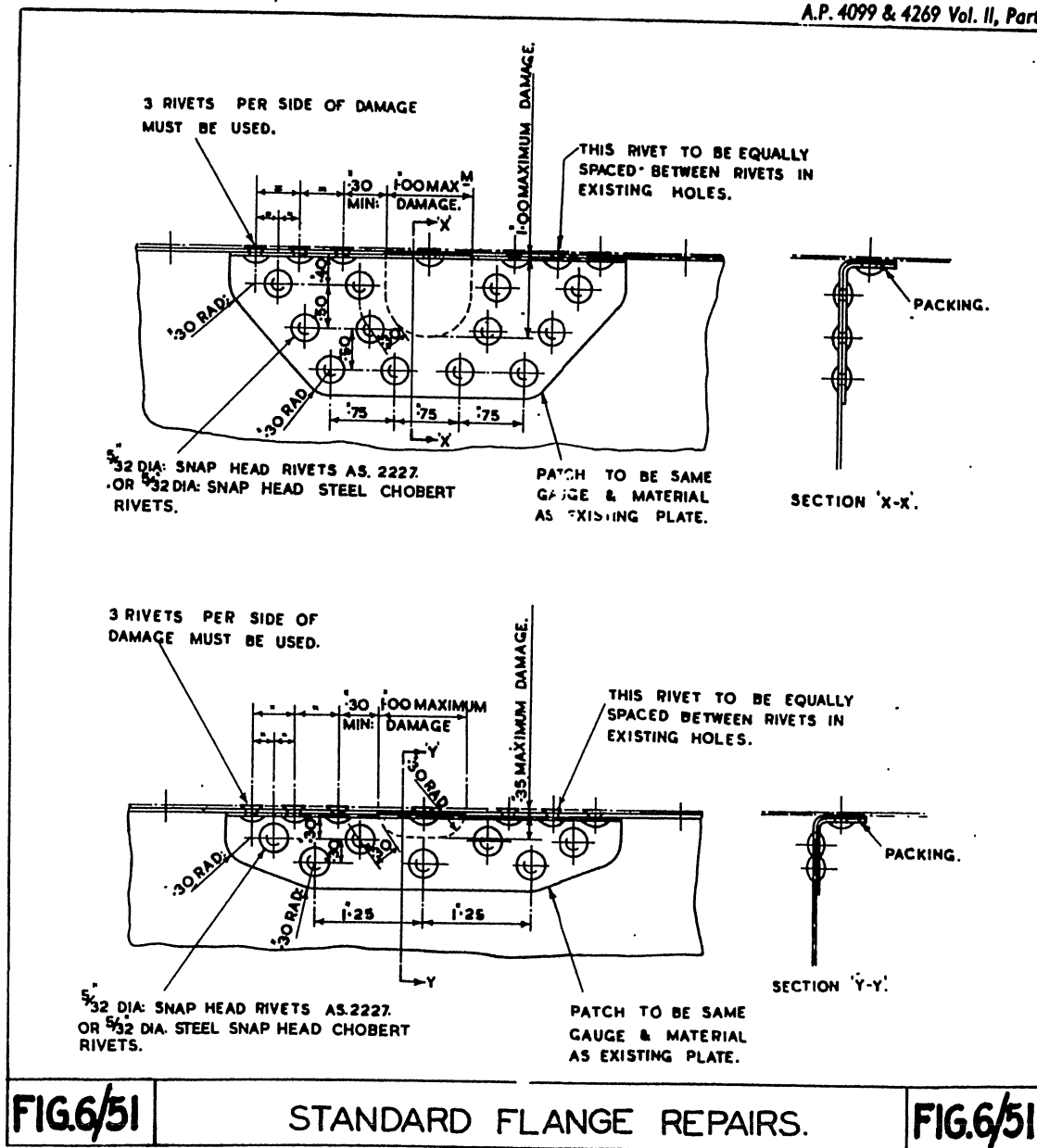


FIG.6/51

STANDARD FLANGE REPAIRS.

FIG.6/51

STUB BOOM

Key to items shown on Fig. No. 6/52

Assembly D.001973-4

Key No.	Part No.		Material	Specification	S.W.G.	Description
	L.H.	R.H.				
1	D.001961	D.001962	Alclad	D.T.D.390	12	Top shell
2	D.001963	D.001964			12	Bottom swell
3	D.001969	D.001970			18	Top diaphragm
4	D.001971	D.001972			18	Bottom diaphragm
5	D.002043ND	D.002044ND	Dural	L40	12	Stiffening angle—inboard
6	D.002045ND	D.002046ND			12	Stiffening angle—outboard
7	D.002039ND	D.002040ND			12	Stiffening angle—inboard
8	D.002041ND	D.002042ND			12	Stiffening angle—outboard
9	D.001165	D.001166	Alclad	D.T.D.390	14	Reinforcing plate
10	D.002713	D.002714			Forging	Jointing angle
11	D.001265ND	D.001265ND			14	Tapered packing—inboard
12	D.001266ND	D.001266ND			14	Tapered packing—outboard
13	D.002047ND	D.002048ND	Alclad	D.T.D.390	16	Joint plate—inboard
14	D.002049ND	D.002050ND			16	Joint plate—outboard
15	D.001989	D.001990			18	Diaphragm—top half
16	D.001991	D.001992			18	Diaphragm—bottom half
17	D.001282	D.001282			18	Strap plate

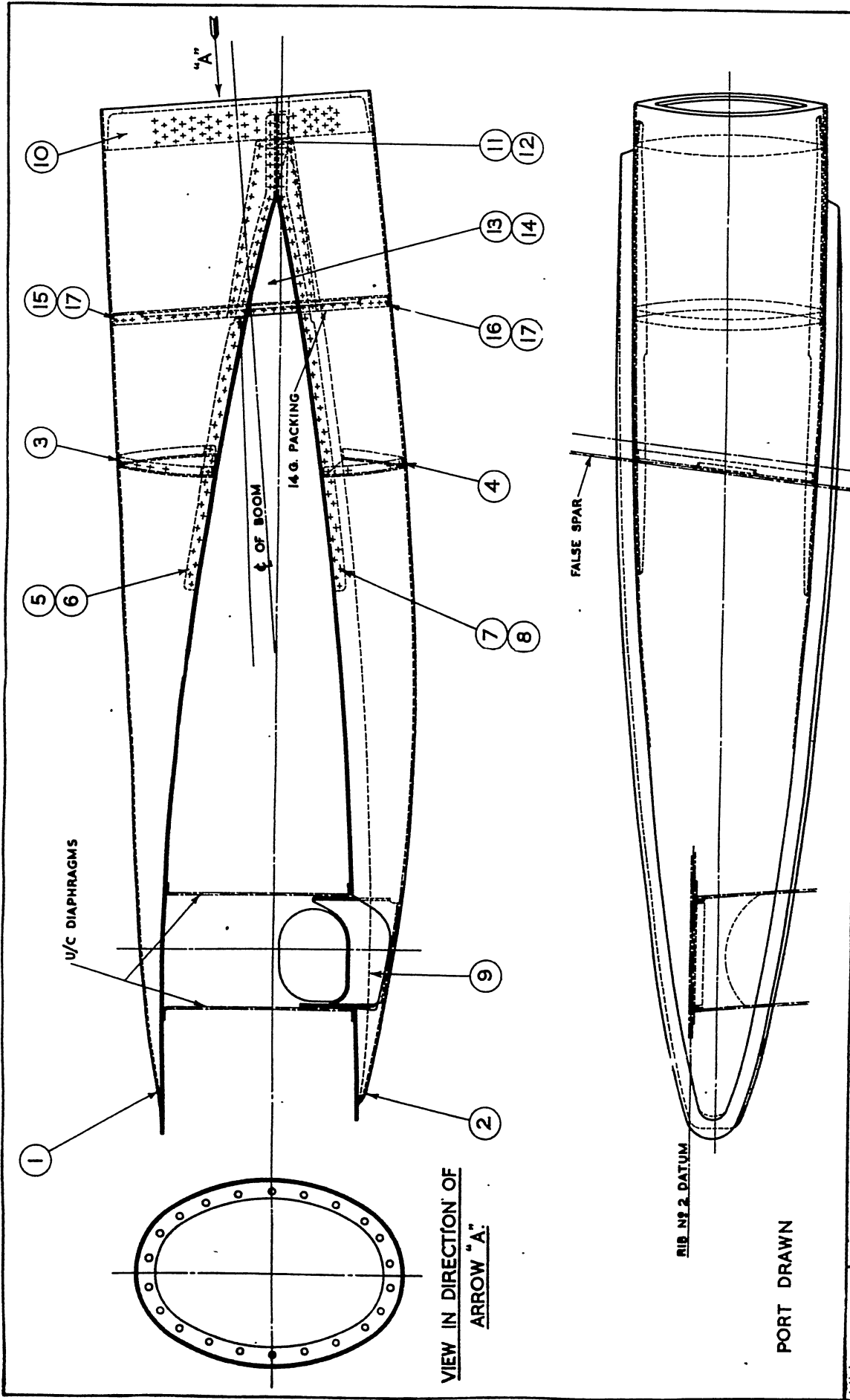


FIG. 6/52

STUB BOOM

FIG. 6/52

WING TIP (Mark 3)

Key to items shown on Fig. No. 4/53

Assembly D.00151-2A

Key No.	Part No.		Material	Specification	S.W.B.	Description		
	L.H.	R.H.						
1	D.001809ND	D.001810ND	Alclad	D.T.D.390 or L38	22	Top skin		
2	D.001811ND	D.001812ND			22	Bottom skin		
3	D.00159ND	D.00160ND			22	Rib		
4	D.00161ND	D.00162ND			22	Stiffener		
5	D.00163ND	D.00164ND			22			
6	D.00165ND	D.00166ND			22			
7	D.00167ND	D.00168ND			22			
8	D.00169	D.00170			2 mm. Perspex	D.T.D.339	22	Cover navigation light
9	D.00157ND	D.00158ND			Mang. alum. or Alclad	D.T.S.213A or D.T.D.390 or L38	18	
10	D.001233ND	D.001234ND	Alclad	D.T.D.390 or L38	22	Landing strip		
11	D.001237ND	D.001238ND	Alclad	D.T.D.390 or L38	22	Landing strip		
12	D.00155ND	D.00156ND	Mang. alum: or Alclad	D.T.D.213A or D.T.D.390 or L38	18	Leading edge strip		
13	D.002739ND	D.002740ND	Bakelite	294		Block Cover plate		
14	D.002535A	D.002535A						

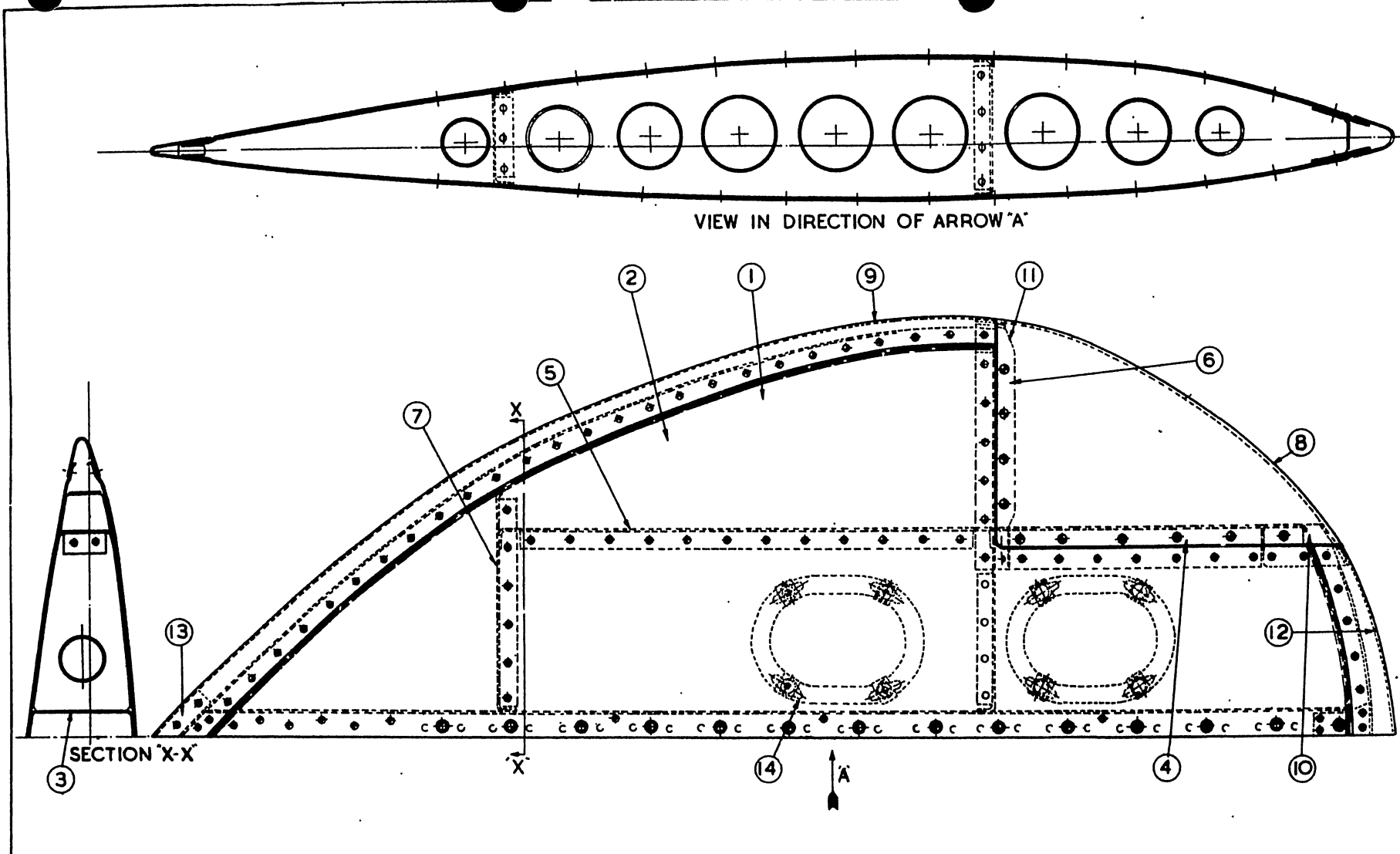


FIG.6/53

WING TIP

FIG.6/53

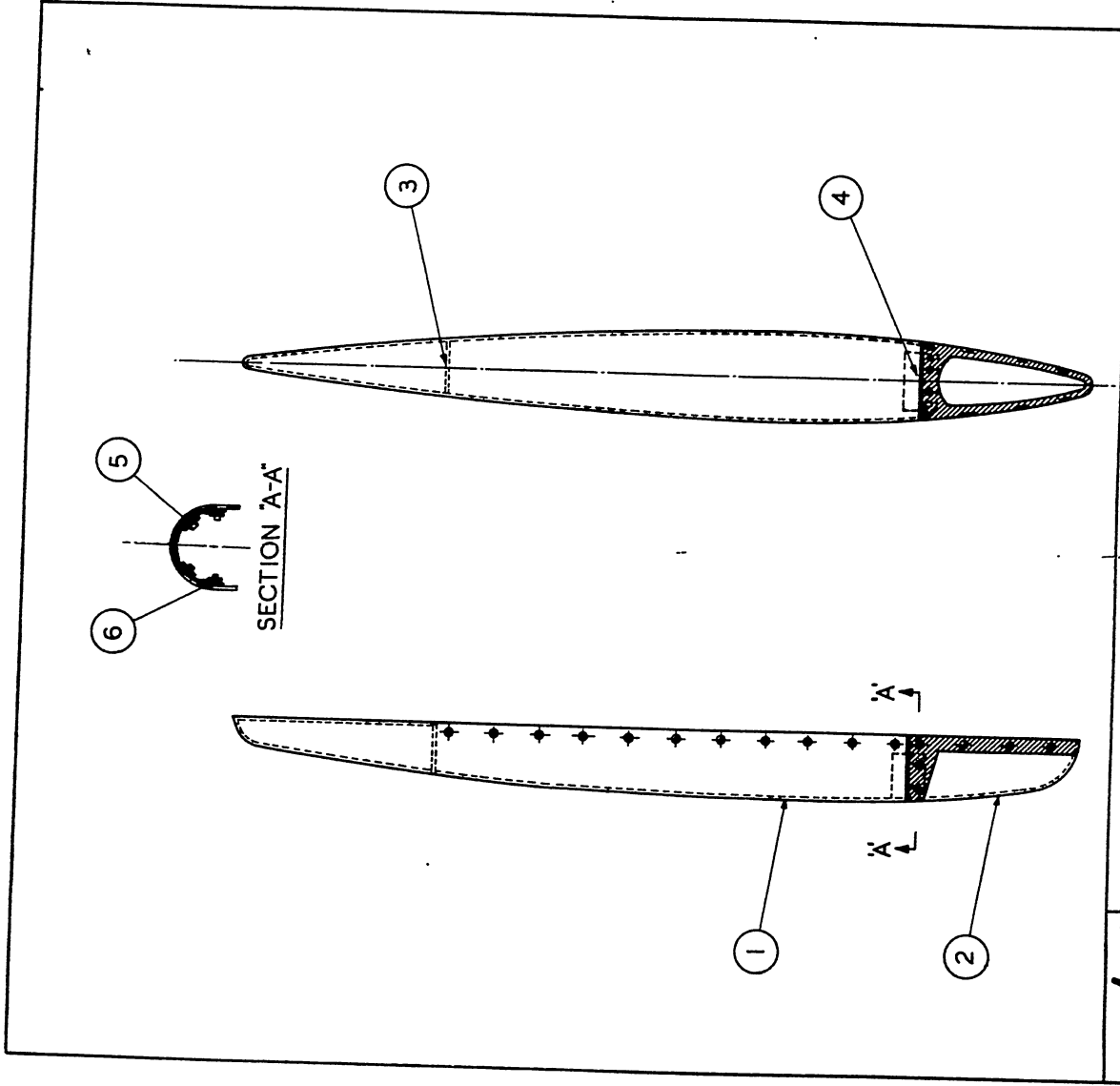


FIG.6/53A

WING TIP

FIG.6/53A

WING TIP (Mk. 5 and 20)

Key to Items shown in Fig. 6/53A

Assembly D.004537-8

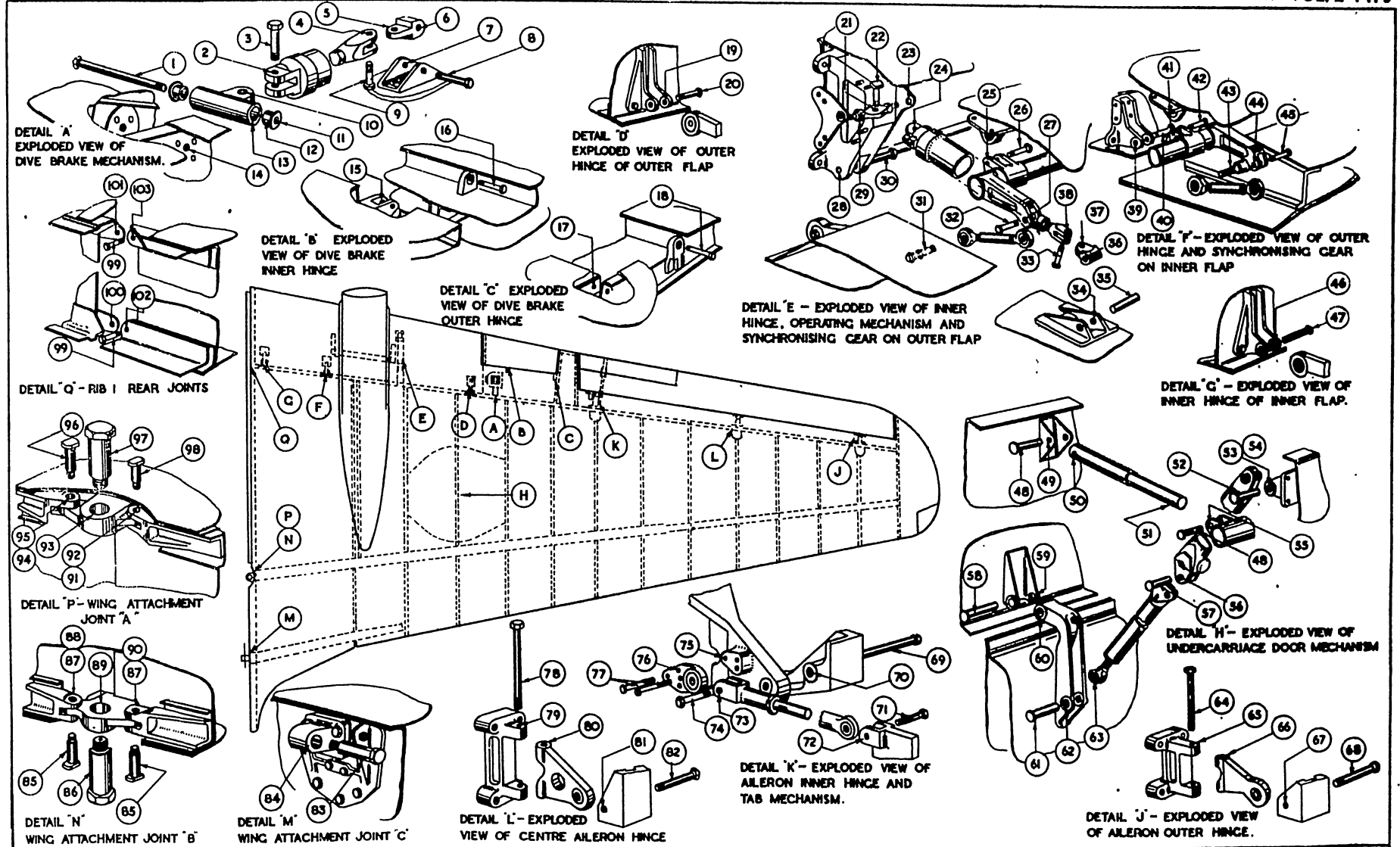
Key No.	Part No.		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	D.006539	D.006540	Mang. alum.	D.T.D.213	18	Wing tip fairing
2	D.006543	D.006544	Perspex	D.T.D.339	$\frac{1}{4}$ in.	Cover, wing tip navigation light
3	D.006555ND	D.006556ND	Mang. alum.	D.T.D.213	18	End diaphragm
4	D.006559ND	D.006559ND	Mang. alum.	D.T.D.213	16	Lap strip
5	D.006561ND	D.006561ND	Alclad	D.T.D.390	$\frac{1}{4}$ in.	Packing
6	D.006563ND	D.006563ND	Alclad	D.T.D.390	0-06 in.	Packing

MAINPLANE ATTACHMENTS AND FITTINGS

Limits of wear for items shown on Fig. No. 4/54

Key No.	Part No.	Description of Part	Nominal Diameter	Female High or Male Low Limit	Maximum Wear Limit	Plug Gauge
1	D.002337 ND	Special pin	0.25	-0.0035	-0.0045	Micrometer
2	A.I.R. 40022	Jack head	0.375	REFER TO A.P.1803		
3	D.002326	Special bolt	0.375	-0.0019	-0.0035	Micrometer
4	D.002323	Jack rod fork end	0.375	+0.0004	+0.0035	YA
5	D.002264	Shackle	0.375	+0.0004	+0.0035	YA
6	D.002264	Shackle	0.375	+0.0004	+0.0035	YA
7	D.002263	Jack attachment fitting	0.375	+0.0004	+0.0035	YA
8	D.002269	Special bolt	0.375	-0.0024	-0.0045	Micrometer
9	D.001769	Special bolt	0.375	-0.0024	-0.0045	Micrometer
10	D.002319-20	Trunnion	0.375	+0.0004	+0.0035	YA
11	D.002322	Bush (female)	0.25	+0.0003	+0.0035	WB
12	D.002322	Bush (male)	0.375	-0.0019	-0.0035	Micrometer
13	D.002319-20	Trunnion	0.375	+0.0004	+0.0035	YA
14	D.004297-8	Rib 5	0.25	+0.0003	+0.0035	WB
	D.003283-4	Rib 5A (Bush D.002015)	0.25	+0.0003	+0.0035	WB
15	D.002143-4	Brake hinge bracket, inner	0.375	+0.0004	+0.0035	YA
16	D.002325	Special bolt	0.375	-0.0019	-0.0035	Micrometer
17	D.001983-4	Brake hinge bracket, outer	0.3125	+0.0004	+0.0035	WC
18	D.002324	Special bolt	0.3125	-0.0029	-0.0045	Micrometer
19	D.001601	Flap hinge bracket	0.375	+0.0004	+0.0035	YA
20	D.001771	Special bolt	0.375	-0.0024	-0.0045	Micrometer
21	D.001660	Trunnion female	0.375	+0.0004	+0.0035	YA
22	G.0050	Special bolt	0.375	-0.0020	-0.0045	Micrometer
23	D.001655-6	Jack pickup fitting	0.5	+0.0004	+0.0030	WE
24	AIR 40008	Jack head	0.375	REFER TO A.P.1803		
25	D.00355	Torque tube fulcrum	0.3125	+0.0004	+0.0035	WC
26	D.001329	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
27	D.001705	Torque lever outboard	0.3125	+0.0004	+0.0035	WC
28	K.001012	Flap hinge bracket	0.3125	+0.0004	+0.0035	WC
29	D.001760	Trunnion male	0.5	-0.0030	-0.0050	Micrometer
30	D.001775	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
31	D.001716	Spigot on flap	0.375	-0.0019	-0.0050	Micrometer
32	D.001328	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
33	D.001769	Special bolt	0.375	-0.0024	-0.0045	Micrometer
34	D.001653	Jack attachment fitting	0.375	+0.0004	+0.0035	YA
35	D.001665	Special pin	0.375	-0.0020	-0.0045	Micrometer
36	D.001664	Shackle	0.375	+0.0004	+0.0035	YA
37	D.001664	Shackle	0.375	+0.0004	+0.0035	YA
38	D.001665	Jack rod fork end	0.375	+0.0004	+0.0035	YA
39	D.0094	Flap hinge bracket inboard	0.3125	+0.0004	+0.0035	WC
40	D.001775	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
41	D.001847	Torque tube fulcrum	0.3125	+0.0004	+0.0035	WC
42	D.001329	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
43	D.001715	Spigot	0.375	-0.0019	-0.005	Micrometer
44	D.001705	Torque lever (inboard)	0.3125	+0.0004	+0.0035	WC
45	D.001328	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
46	D.0093	Flap hinge bracket (inboard)	0.3125	+0.0004	+0.0035	WC
47	D.001775	Special bolt	0.3125	-0.0024	-0.0045	Micrometer
48	SP4816	Standard pin	0.1875	-0.0050	-0.0065	Micrometer
49	D.001026	Spring strut pick-up bracket	0.1875	+0.0035	+0.0045	WA
50	G.00131	Spring strut top end	0.1875	+0.0035	+0.0045	WA
	G.00132-4	End cap	0.1875	+0.0035	+0.0045	WA
51	G.00132	Spring strut, bottom end	0.1875	+0.0035	+0.0045	WA
52	G.00323 Mk. 8	Special pin	0.25	-0.0011	-0.0035	Micrometer
53	D.001825	Frame hinge bracket (front)	0.25	+0.0001	+0.0035	WB
54	D.001827	Frame hinge bracket (rear)	0.25	+0.0001	+0.0035	WB
55	D.00398	Frame spring strut pick-up	0.1875	+0.0001	+0.0045	WA
56	D.00398	Frame lower end	0.25	+0.0001	+0.0035	WB
57	G.00323 Mk. 7	Special pin	0.25	-0.0011	-0.0035	Micrometer
58	G.00323 Mk. 9	Special pin	0.25	-0.0011	-0.0035	Micrometer
59	D.001025	Door hinge bracket	0.25	+0.0001	+0.0035	WB

Key No.	Part No.	Description of Part	Nominal Diameter	Female High or Male Low Limit	Maximum Wear Limit	Plug Gauge
60	D.00139	Door hinge	0.25	+0.0001	+0.0035	WB
61	G.00323 Mk. 6	Special pin	0.25	-0.0011	-0.0035	Micrometer
62	G.00140	Door hinge radius rod pick-up	0.25	+0.0001	+0.0035	WB
63	G.00128	Radius rod lower end (G.00325 Mk. 1 bush)	0.25	+0.001	+0.0035	WB
64	AI 22G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
65	D.00104	Aileron hinge bracket outer	0.3125	+0.0005	+0.0035	WC
66	D.00105	Aileron hinge link outer	0.3125	+0.0005	+0.0035	WC
67	D.00106	Aileron hinge outer	0.3125	+0.0005	+0.0035	WC
68	AI 16G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
69	AI 27G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
70	D.00182-3	Aileron hinge inner	0.3125	+0.0005	+0.0035	WC
71	D.002302	Special bolt	0.1875	+0.0002	-0.0005	Micrometer
72	D.001571	Trim tab lever	0.1875	+0.0025	+0.0045	WA
73	D.001376	Trim gear front fork	0.1875	+0.0025	+0.0045	WA
74	D.002301	Special bolt	0.1875	+0.0002	-0.0005	Micrometer
75	D.001823-4	Hinge casing	0.1875	+0.0035	+0.0045	WA
76	D.001814	Quadrant plate	0.1875	+0.0035	+0.0045	WA
77	D.002303	Special bolt	0.1875	+0.0002	-0.0005	Micrometer
78	AI 31G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
79	D.00107	Aileron hinge bracket centre	0.3125	+0.0005	+0.0035	WC
80	D.00108	Aileron hinge link centre	0.3125	+0.0005	+0.0035	WC
81	D.00109	Aileron hinge centre	0.3125	+0.0005	+0.0035	WC
82	AI 16G	Standard bolt	0.3125	-0.0035	-0.0045	Micrometer
83	D.001254	Joint C bolt	0.625	-0.0014	-0.0025	Micrometer
84	D.003166	Joint C fitting	0.625	+0.0005	+0.002	VA
85	D.00982	Joint B front and rear bolt	0.4375	-0.0020	-0.0045	Micrometer
86	D.00478	Joint B main bolt	1.0	-0.0020	-0.0030	Micrometer
87	D.00471-2	Joint B front and rear holes L.H. and R.H.	0.4375	+0.0004	+0.0035	WD
88	D.004265-6	Rib 1 fitting L.H. and R.H.	0.4375	+0.0004	+0.0035	WD
89	D.00471-2	Joint B main hole	1.0	+0.0006	+0.0020	ZB
90	D.00979-80	Rib 1A fitting L.H. and R.H.	0.4375	+0.0004	+0.0035	WD
91	D.004263-4	Joint A front hole L.H. and R.H.	0.375	+0.0004	+0.0035	YA
92	D.00977-8	Rib 1A fitting L.H. and R.H.	0.375	+0.0004	+0.0035	YA
93	D.00469-70	Joint A main hole L.H. and R.H.	1.0	+0.0006	+0.0020	ZB
94	D.00469-70	Joint A rear hole L.H. and R.H.	0.5625	+0.0004	+0.0035	ZA
95	D.004263-4	Rib 1 fitting L.H. and R.H.	0.5625	+0.0004	+0.0035	ZA
96	D.00983	Joint A rear bolt	0.5625	-0.0020	-0.0045	Micrometer
97	D.00477	Joint A main bolt	1.0	-0.0020	-0.0030	Micrometer
98	D.00981	Joint A front bolt	0.375	-0.0020	-0.0045	Micrometer
99	AI 5, Y4E	Standard bolt	0.25	-0.0035	-0.0045	Micrometer
100	D.00699	Rib 1 tail section bottom	0.25	+0.0003	+0.0035	WB
101	D.00900	Rib 1 tail section top	0.25	+0.0003	+0.0035	WB
102	D.00543	Rib 1 rear joint bottom	0.25	+0.0003	+0.0035	WB
103	D.003026	Rib 1 rear joint top	0.25	+0.0003	+0.0035	WB



RESTRICTED

FIG. 6/56 REPAIR TO OUTER AIR DUCT

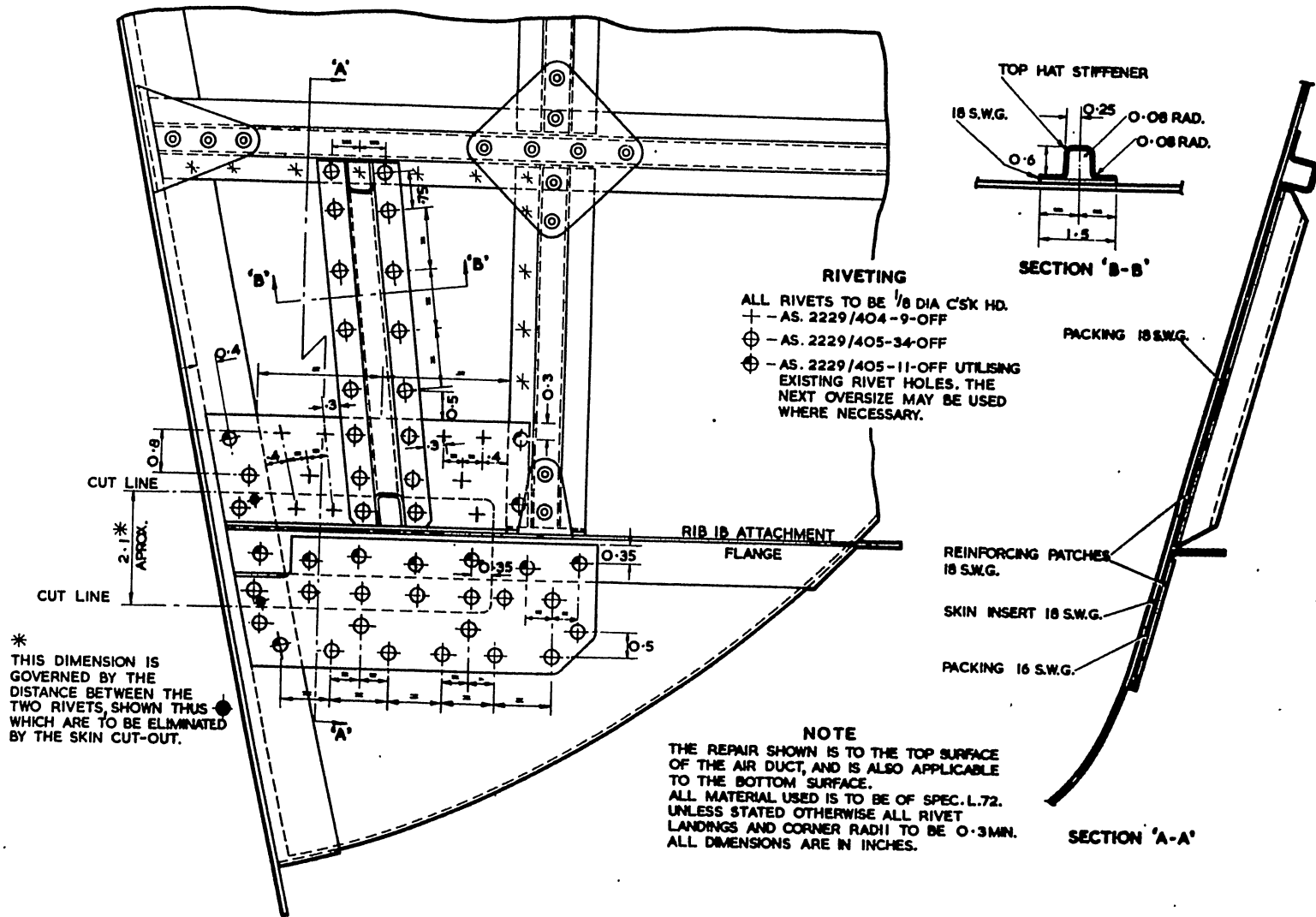


FIG. 6/57. APPLICATION OF FILLER
RESTRICTED

(A.L. 27, FEB. 58)

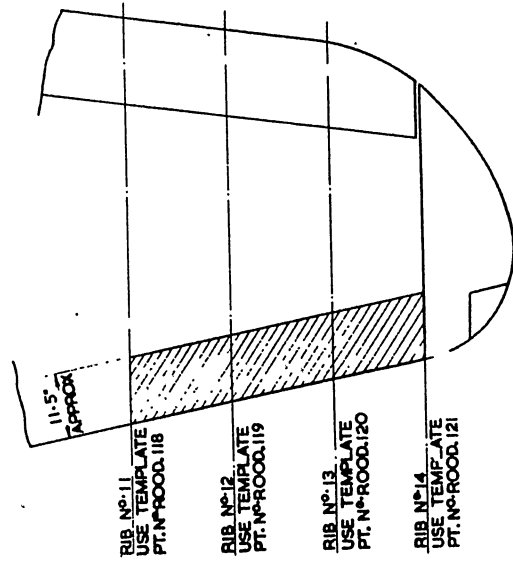


FIG. N° 1

WHEN A REPAIR HAS BEEN CARRIED OUT AFFECTING THE WING FINISH AT THE AREA SHOWN HATCHED IN FIG. N° 1 OR WHEN A NEW WING HAS BEEN FITTED, THE AIRCRAFT SHOULD BE FLOWN AT NOT LESS THAN 5000 FT. AND THE STALL CHECKED. IF THIS IS NOT SATISFACTORY THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED:-
CHECK THE WING CONTOUR AT THE STATIONS INDICATED IN FIG. N° 1 USING THE APPROPRIATE TEMPLATES. IT SHOULD BE NOTED HERE THAT THE TEMPLATE IS NOT USED IN THIS CASE TO CHECK THE WING CONTOUR FOR ACTUAL DIMENSIONAL CORRECTNESS BUT AS A STANDARD TO JUDGE THE CONTOUR AGAINST. IF THE ACTUAL WING CONTOUR DOES NOT SHOW A FAIR LINE OVER THE HATCHED AREA BUT SHOWS GAPS OF VARYING PROPORTIONS BETWEEN ITSELF AND THE TEMPLATE AS SHOWN IN FIG. N° 2 THE FILLER MUST BE APPLIED TO BUILD THE "HOLLOW" AREAS UP TO SUIT. THE AIM SHOULD BE TO PRODUCE A CONTOUR SIMILAR TO THAT OF THE TEMPLATE. THERE MAY BE A GAP BETWEEN THE TEMPLATE AND SKIN BUT THE GAP MUST BE FAIR OVER ITS LENGTH SEE FIG. N° 3.
TO OBTAIN THIS FAIR LINE IT WILL POSSIBLY BE FOUND THAT THE WING SECTION HAS BEEN INCREASED BY LIFTING THE CHORD LINE MARKED ON THE TEMPLATE ABOVE THE BUTT JOINT IN THE SKINS AT THE LEADING EDGE. THIS IS UNIMPORTANT PROVIDING THE LIMIT SHOWN IN FIG. N° 3 IS NOT EXCEEDED. IT MAY BE FOUND THAT THE WING CONTOUR DOES ALREADY POSSESS A LINE THAT IS FAIR TO THE TEMPLATE AND WITH THE CHORD LINE ON THE TEMPLATE AND THE BUTT JOINT COINCIDING. IN THIS CASE FILLER WILL BE ADDED OVER THE HATCHED AREA TO BUILD THE SECTION UP AS A WHOLE. GREAT CARE MUST BE TAKEN TO ENSURE THAT THE EDGES OF THE FILLER ARE SMOOTHED OFF TO MATCH THE REMAINDER OF THE SKIN PROFILE THERE MUST BE NO ABRUPT EDGES.
THE THICKNESS OF FILLER REQUIRED WILL VARY WITH THE INDIVIDUAL AIRCRAFT BUT SHOULD NOT EXCEED .06" IN MOST CASES ONLY A FRACTION OF THIS IS NEEDED.
USE FILLER AS DETAILED IN A.P. 2656 A, VOL. 1, SECT. 9, CHAP. 1 AND CHAP. 4 (D.T.D. 772).

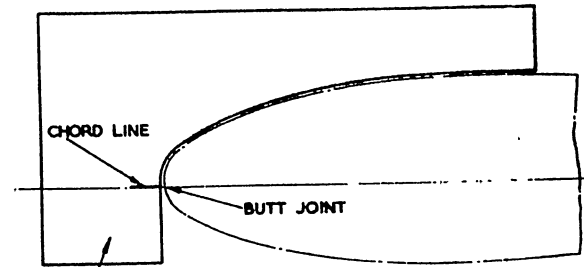


FIG. N° 2

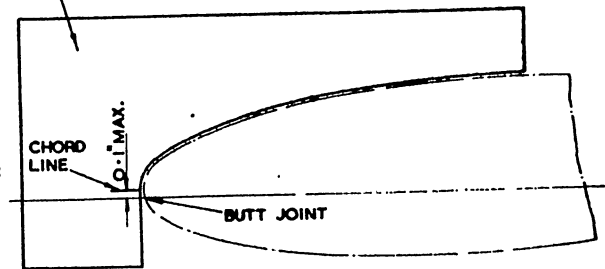


FIG. N° 3

CHAPTER 7

TAIL UNIT
(including tail booms)

CHAPTER 7

TAIL BOOM AND TAIL UNIT

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Patch repair to tail unit skins	7/20
Fin and tail plane, leading edge repairs	7/21
Rib repair	7/22
Standard flange repairs	7/23
Stringer repairs	7/24
Exploded view of control fittings, tail boom rear end	7/25
Tail unit diagram (two-seater type)	7/26
Tail plane and elevator (two-seater type)	7/27
Tail plane extension	7/28
Rudder (Mark 10 aircraft)	7/29
Tail unit fairing	7/30
Balancing of rudder	7/31A

Description

1. There is a difference in detail design in the tail units of single- and two-seater types of the aircraft. Generally the tail unit is of metal and comprises twin tail booms, fins and rudders and a single tail plane and elevator attached spanwise across the ends of the booms. In fig. 7/26 to 7/29 the two-seater tail plane is separately illustrated, the single-seater tail plane being illustrated in fig. 7/2. The method to be adopted in repairing damage to either type is the same.

Definitions of negligible and repairable damage

2. Definitions of damage with references to the figures illustrating suitable methods of repair will be found listed in the table overleaf where also reference is made to the relevant key diagrams for the various members concerned.

Wear limits

3. Wear limits for all male and female parts of the principal fittings in the tail boom and tail unit will be found listed in tables opposite the pertinent key diagrams and reference should be made to Chap. 1, para. 14, for details of the method to be used in applying the information included in the tables.

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TAIL BOOM AND TAIL UNIT

Definitions of negligible and repairable damage

Component	Damage definition		Repair fig. No.	Repair material item No.	Key diagram fig. No.	
	Negligible damage	Repairable damage				
TAIL BOOM						
Skin						
Top and bottom panels	Dents or bruises 0.03 in. deep 1.0 in. dia. 12.0 in. apart	4.0 in. dia. 18.0 in. apart	7/3	13, 16, 40, 41	} 7/1 7/26	
Side panels	Dents or bruises 0.05 in. deep 2.0 in. dia. 12.0 in. apart	0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 4.0 in. x 2.5 in. } 18.0 in. apart 8.0 in. x 4.0 in. } 8.0 in. insertion } 24.0 in. apart 16.0 in. insertion }	7/18 7/7 7/4 7/6 7/5	16, 38, 39, 57, 58 13, 16, 38, 39, 41 16, 35, 39 13, 38, 39		
Diaphragms	Dents or bruises 0.03 in. deep 1.5 in. dia. 12.0 in. apart	0.5 in. dia. 12.0 in. apart Renewal of flange between stringers (Two only in a stringer, 12.0 in. apart)	7/18 7/6	16, 58, 39, 57, 58 13, 16, 38, 39, 41		
Stringers	Dents or bruises 0.02 in. deep 0.5 in. dia. 12.0 in. apart	Insertion up to 12.0 in. 24.0 in. apart	7/24	16, 28, 29, 38, 39		
TAIL UNIT						
Skins						} 7/8, 7/9, 7/10, 7/15, 7/16, 7/27, 7/28, 7/29
		0.5 in. dia. } 12.0 in. apart 1.0 in. dia. } 2.0 in. dia. } 3.0 in. dia. }	7/18 7/19	16, 38, 39, 55, 65 19, 20, 35, 36, 45, 55, 64		
		5.0 in. dia. } 18.0 in. apart 8.0 in. x 5.0 in. } 8.0 in. insertion } 24.0 in. apart at nose	7/20 7/21	18, 19, 20, 37, 38, 42, 43 18, 19, 45, 46, 56, 65		
Spars	Dents or bruises 0.03 in. deep 1.0 in. dia. 12.0 in. apart	0.5 in. dia. } 18.0 in. apart 1.0 in. dia. } 2.0 in. dia. }	7/18	16, 38, 39, 55, 65		
Webs		1.0 in. wide involving 1.0 in. depth of web	7/23	19, 20, 28, 29, 53, 54, 61		
Flanges						
Ribs						
Webs						
Flanges						
Stringers	Dents or bruises 0.02 in. deep 1.0 in. dia. 12.0 in. apart	Insertions up to 12.0 in. length. Applies to single and double stringers. Insertions must be at least 24.0 in. apart	7/24	16, 28, 29, 38, 39		
Fairings						
Skin	Dents or bruises 0.03 in. deep 1.0 in. dia. 12.0 in. apart	2.0 in. dia. 12.0 in. apart	7/18	16, 38, 39, 56, 65	} 7/30	
Ribs		1.0 in. dia. } 1.0 in. wide, involving 1.0 in. depth of web	7/23	19, 20, 28, 29, 52, 53, 61		

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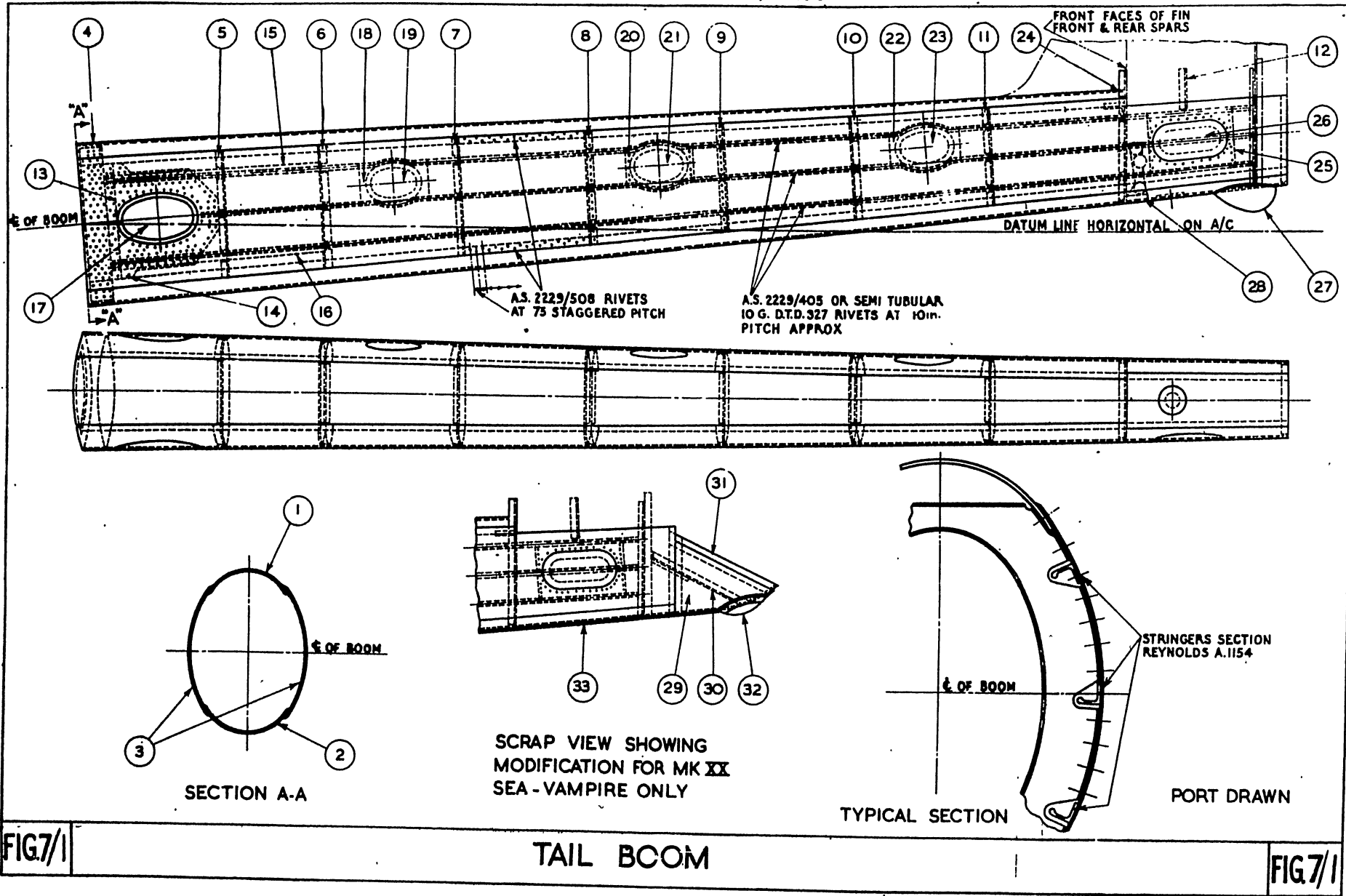
TAIL BOOM

Key to Items shown on fig. 7/1

Assembly J.00551-2, Mk. 3 and 5
J.001732, Mk. 20

Key No.	Part numbers		Material	Specification	S.W.G.	Description			
	Port	Starboard							
1	J.00657ND	J.00657ND	Alclad	D.T.D.390	10	Top plate			
2	J.00658ND	J.00658ND			10	Bottom plate			
3	J.00659ND—L.H. J.00660ND—R.H.	J.00660ND—L.H. J.00659ND—R.H.			16	Side plate			
4	J.001202	J.001202	Dural	L.40	Forging	Jointing angle			
5	J.00931ND	J.00932ND				20	Diaphragm—assembled on J.00691-2A		
6	J.00933ND	J.00934ND				20	Diaphragm—assembled on J.00693-4A		
7	J.00935ND	J.00935ND				20	Diaphragm—assembled on J.00695-6A		
8	J.00937ND	J.00938ND				20	Diaphragm—assembled on J.00697-8A		
9	J.00939ND	J.00939ND				20	Diaphragm—assembled on J.00699-700A		
10	J.00941ND	J.00942ND				20	Diaphragm—assembled on J.00701-2A		
11	J.00943ND	J.00944ND				20	Diaphragm—assembled on J.00703-4A		
12	J.00763	J.00763				20	Diaphragm		
13	J.00621ND—L.H. J.00622ND—R.H.	J.00621ND—L.H. J.00622ND—R.H.				Alclad	L.38 or D.T.D.390	18	Packing plate
14	J.00623ND—L.H. J.00624ND—R.H.	J.00623ND—L.H. J.00624ND—R.H.						18	
15	J.00619ND	J.001232ND	14	Reinforcing plate					
16	J.001233ND	J.00620ND	—	Stringer					
17	J.00618ND	J.00618ND	—	—	—	Reynolds A.115+			
18	J.00957ND	J.00957ND	16	Door					
19	J.0063	J.0063	18	Nut plate—assembled on J.0066A					
20	J.00958ND	J.00958ND	16	Cover plate					
21	J.0064	J.0064	18	Nut plate—assembled on J.0067A					
22	J.00959ND	J.00959ND	16	Cover plate					
23	J.0065	J.0065	18	Nut plate—assembled on J.0068A					
24	J.00766	J.00766	16	Cover plate					
25	J.001589ND	J.001589ND	20	Bracket					
26	J.00133	J.00133	18	Reinforcing plate					
27	J.00484A	J.00484A	16	Cover plate					
28	K.00355A	K.00355A	—	—	—	Assembly of shock pad			
29	J.001747ND	J.001747ND	—	—	—	Bottom control bracket			
30	J.001749	J.001749	Alclad	D.T.D.390	18	Extension plate			
31	J.001745ND	J.001745ND	—	—	—	Shock pad diaphragm			
32	J.001748	J.001748	—	—	—	Lower nut plate			
33	J.001753ND	J.001753ND	M.S.	S.3	12	Shock pad diaphragm Rubbing strip			

Note.—Items 29-33 are exclusive to Mk. 20 aircraft



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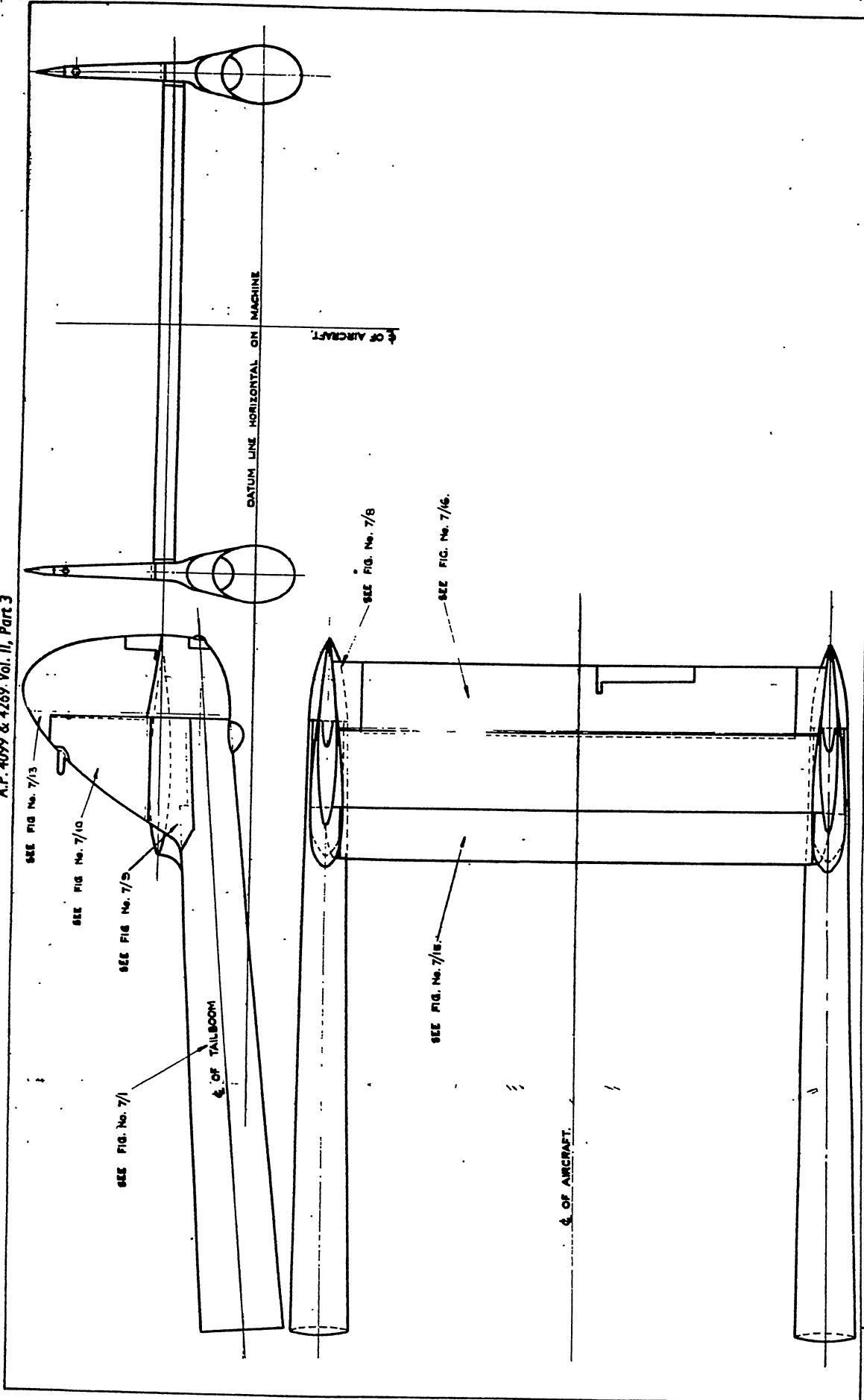


FIG. 7/2

TAIL UNIT REFERENCE DIAGRAM.

FIG. 7/2

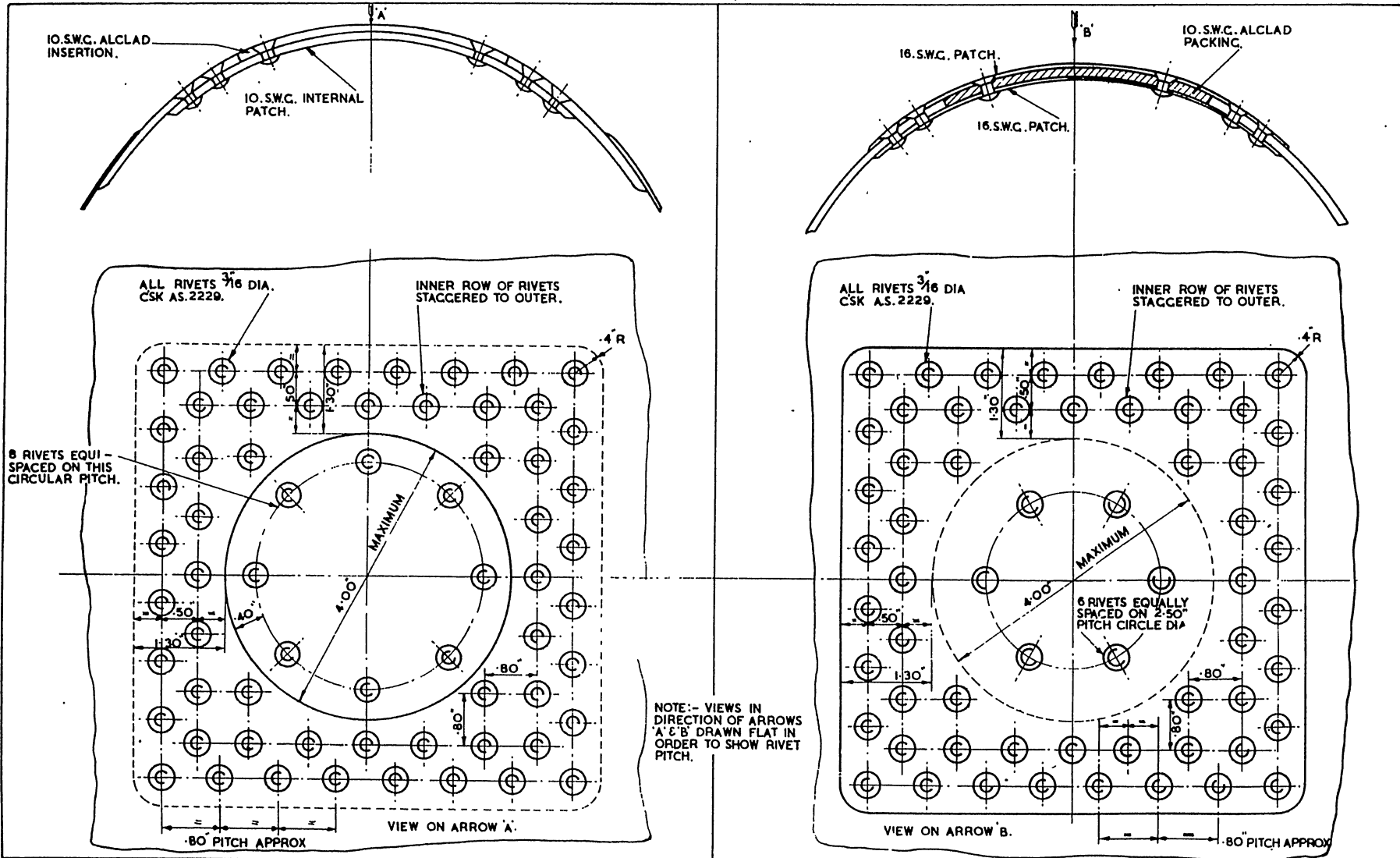


FIG.7/3

REPAIRS TO 10.S.W.G. PLATING - TAIL BOOM.

FIG.7/3

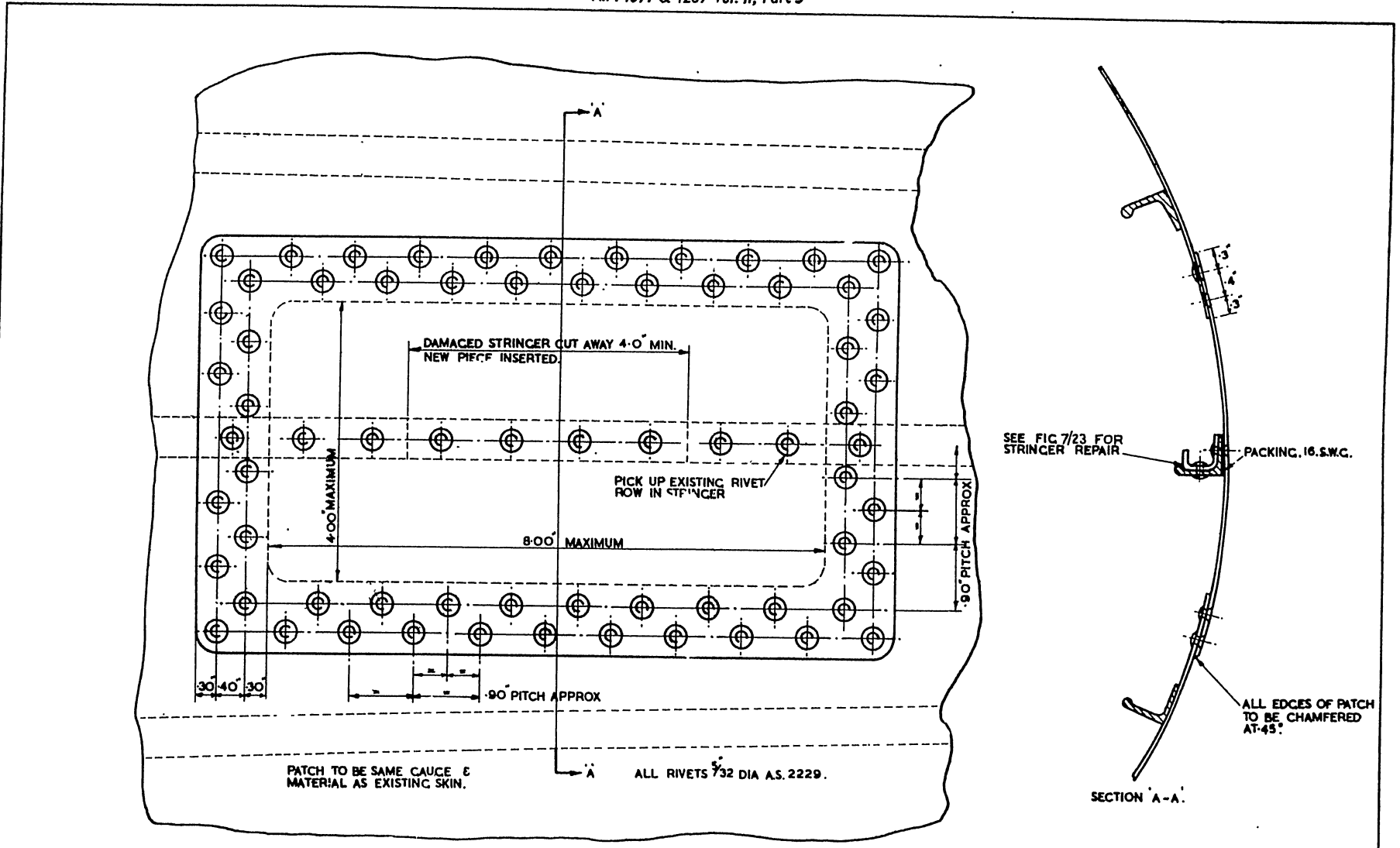
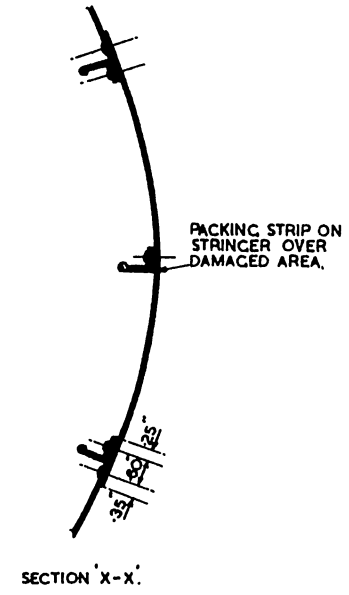
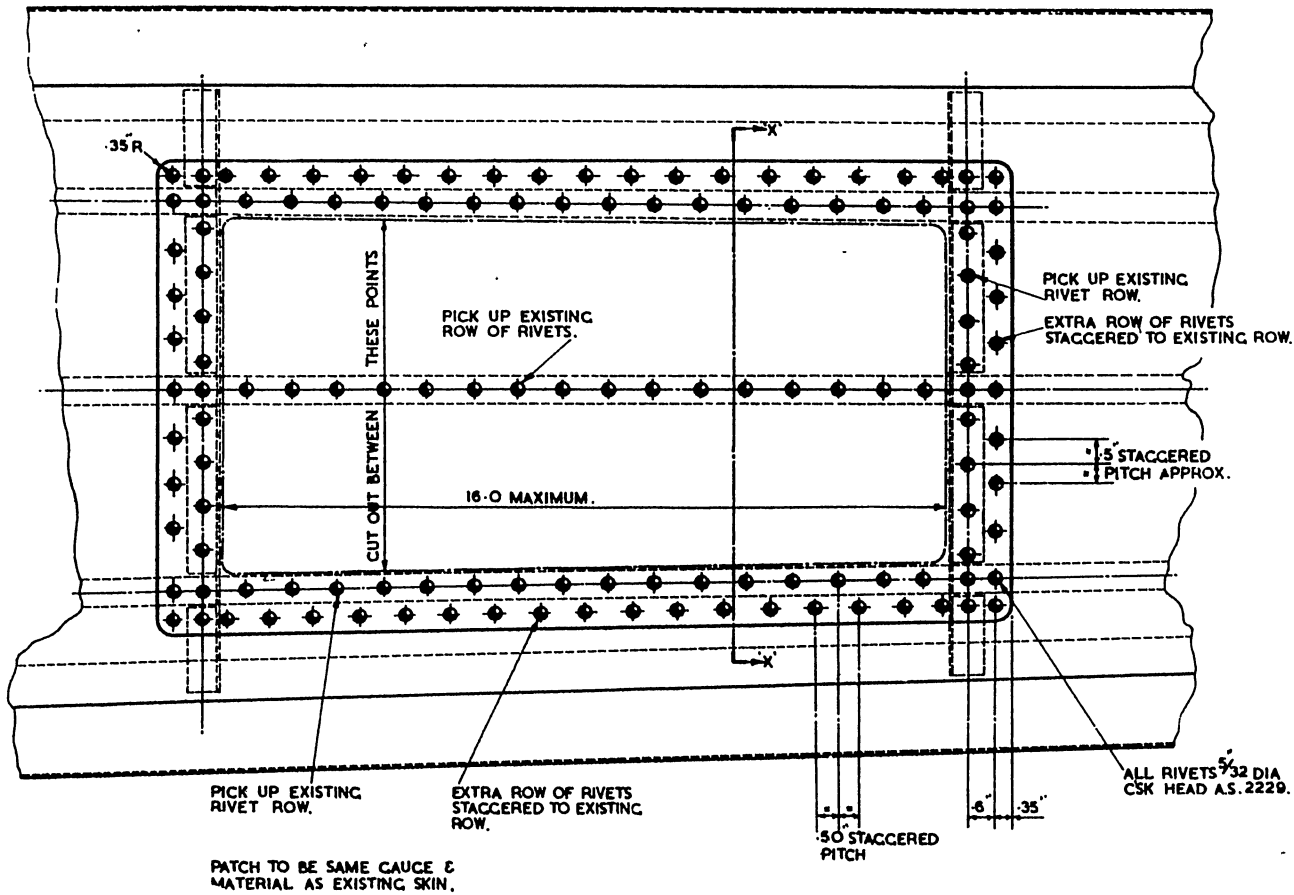


FIG.7/4

REPAIR TO SKIN & STRINGER TAIL BOOM.

FIG7/4



ALL RIVETS $\frac{5}{32}$ DIA
CSK HEAD A.S. 2229.

PATCH TO BE SAME GAUGE &
MATERIAL AS EXISTING SKIN.

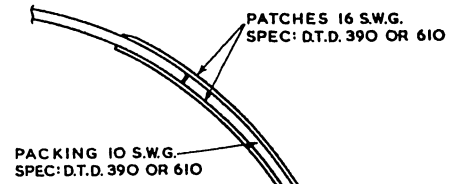
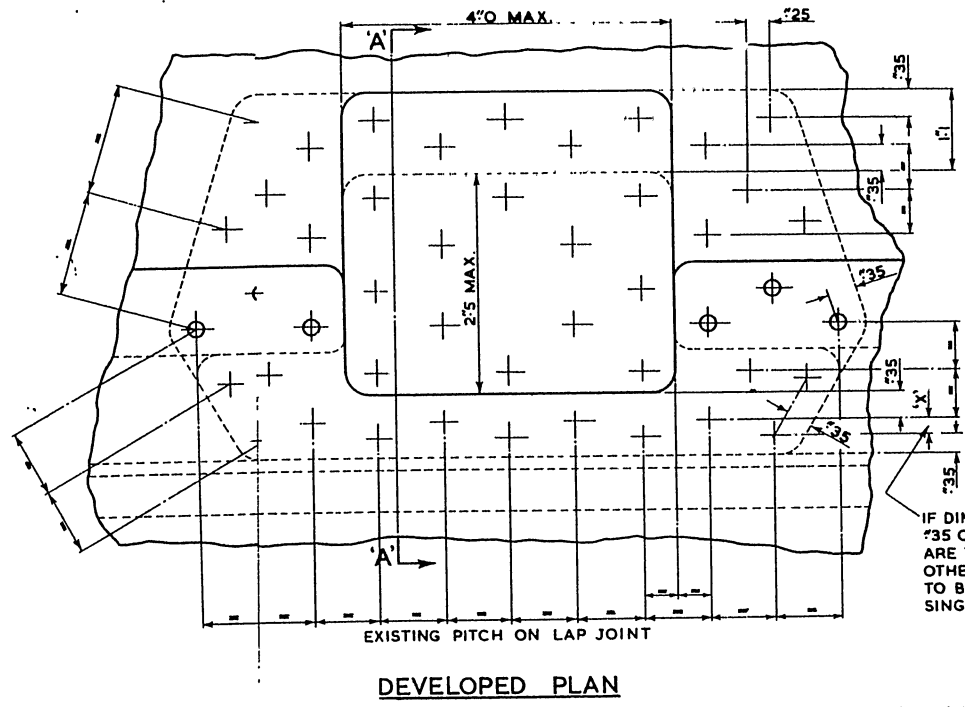
FIG.7/5

PATCH REPAIR TO SIDE PLATES - TAIL BOOM.

FIG.7/5

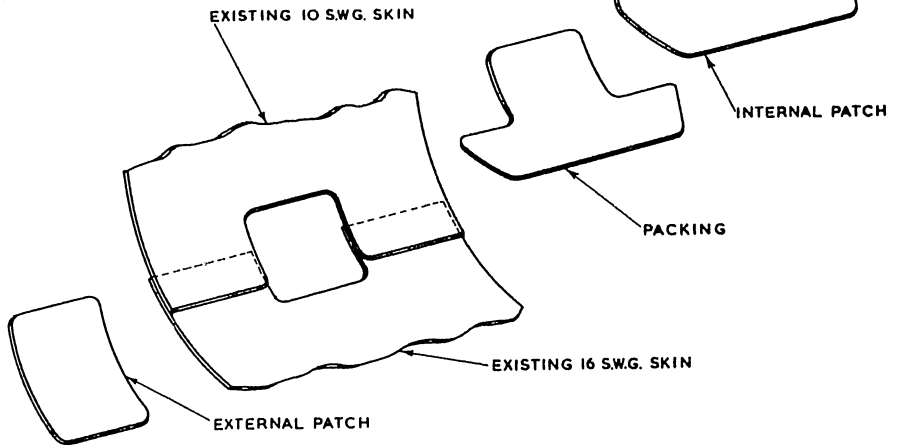
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PP6940 M49990/G4632 6/52 1100 C&P Gp. 957(4)



IF DIMENSION 'X' CAN BE
7'35 OR GREATER RIVETS
ARE TO BE IN TWO ROWS
OTHERWISE RIVETS ARE
TO BE PITCHED ALONG A
SINGLE LINE

- NOTES**
- ⊕ EXISTING HOLES TO BE DRILLED TO 3/16" DIA. AND RECOUNTERSUNK TO TAKE 1/16" DIA. 90° C'S'K RIVETS TYPE A.S. 2229
 - + HOLES TO BE DRILLED TO TAKE 5/32" DIA. 90° C'S'K RIVETS TYPE A.S. 2229
 - MIN. PITCH 7'65 MAX. PITCH 7'85
 - THE USE OF SOLID RIVETS IS RECOMMENDED BUT EQUIVALENT STEEL ØBERT RIVETS PINNED MAY BE USED



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FIG. 7/6 BOOM REPAIRS

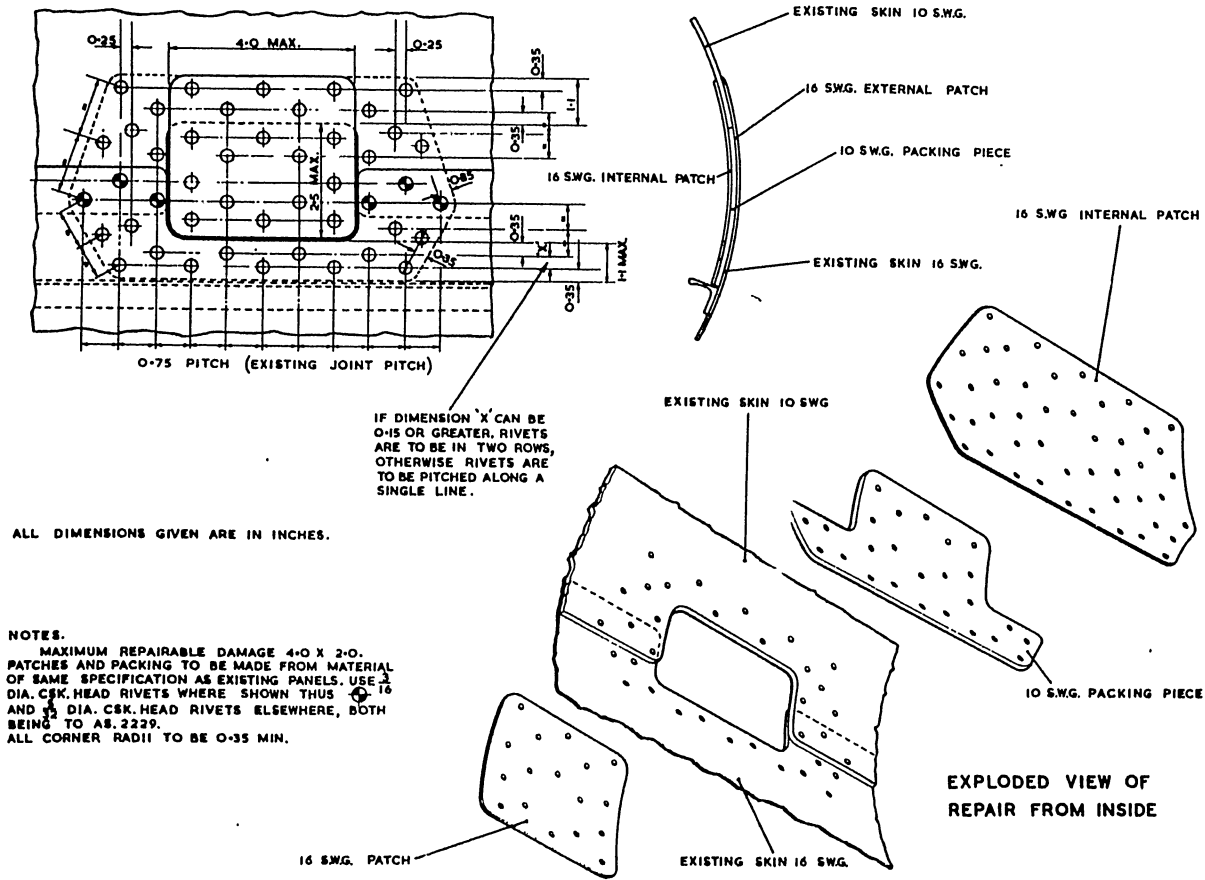


Fig.7/7. Repair at skin joint—tail boom

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(AL.23, Feb. 57)

TAIL BOOM REAR FAIRING

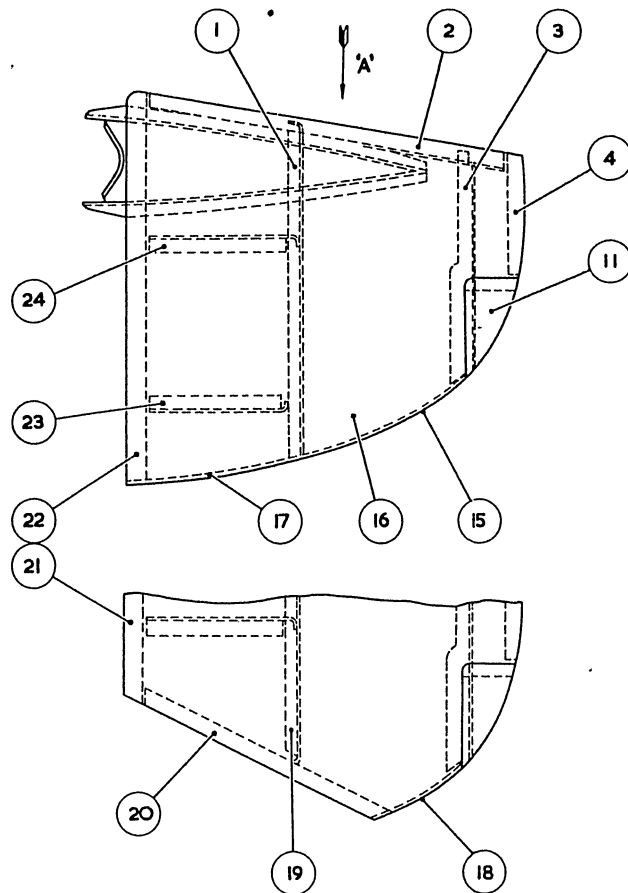
Key to items shown on fig. 7/8

Key No.	Part number		Material		Description
	Port	Starboard	Specification	S.W.G.	
1	J.00909	J.00909	L.72	24	Diaphragm
2	J.00907	J.00907		24	Top rib
3	J.00911	—		20	Diaphragm
4	J.001663	J.001663	L.1 or D.T.D.423A	—	Trailing edge member
5	J.001565ND	J.001566ND	L.72	20	Reinforcing strip
6	J.00951ND	J.00951ND		24	Front former
7	J.00952ND	J.00952ND		24	Centre former
8	J.00955	J.00955		24	Rib
9	J.00947ND J.00949ND	J.00948ND J.00950ND	L.1 or D.T.D.423A	24	Top and bottom skins
10	J.00956	J.00956		—	Trailing edge member
11	J.00969	—	D.T.D.213	18	Lamp fairing
12	J.001563ND	J.001564ND	D.T.D.213	24	Stiffener
13	—	J.00912		24	Diaphragm
14	—	J.00973ND		24	Butt-strap
15	J.00972ND	J.00972ND		24	Butt-strap
16	J.00961 J.00962	J.00963 J.00964	L.72	24	Rear fairing plates
17	J.00971ND	J.00971ND		24	Butt-strap
18	J.001728ND	—	L.72	24	Butt-strap
19	J.001730	J.001730		24	Diaphragm
20	J.001731ND	J.001731ND	L.72	16	Edge stiffener
21	J.001729ND	J.001729ND		18	Reinforcing plate
22	J.00974ND	J.00974ND	L.72	16	Reinforcing plate
23	J.00913	J.00913		24	Bottom former
24	J.00908	J.00908	L.72	24	Top former

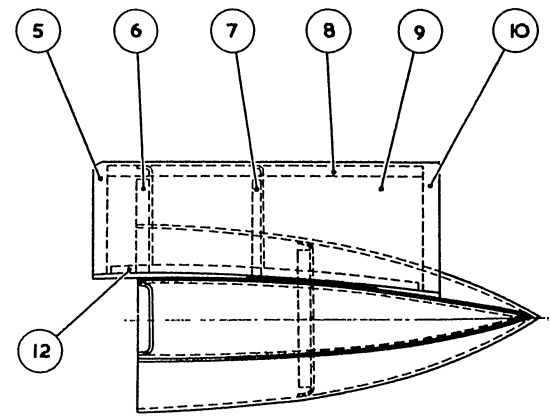
Note.—Assemblies J.00905-6 are exclusive to Mk. 5, 9, 10, 11 and 22 aircraft and J.001726-7 to Mk. 20 aircraft

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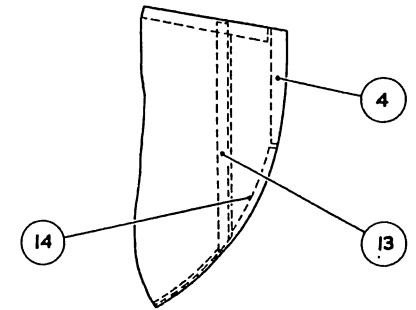
(A.L.23, Feb. 57)



MARK 20 AIRCRAFT ONLY



VIEW IN DIRECTION OF
ARROW 'A'



STARBOARD FAIRING
(ALL MARKS)

Fig. 7/8. Tail boom rear fairing

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FIN—BOTTOM PORTION

Key to items shown on fig. 7/9

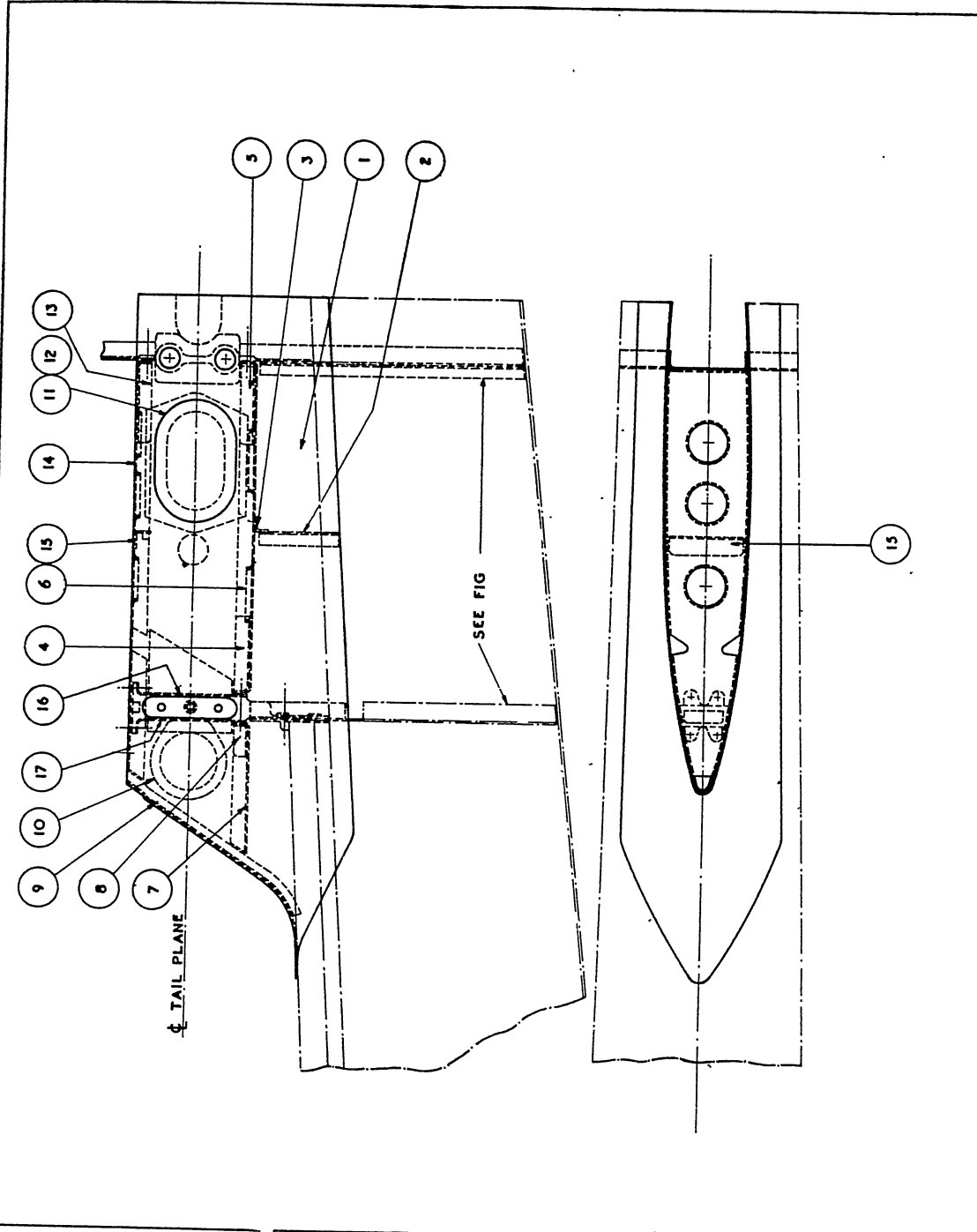
Assembly J.00581-2

Key No.	Part number		Material	Specification	S.W.G.	Description			
	Port	Starboard							
1	J.00578	J.00578	Alclad	L.72	20	Fin bottom skin			
2	J.00763	—				Diaphragm			
3	J.00680	—				Stiffener			
4	J.00671A	J.00672A	M.S.	S.3	20	Bracket	Assembled on J.00661A 2		
5	J.00665	J.00666							
6	J.00662ND	—	Alclad	L.72	20	Centre rib plate			
7	J.00664ND	—				Nose rib plate			
8	J.00675A	J.00676A	M.S.	S.3	20	Bracket	Assembled on J.00663A		
9	J.00577	—	Alclad	L.72	20	Butt strap			
10	J.00764	—				Patch plate			
11	J.00787A	—				Nut plate	18	Assembled on J.00761A	
12	J.00786	—							Cover plate
13	J.00647A	—				Bracket	20	Assembled on J.00643A	
14	J.00615A	—							Centre rib plate
15	J.00646ND	—							Stiffener
16	J.00690	—			20	Rear former			
17	J.00689	—			20	Front former			

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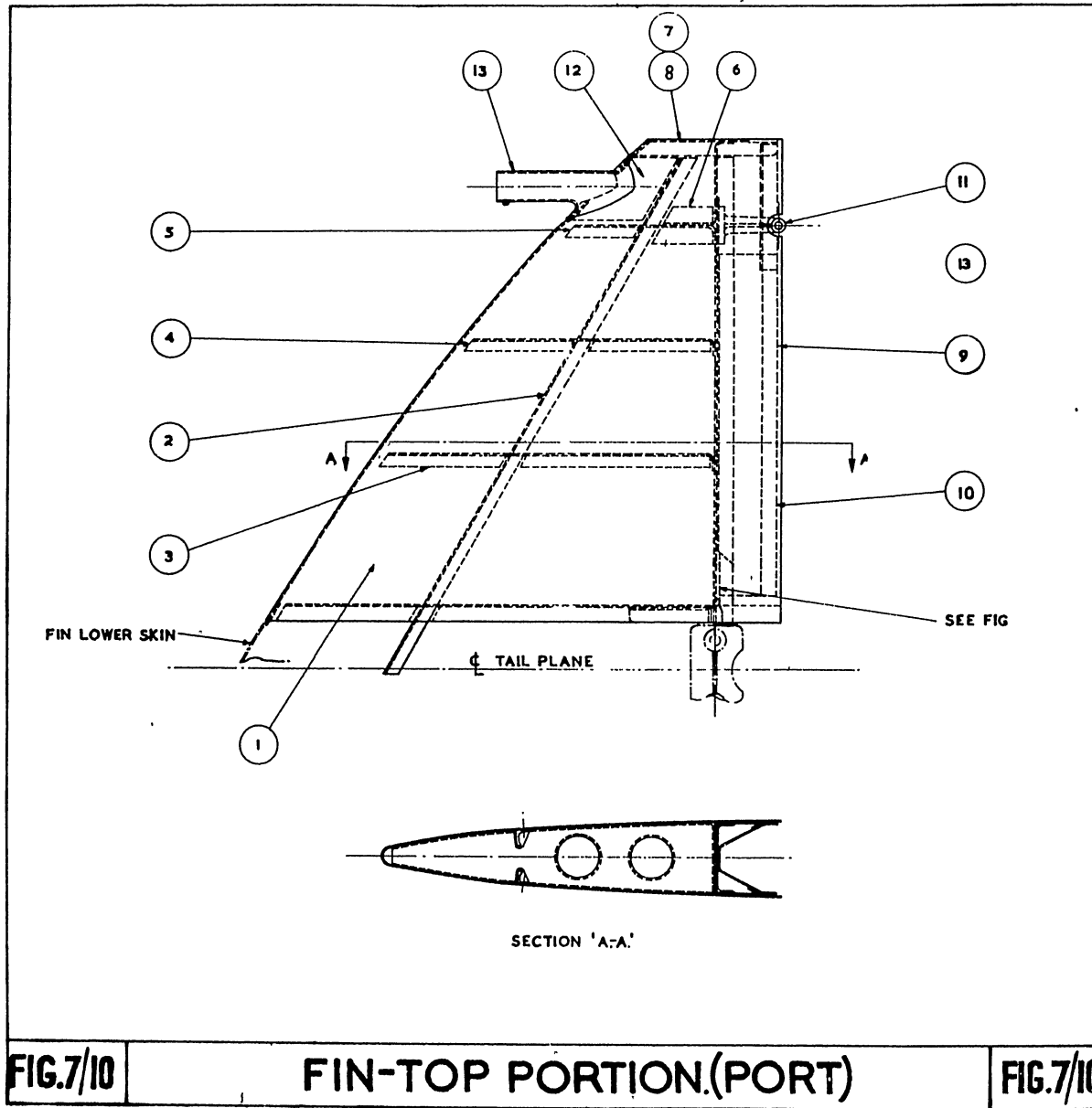


FIN—TOP PORTION

Key to items shown on fig. 7/10

Assembly J.00813-4

Key No.	Part number		Material	Specification	S.W.G.	Description	
	Port	Starboard					
1	J.00815ND	J.00816ND	Alclad	D.T.D.390	22	Skin	
2	J.00817ND—L.H.	J.00817ND—L.H.	—	—	—	} Stringer, Reynolds Section A.1154	
	J.00818ND—R.H.	J.00818ND—R.H.	—	—	—		
3	J.00820	J.00820	Alclad	D.T.D.390	22	Rib No. 3	
4	J.00821	J.00821			22	Rib No. 4	
5	J.00832ND	J.00832ND			20	Rib No. 5	} Assembled on J.00822A
6	J.00833ND	J.00833ND			20	Top plate	
7	J.00844ND	J.00824			20	Rib No. 6	} Assembled on J.00823A-4
8	J.00845ND	—			18	Access door	
9	J.001050A	J.001049A			22	Fin shroud plates	
10	J.00830ND	J.00830ND			22	Trailing edge stiffener	
11	J.00825	J.00825			Alum. Mag.	D.T.D.300	Casting hinge bracket
12	J.00862ND	—			Alclad	D.T.D.390	20
13	J.00826A	—	M.S.P.	S.3	20	Pressure head bracket	



FIN SPAR—REAR

Key to Items shown on fig. 7/11

Assembly J00553-4A

Key No.	Part number		Material	Specification	S.W.G.	Description	
	Port	Starboard					
1	J.00558ND	J.00558ND	Alclad	D.T.D.390	18	Spar plate	
2	J.00559ND	J.00559ND			20	Reinforcing plate	} Assembled on J.00560A
3	J.00555ND	J.00555ND			20	Spar plate	
4	J.00556ND	J.00556ND			18	Reinforcing plate	} Assembled on J.00557A
5	J.00561	J.00562	Aluminium Copper alloy	D.T.D.298		Fin spar casting	

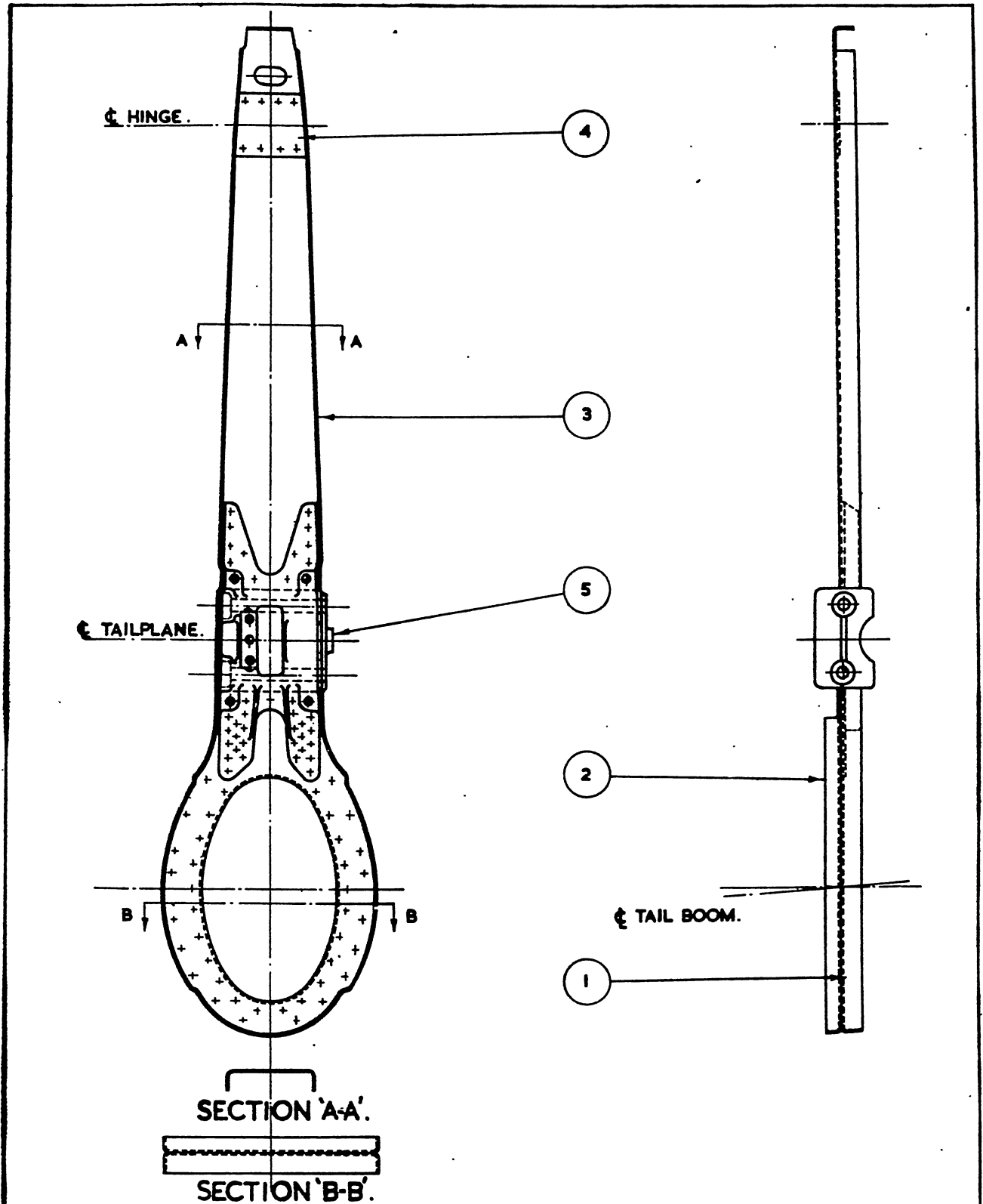


FIG.7/11

FIN SPAR (REAR)

FIG.7/11

FIN FRONT SPAR AND REAR FRAME

Key to items shown on fig. 7/12

Assembly J.00565-6A

Key No.	Part number	Material	Specification	S.W.G.	Description
1	J.00573	Aluminium-copper alloy	D.T.D.298		Casting
2	J.00568ND	Alclad	D.T.D.390	20	Reinforcing plate
3	J.00567ND	Alclad	D.T.D.390	18	Frame

} Assembled
on
J.00565-6

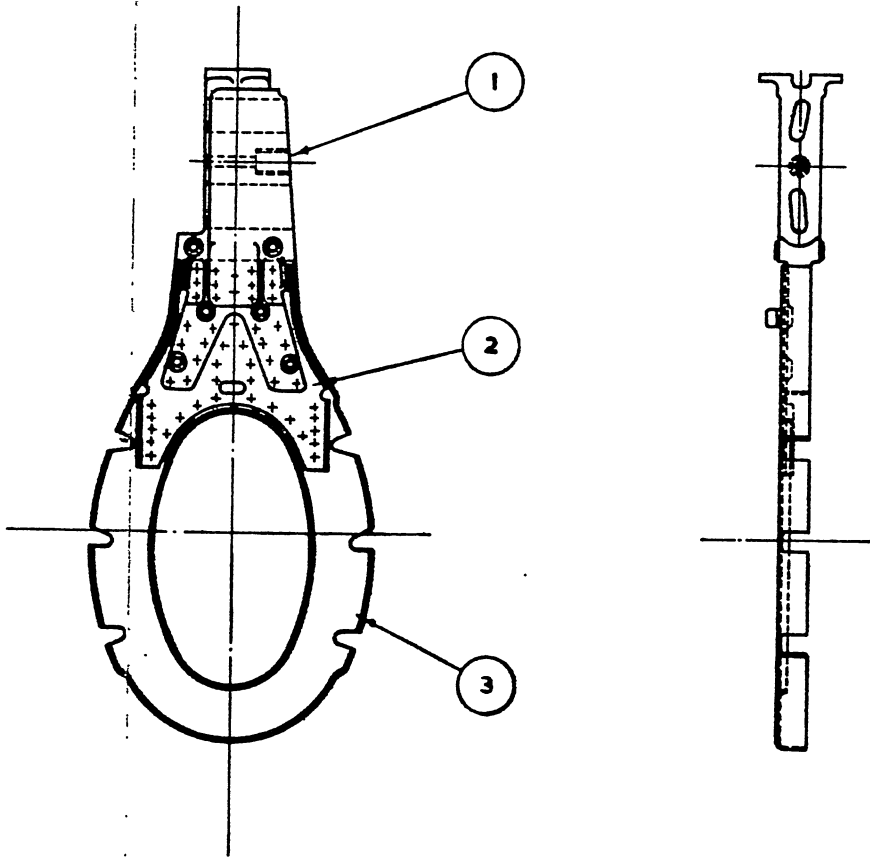


FIG. 7/12

FIN FRONT SPAR & REAR FRAME.

FIG. 7/12

RUDDER

Key to items shown on fig. 7/13

Assembly J.00583A

Key No.	Part number		Material	Specification	S.W.G.	Description	
	Port	Starboard					
1	J.00795ND	J.00795ND	Alclad	D.T.D.390	24	Skin	
2	J.00716A	J.00716A				Assembly of rudder post	
3	J.00781ND	J.00781ND	Alclad	D.T.D.390	22	Rib	
4	J.00782ND	J.00782ND			20	Nut plate	} Assembled on J.00741A
5	J.00739—L.H. J.00740—R.H.	J.00739—L.H. J.00740—R.H.			20	Gusset plate	
6	J.001044	J.001044			22	Gusset plate	
7	J.001474A	J.001474A				Assembly of rudder tab	
8	J.001476	J.001476	Magnesium alloy	D.T.D.289	Casting	Hinge block	
9	J.00732	J.00732	Alclad	D.T.D.390	22	Rib	
10	J.00734ND	J.00734ND	M.S.P.	S.3	22	Stiffener	} Assembled on J.00732
11	J.00754	J.00754			22	Rib	
12	J.00750ND	J.00750ND	Alclad	D.T.D.390	22	Rib—top	
13	J.00751ND	J.00751ND			22	Rib—bottom	
14	J.00891ND	J.00891ND	M.S.P.	S.3	22	Corner bracket—top	} Assembled on J.00749A
15	J.00892ND	J.00892ND			22	Corner bracket—bottom	
16	J.001473	J.001473	Dural	L.1	Bar	Trailing edge	
17	J.001205ND	J.001206ND	Manganese Aluminium alloy	D.T.D.213	22	Top skin	
18	J.00773	J.00773			22	Rib	
19	J.00772	J.00772			22	Rib	
20	J.00777ND	J.00777ND			22	Rib—nose	
21	J.00779ND	J.00779ND	Alclad	D.T.D.390	16	Base plate	} Assembled on J.00776A
22	J.00778ND	J.00778ND			22	Rib—rear	
23	J.00737—L.H. J.00738—R.H.	J.00737—L.H. J.00738—R.H.			20	Gusset plate	
24	J.00755	J.00755	Light alloy	D.T.D.300	Casting	Hinge bracket	
25	J.00756	J.00756	Dural	L.1	Bar	Link—assembled on J.001043A	
26	J.00730	J.00730	Light alloy	D.T.D.300	Casting	Rudder pedestal	
27	J.001027	J.001027	M.S.P.	S.3	20	Rudder mass balance	

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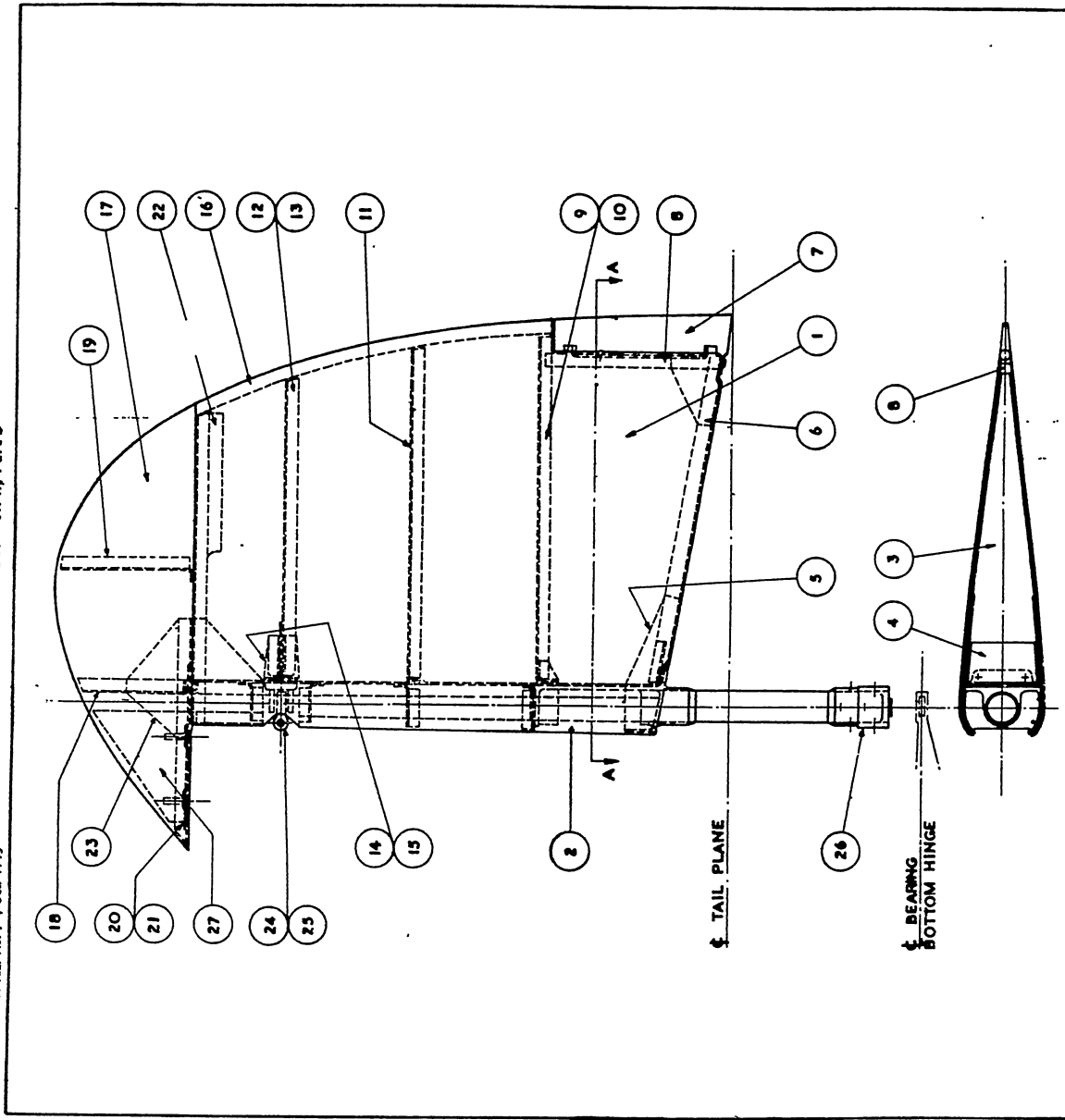


FIG. 7/13

RUDDER. (PORT)

FIG. 7/13

RUDDER POST

Key to Items shown on fig. 7/14

Assembly J.00716A

Key No.	Part number		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	J.00717ND	J.00717ND			20	Spar
2	J.00718ND	J.00718ND			22	Spar reinforcing
3	J.00719ND—L.H.	J.00719ND—L.H.				
	J.00720ND—R.H.	J.00720ND—R.H.			20	Nose stiffening
4	J.001048ND	J.001048ND	Alclad	D.T.D.390	20	Nose stiffening
5	J.00723ND	J.00723ND			22	Former
6	J.00724ND	J.00724ND			22	Former
7	J.00725ND	J.00725ND			22	Former
8	J.00726ND	J.00726ND			22	Former
9	J.00728	J.00728	Light alloy	D.T.D.300	Casting	Strap
10	J.00729	J.00729	Dural tube	T.4	17	Rudder post tube (1½ in. o/d)
11	J.00727	J.00727	Light alloy	D.T.D.300	Casting	Mounting bracket

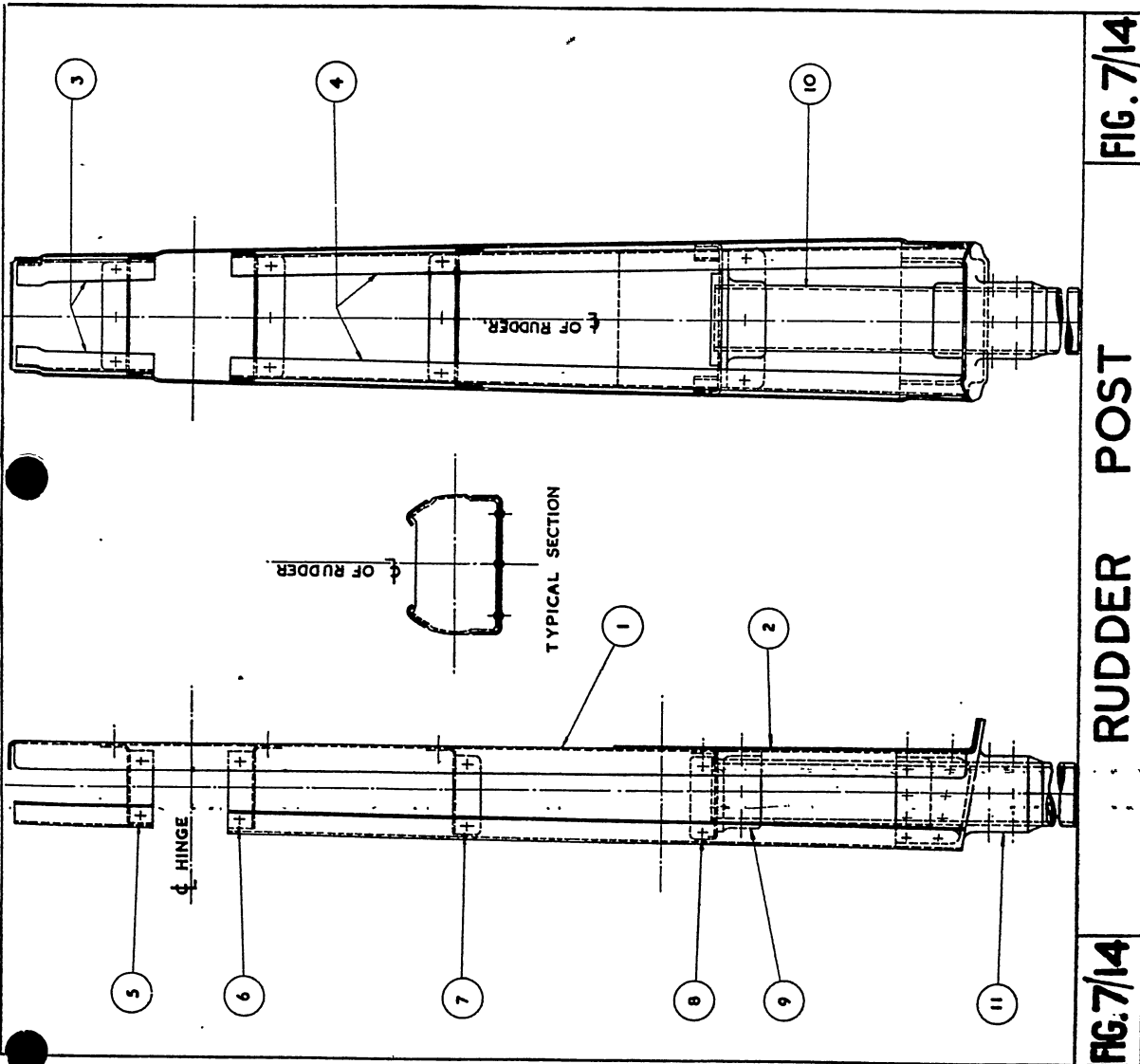


FIG. 7/14 R U D D E R P O S T FIG. 7/14

TAIL PLANE

Key to items shown on fig. 7/15

Assembly J.00600A

Key No.	Part number		Material	Specification	S.W.G.	Description
	Port	Starboard				
1		J.00887ND	Alclad	L.38 or D.T.D.390	22	Nose skin
2		J.00888ND			22	Main skin—top
3		J.00889ND			22	Main skin—bottom
4		J.00590A				Assembly of front spar
5		J.00595A				Assembly of rear spar
6	J.00599	J.00599			22	Nose ribs
7	J.00606ND	J.00606ND			18	End rib, assembled on J.00605A
8	J.00615	J.00615			22	Stiffener { top—port bottom—starboard
9	J.00616	J.00616			22	Stiffener { bottom—port top—starboard
10	J.00613	J.00613			22	Rib
11	J.00637ND	—			22	Half rib, assembled on J.00636A
12	J.00632ND	—			22	Rib { Assembled on
13	J.00633ND	—			22	Half rib J.00631A
14	—	J.00641ND			22	Rib { Assembled on
15	—	J.00633ND			22	Half rib J.00640A
16	J.00608ND	J.00608ND			20	End rib. Assembled on J.00607A
17	J.00799ND	J.00799ND	Alclad	D.T.D.390 or L.38	20	Reinforcing plate { top—port bottom—starboard
18	J.00800ND	J.00800ND			20	Reinforcing plate { bottom—port top—starboard
19	J.00796ND	J.00796ND			20	Reinforcing plate
20	J.00847	J.00847			22	Shroud—top
21	J.00848	J.00848			22	Shroud—bottom
22	J.00849	J.00849			22	Shroud—top
23	J.00850	J.00850			22	Shroud—bottom
24	J.00201B	—			18	Stiffener plate, assembled on J.00201A
25	J.00263	—			18	Access door
26	J.00654ND	—			18	Stiffener plate, assembled on J.00653A
27	J.00264	—			18	Tab jack access door
28	J.00261	—	Manganese aluminium alloy	D.T.D.310 D.T.D.213A	} 1½ in. o/d × 22	Guide tube
29	J.00588	J.00588	Light alloy	D.T.D.289		Casting
30	J.001229ND	—	—	—	—	Stringer, Reynolds A.1154

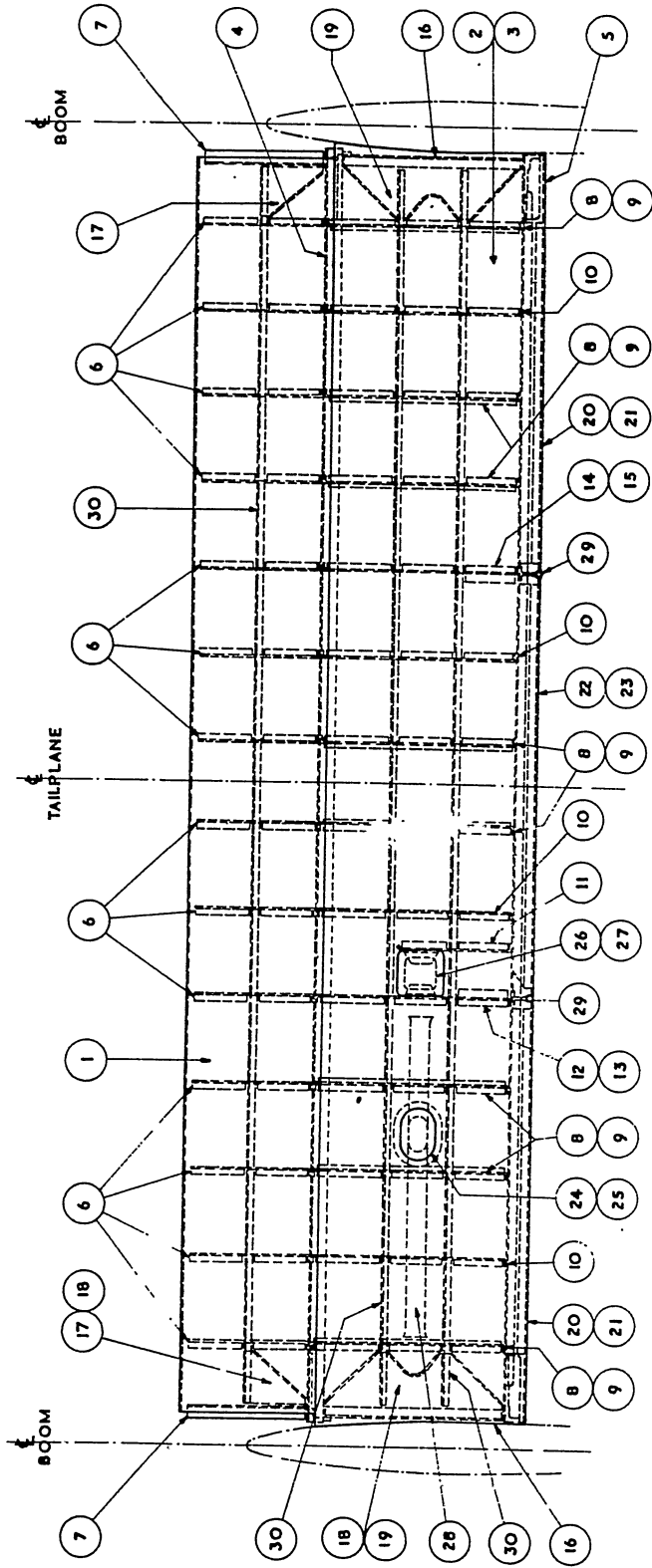


FIG.7/15

TAILPLANE

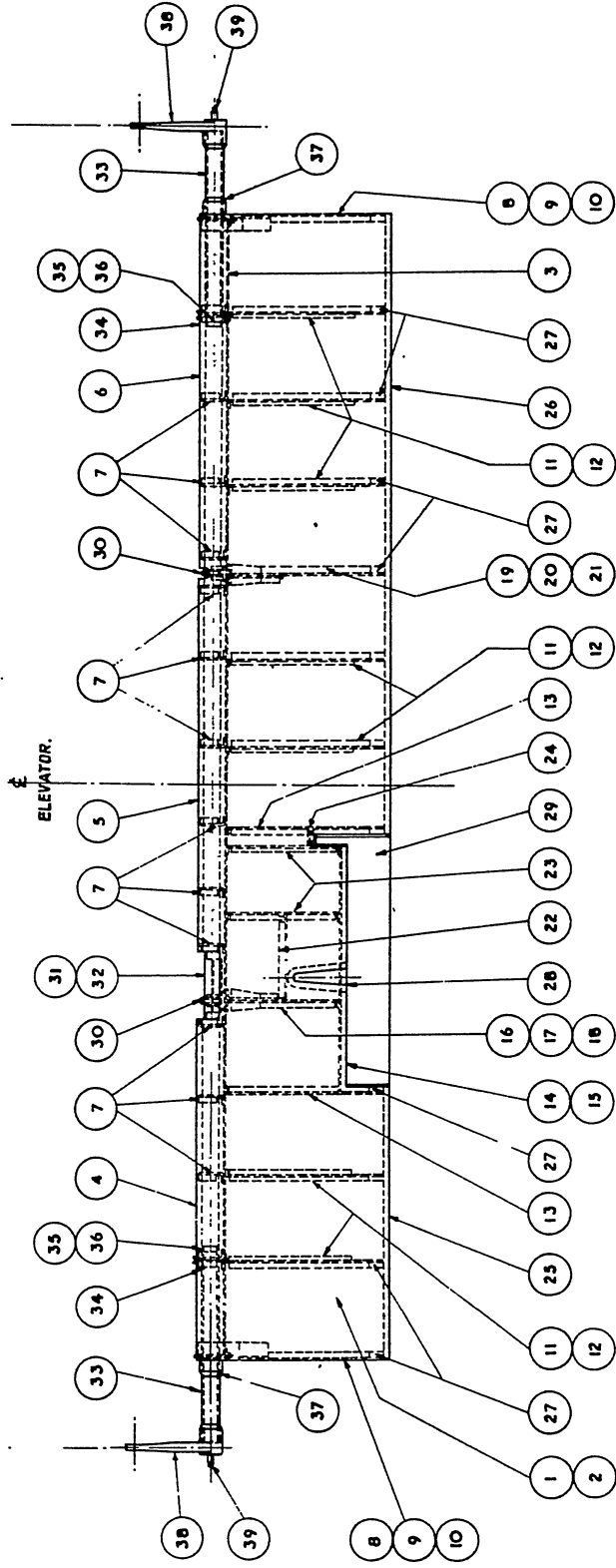
FIG.7/15

ELEVATOR

Key to items shown on fig. 7/16

Assembly J.00601A

Key No.	Part number		Material	Specification	S.W.G.	Description
	Port	Starboard				
1		J.00917	Alclad	D.T.D.390 or L.38	22	Top skin
2		J.00918	Alclad	D.T.D.390 or L.38	22	Bottom skin
3		J.00758A				Assembly of elevator spar
4	J.00902	—			20	Edge member
5		J.00903			20	Edge member
6	—	J.00904	Alclad	D.T.D.390 or L.38	20	Edge member
7	J.00685	J.00685			22	Nose rib
8	J.00748	J.00748			20	Rear rib
9	J.00746ND	J.00746ND	M.S.	S.3	22	Rib } Assembled on J.00745A } Assembled on J.00744A
10	J.00747ND	J.00747ND			22	Plate } Top—Port } Bottom—Starboard
11	J.00681	J.00681			22	Stiffener } Top—Starboard } Bottom—port
12	J.00682	J.00682			22	Stiffener } Top—Starboard } Bottom—port
13	J.00687	—	Alclad	D.T.D.390 or L.38	22	Stiffener
14	J.00791ND	—			20	Tab support spar } Assembled on J.00790A
15	J.00792ND	—			20	Stiffening channel } Assembled on J.00713A
16	J.00714ND	—			20	Rib } Assembled on J.00713A
17	J.00707ND	—			20	Half rib } Assembled on J.00705A
18	J.001573ND	—	M.S.	S.3	22	Bracket
19	—	J.00706ND	Alclad	D.T.D.390 or L.38	20	Rib
20	—	J.00707ND	Alclad	D.T.D.390 or L.38	20	Half rib
21	—	J.001574ND	M.S.	S.3	22	Bracket
22	J.00788	—			22	Stiffening rib
23	J.00688	—	Alclad	D.T.D.390 or L.38	22	Stiffener
24	J.00789	—			22	Diaphragm at tab
25	J.00804	—			Bar	Trailing edge
26	—	J.00805	Dural	D.T.D.423A or L.1	Bar	Trailing edge
27	—	J.00398	Light alloy	D.T.D.194	—	Block
28	J.00398	—	Alclad	D.T.D.390 or L.38	22	Fairing
29	J.00793	—				Elevator tab assembly
30	J.00801A	—				Hinge assembly
31	J.00895A	J.00895A			20	Door } Assembled on J.00916A
32	J.00914ND	—	Alclad	D.T.D.390 or L.38	20	Locating plate
33	J.00901	J.00901	Steel alloy	T.45	1½ in.o/d × 17	Torque tube
34	J.00686	J.00686	Alclad	D.T.D.390 or L.38	20	Packing
35	J.00768ND	J.00768ND	Steel alloy	T.45	1½ in.o/d × 17	Sleeve } Assembled on J.00767A
36	J.00769ND	J.00769ND	M.S.	S.3	20	Plate
37	J.00783	J.00783	Light alloy	L.1, L.40 or D.T.D.423A	Bar	Torque tube fitting
38	J.00784A	J.00784A	Light alloy	D.T.D.300	Casting	Lever—Assembled on J.00784A
39	J.00302	J.00302	H.T.S.	S.80 or S.11	Bar	Spigot



TAIL PLANE AND ELEVATOR SPARS

Key to items shown on fig. 7/17

TAIL PLANE FRONT SPAR—Assembly J.00590A

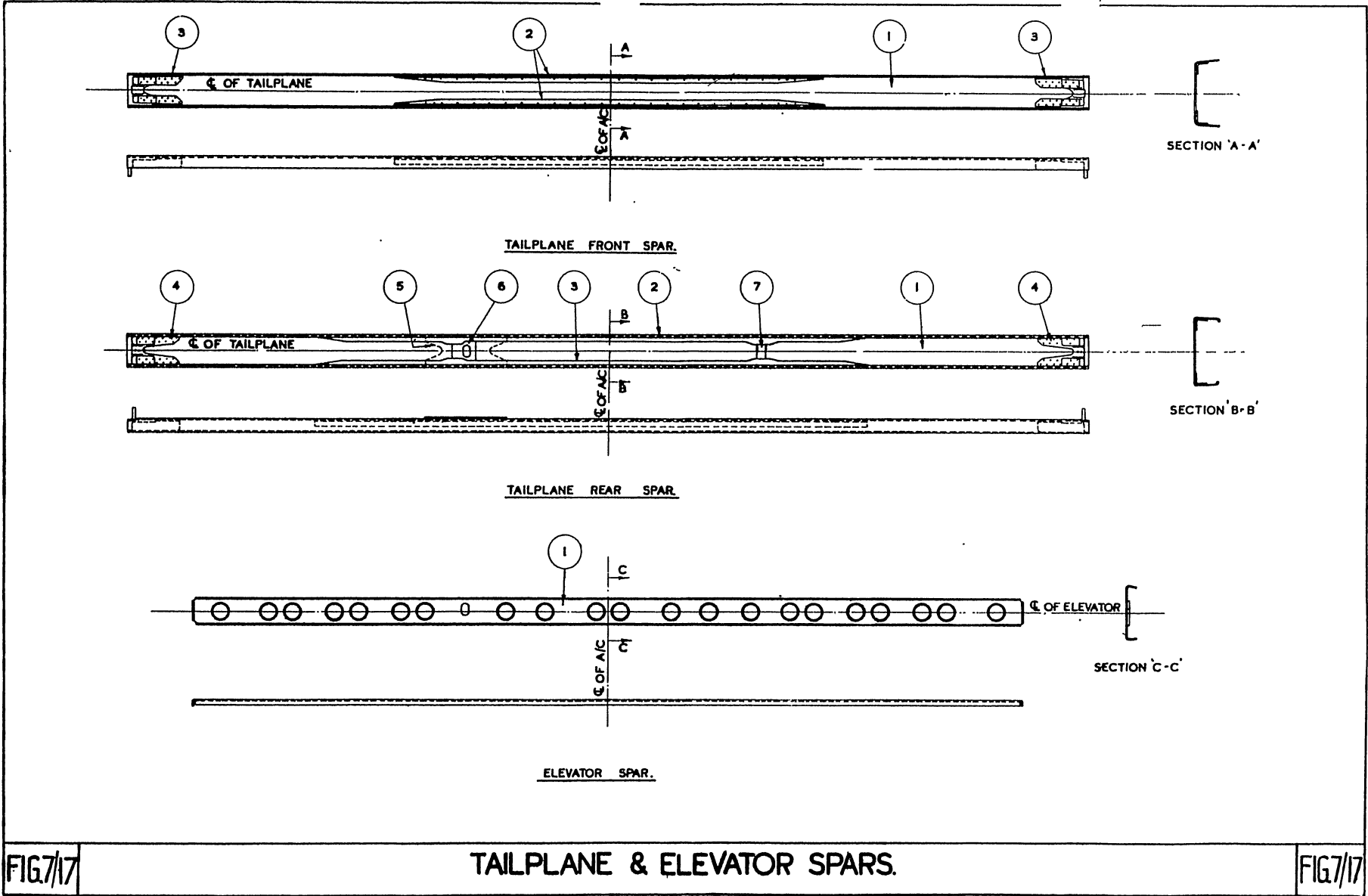
Key No.	Part number		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	J.00591ND		Alclad	D.T.D.390 or L.38	20	Channel
2	J.00592ND					
3	J.00585ND	J.00585ND	Light alloy	D.T.D.390 or L.38 D.T.D.298	Casting	End fitting—Assembled on J.00584A

TAIL PLANE REAR SPAR—Assembly J.00595A

Key No.	Part number		Material	Specification	S.W.G.	Description
	Port	Starboard				
1	J.00596ND		Alclad	D.T.D.390 or L.38	20	Channel
2	J.00597ND					
3	J.00598ND					
4	J.00587ND	J.00587ND	Light alloy	D.T.D.298	Casting	Bottom angle End fitting—Assembled on J.0046A
5	J.00593ND	—	Alclad	D.T.D.390	16	Packing
6	—	J.00594ND	Alclad	D.S.D.390	16	Packing

ELEVATOR SPAR—Assembly J.00758A

Key No.	Part number	Material	Specification	S.W.G.	Description
1	J.00759ND	Alclad	D.T.D.390 or L.38	20	Spar
2	J.00760ND			16	Angle



TAILPLANE & ELEVATOR SPARS.

FIG.7/17

FIG.7/17

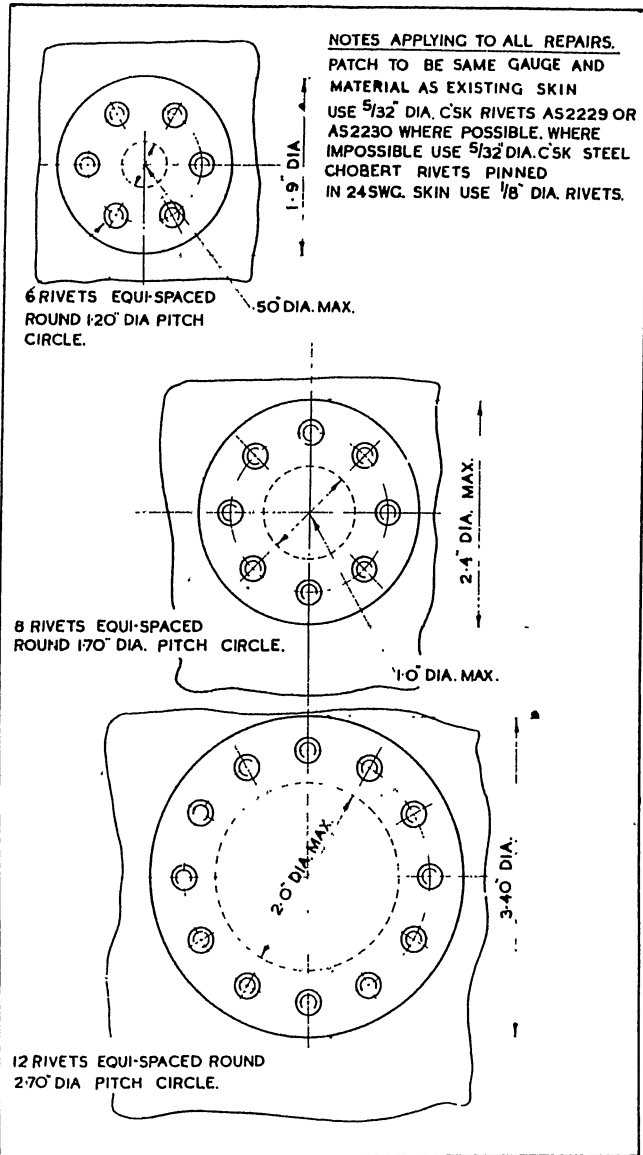


FIG.7/18

PATCH REPAIR TO SPAR WEBS AND TO SKINS.

FIG.7/18

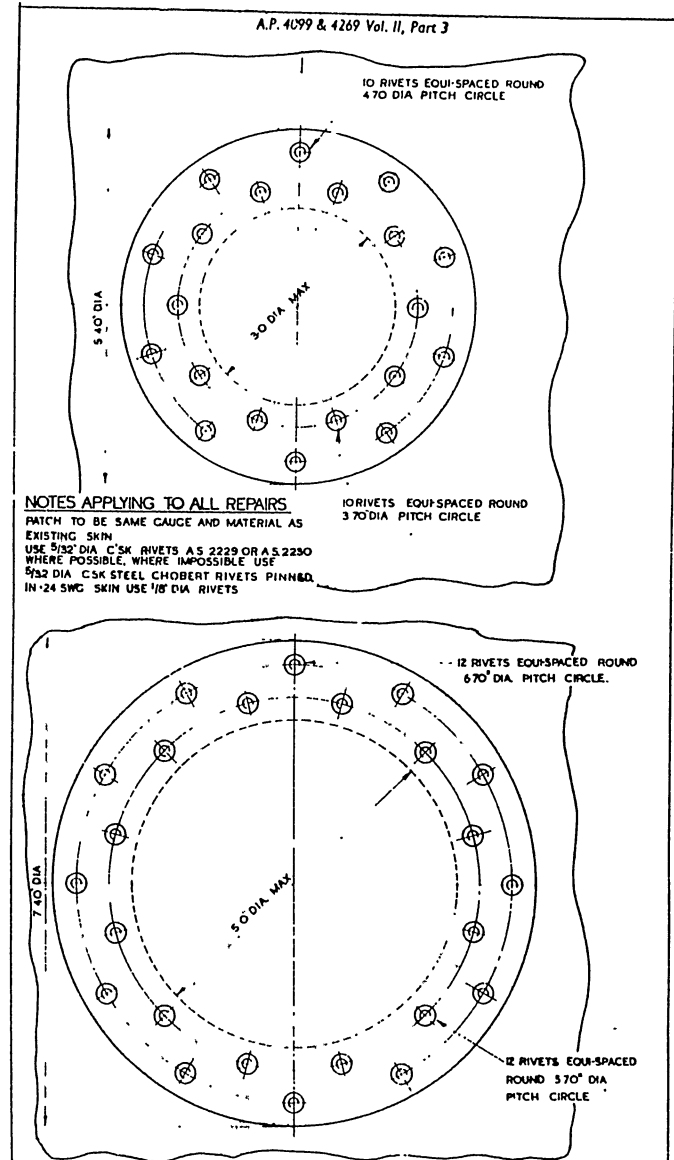
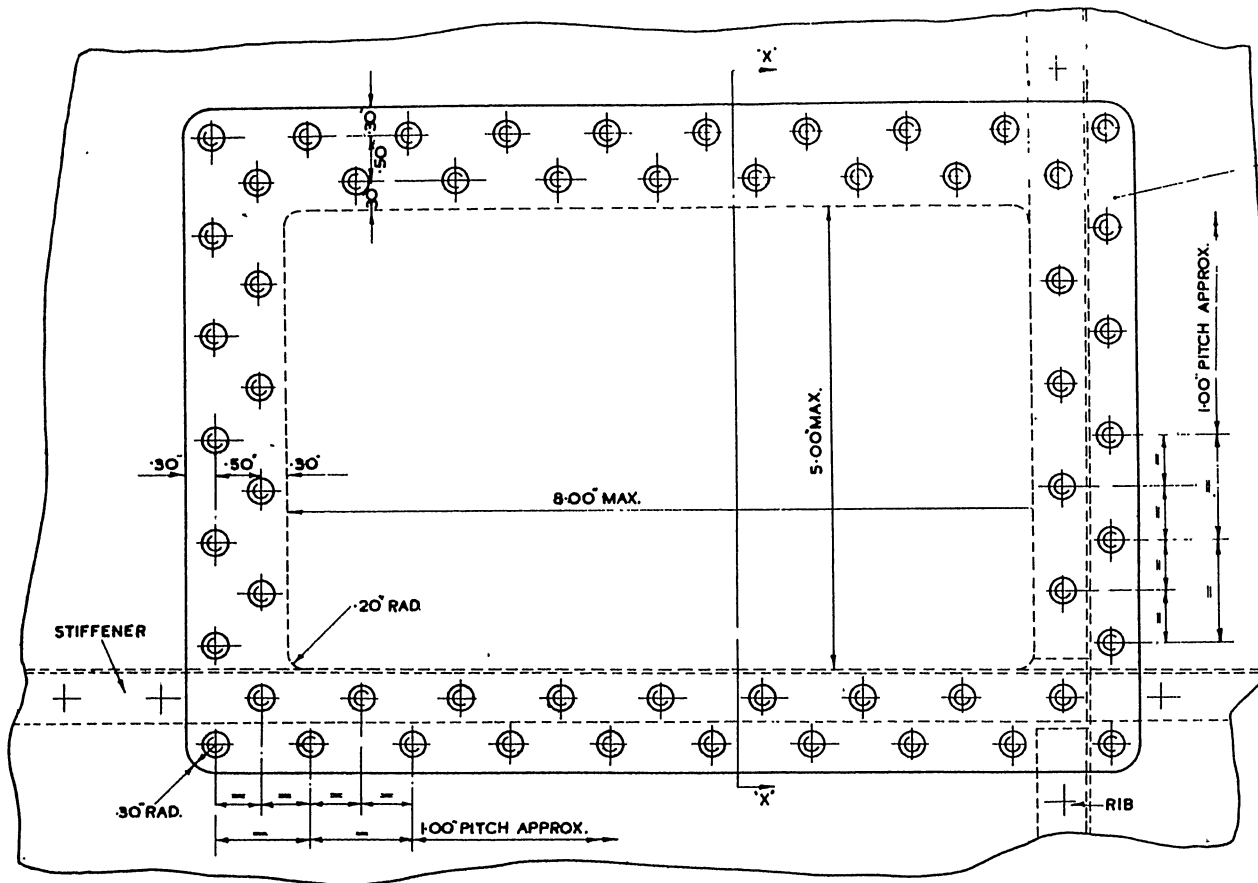


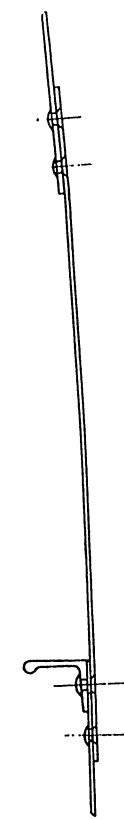
FIG.7/19

PATCH REPAIR TO SKINS

FIG.7/19



PATCH TO BE SAME GAUGE AND MATERIAL AS EXISTING SKIN.



SECTION 'X-X'

WHEN BOTH SKINS ARE DAMAGED ONE MAY BE RIVETED WITH SOLID RIVETS & THE OTHER WITH CHOBERT RIVETS. RIVETING TO RIBS STIFFENERS OR CLEAR SKIN AS SHOWN IN DRAWING MAY BE APPLIED TO ANY OR ALL SIDES OF PATCH AS REQUIRED DEPENDING ON THE POSITION OF THE REPAIR.

RIVETS:- AS 2230 SOLID C'SK RIVETS OR C'SK STEEL CHOBERT RIVETS PINNED IN 20 OR 22 SW.G. SKIN $5/32$ " DIA. RIVETS ARE TO BE USED. IN 24 SW.G. SKIN $1/8$ " DIA. RIVETS ARE TO BE USED. IF SPOT-WELDS ARE DRILLED OUT IN ANY GAUGE OF SKIN $5/32$ " DIA. RIVETS ARE TO BE USED IN THEIR PLACE.

WHERE EXISTING RIBS OR STIFFENERS ARE PICKED UP, EXISTING RIVET HOLES MUST BE USED. DAMAGED SKIN SHOULD BE CUT BACK TO THE EDGE OF ANY ADJACENT STIFFENER OR RIB AS SHOWN.

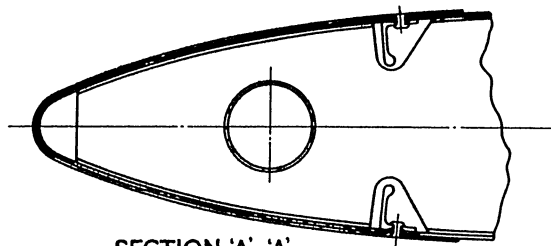
FIN & RUDDER REPAIRS.
NOTE:- NO REPAIR GREATER THAN 3'-0" DIA. ON ONE SIDE OF THE COMPONENT OR 1'-0" DIA. ON BOTH SIDES OF THE COMPONENT IS PERMISSIBLE ANY REPAIR GREATER THAN THIS MUST BE AFFECTED BY RESKINNING WHICH WILL BE COVERED IN PART 4 OF THIS BOOK.

FIG 7/20

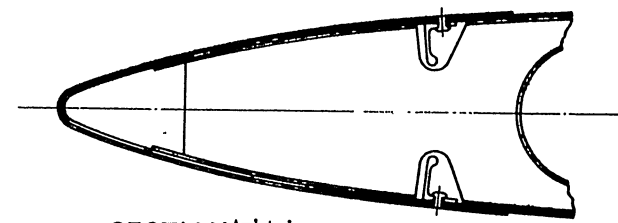
PATCH REPAIR TO TAIL UNIT SKINS.

FIG 7/20

RESTRICTED

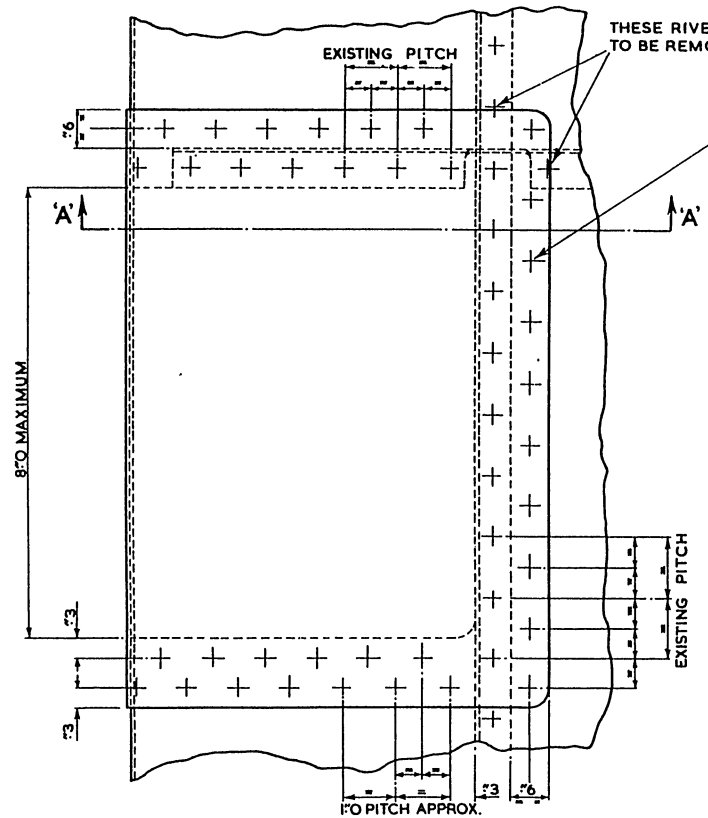


SECTION 'A'-'A'

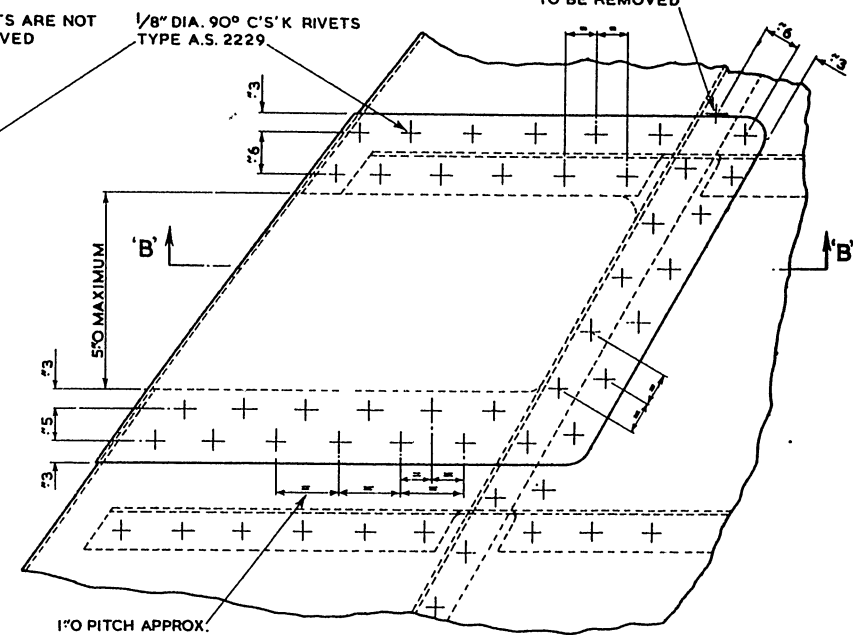


SECTION 'B'-'B'

THIS RIVET IS NOT TO BE REMOVED



TAILPLANE REPAIR

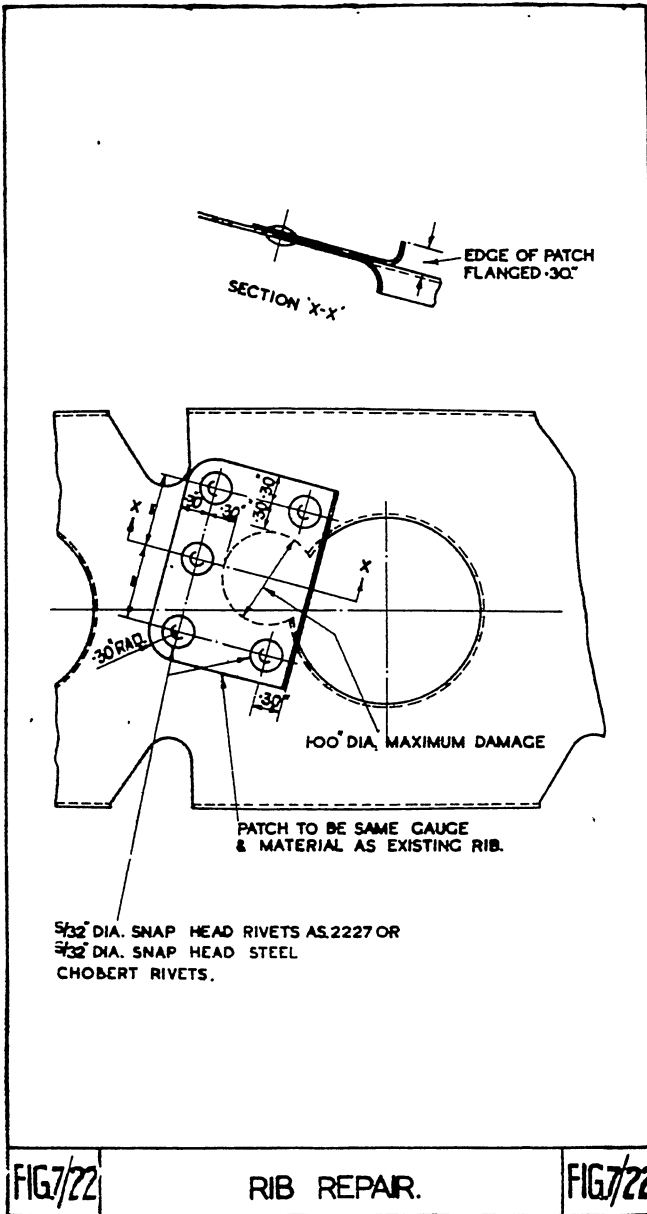


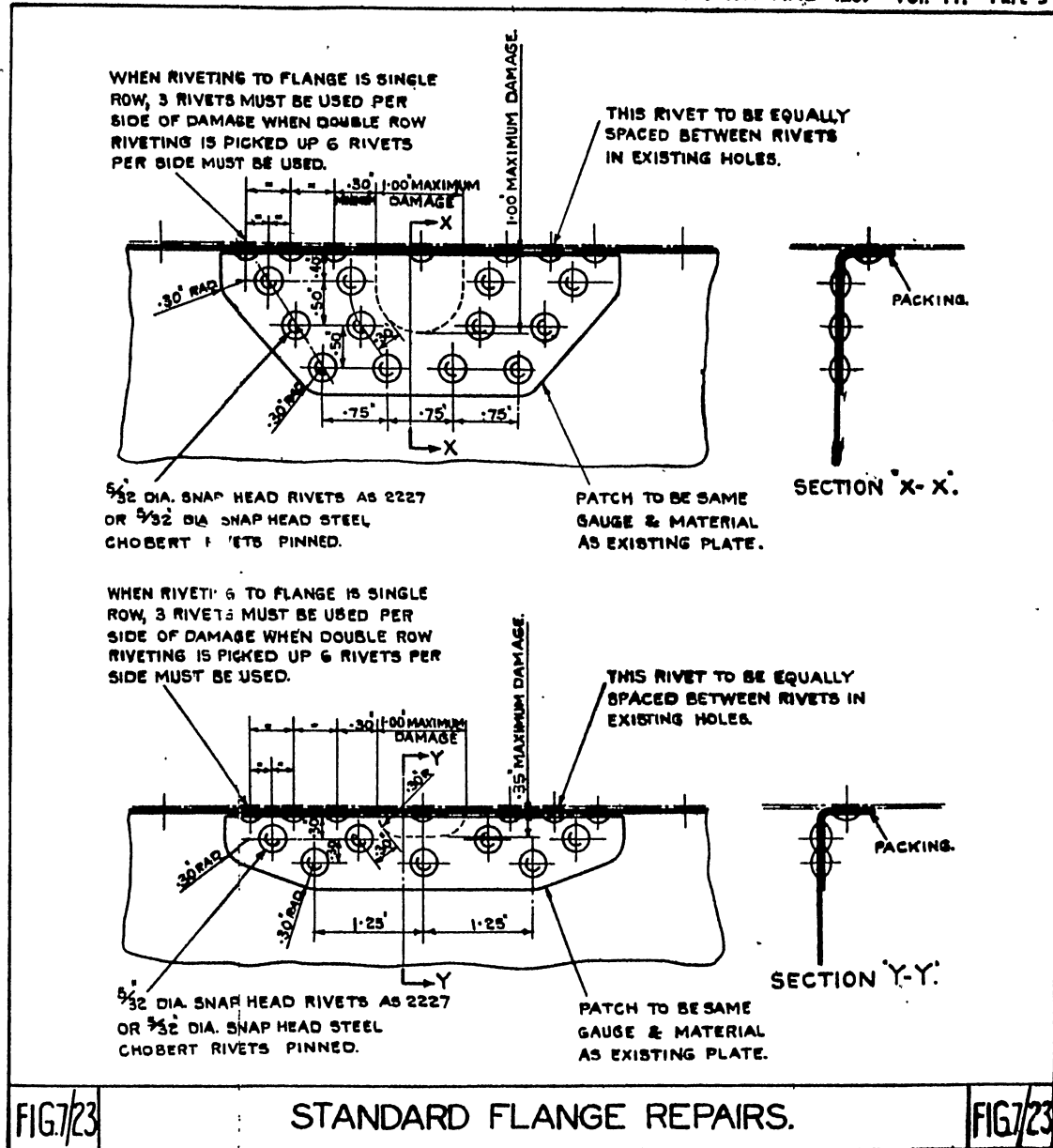
FIN REPAIR

THESE RIVETS ARE NOT TO BE REMOVED

1/8" DIA. 90° C'S'K RIVETS
TYPE A.S. 2229

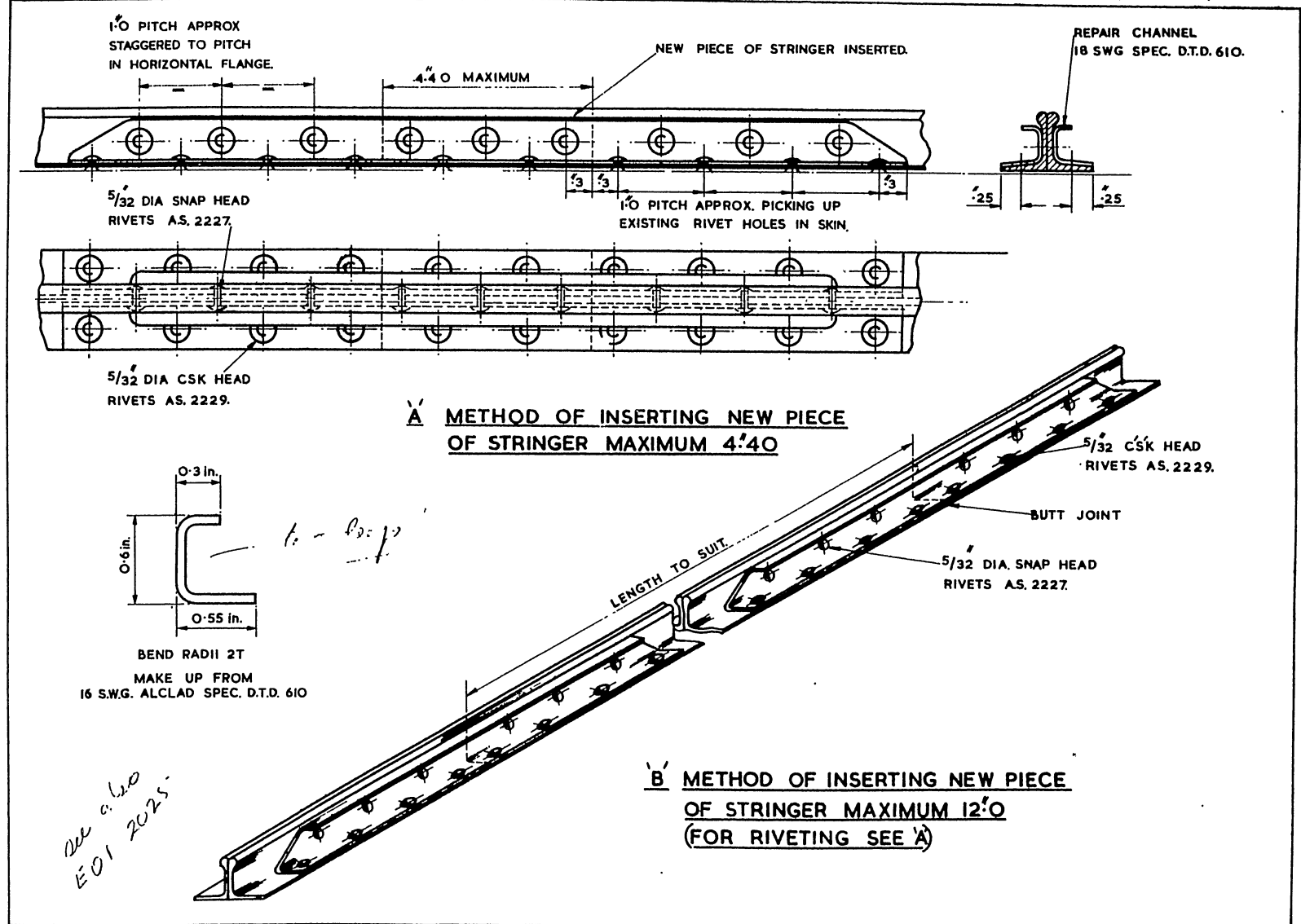
NOTES
 PATCHES ARE TO BE SAME GAUGE AND SPEC. AS EXISTING SKIN.
 RIVETING TO RIBS, STIFFENERS OR SKIN AS SHOWN IN DRAWING,
 MAY BE APPLIED TO ALL OR ANY SIDES OF PATCH AS REQUIRED,
 DEPENDING ON THE LOCATION OF THE DAMAGE.
 EXISTING RIVET HOLES MUST BE PICKED UP WHERE POSSIBLE.
 THE USE OF SOLID RIVETS IS RECOMMENDED, BUT EQUIVALENT
 STEEL CHOBERT RIVETS PINNED, MAY BE USED.
 ALL SKINS 20 SWG AND BELOW MUST BE DIMPLED FOR C'S'K RIVETS.





This leaf issued with A.L. No. 11, March, 1952

A.P. 4099 & 4269, VOL. 2, PART 3

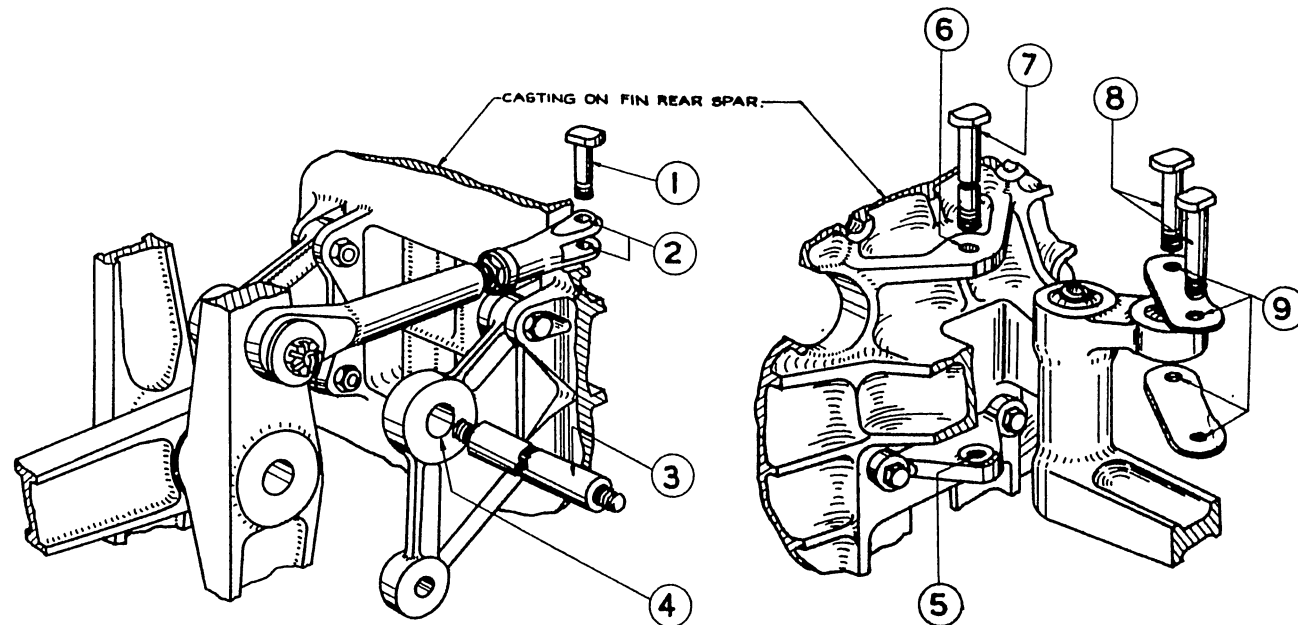


CONTROL FITTINGS—TAIL BOOM REAR END

Limits of wear for items shown on fig. 7/25

Key No.	Part No.	Description of Part	Nominal Diameter	Female High or Male Low Limit	Maximum Wear Limit	Plug Gauge
1	AS.2504/7G	Special bolt	0.3125 in.	- 0.0012	- 0.0025	Micrometer
2	J.00267	Rudder connecting-rod fork	0.3125 in.	+ 0.0004	+ 0.002	VC
3	J.00361	Spindle	0.5 in.	- 0.0012	- 0.002	Micrometer
4	J.00604	Lever brackets	0.5 in.	+ 0.0004	+ 0.003	WE
5	J.00563	Rudder mass-balance, lower fulcrum	0.25 in.	+ 0.0004	+ 0.002	VC
6	J.00563	Rudder mass-balance, upper fulcrum	0.25 in.	+ 0.0004	+ 0.002	VC
7	J.00363	Special bolt	0.25 in.	- 0.0012	- 0.0025	Micrometer
8	AS.2504/6E	Special bolt	0.3125 in.	- 0.0012	- 0.0025	Micrometer
9	J.00362	Link plates, rudder	0.25 in.	+ 0.0003	+ 0.002	VC

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DETAIL "A" EXPLODED VIEW OF ELEVATOR AND
RUDDER CONTROL LEVERS, LOOKING AFT.

DETAIL "B" EXPLODED VIEW OF RUDDER
BALANCE LEVER AND LINK PLATES,
LOOKING FORWARD.

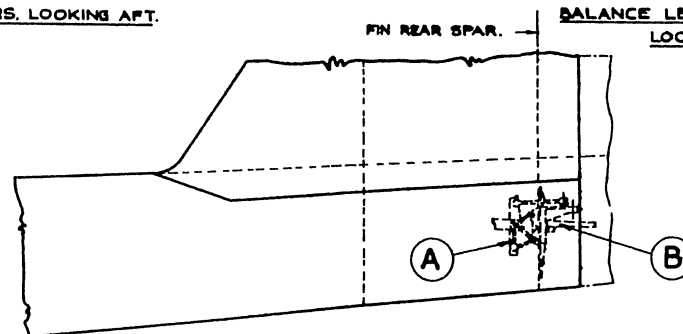


FIG 7/25 EXPLODED VIEWS OF CONTROL FITTINGS — TAIL BOOM REAR END .

FIG 7/25

RESTRICTED

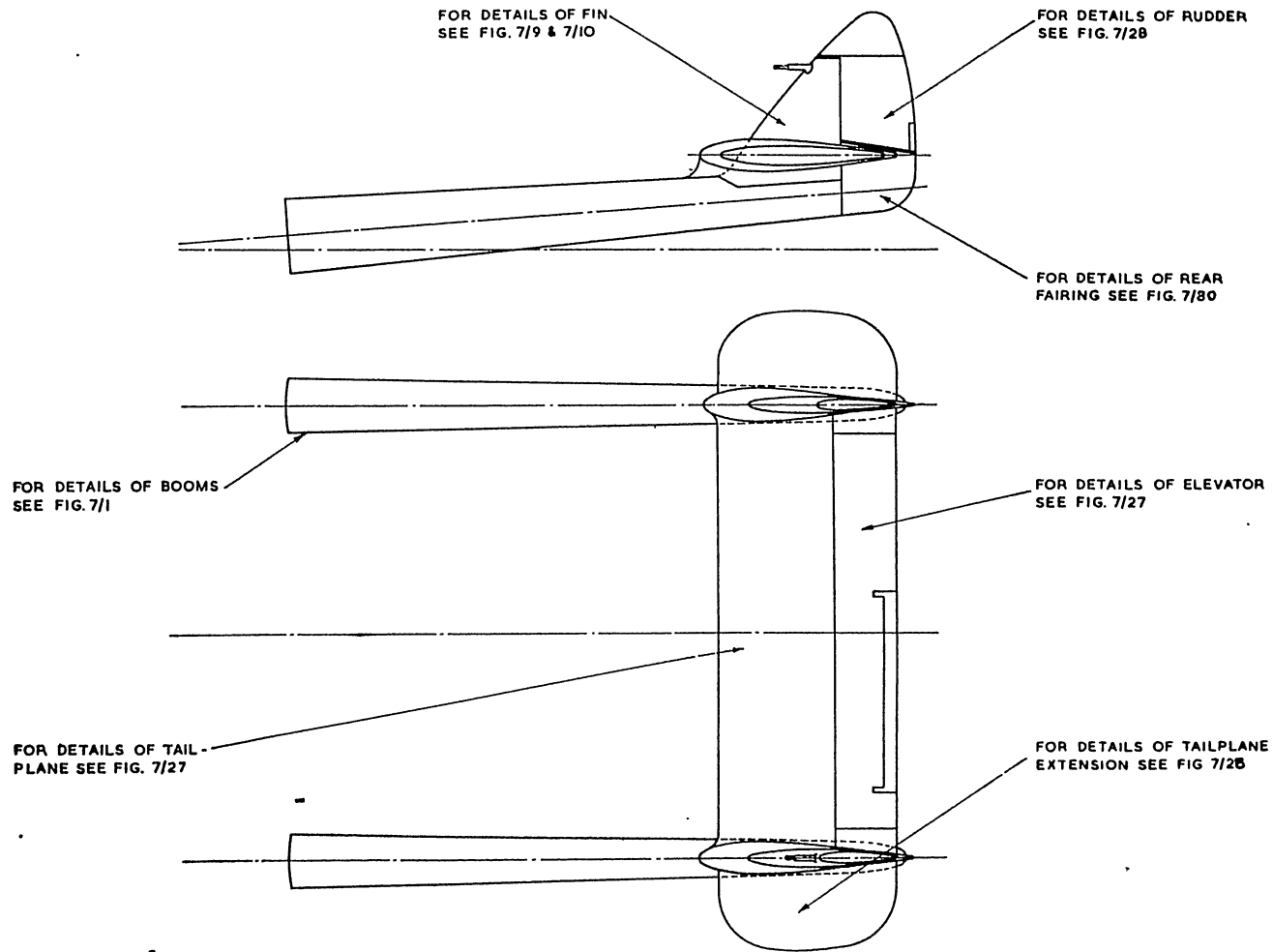
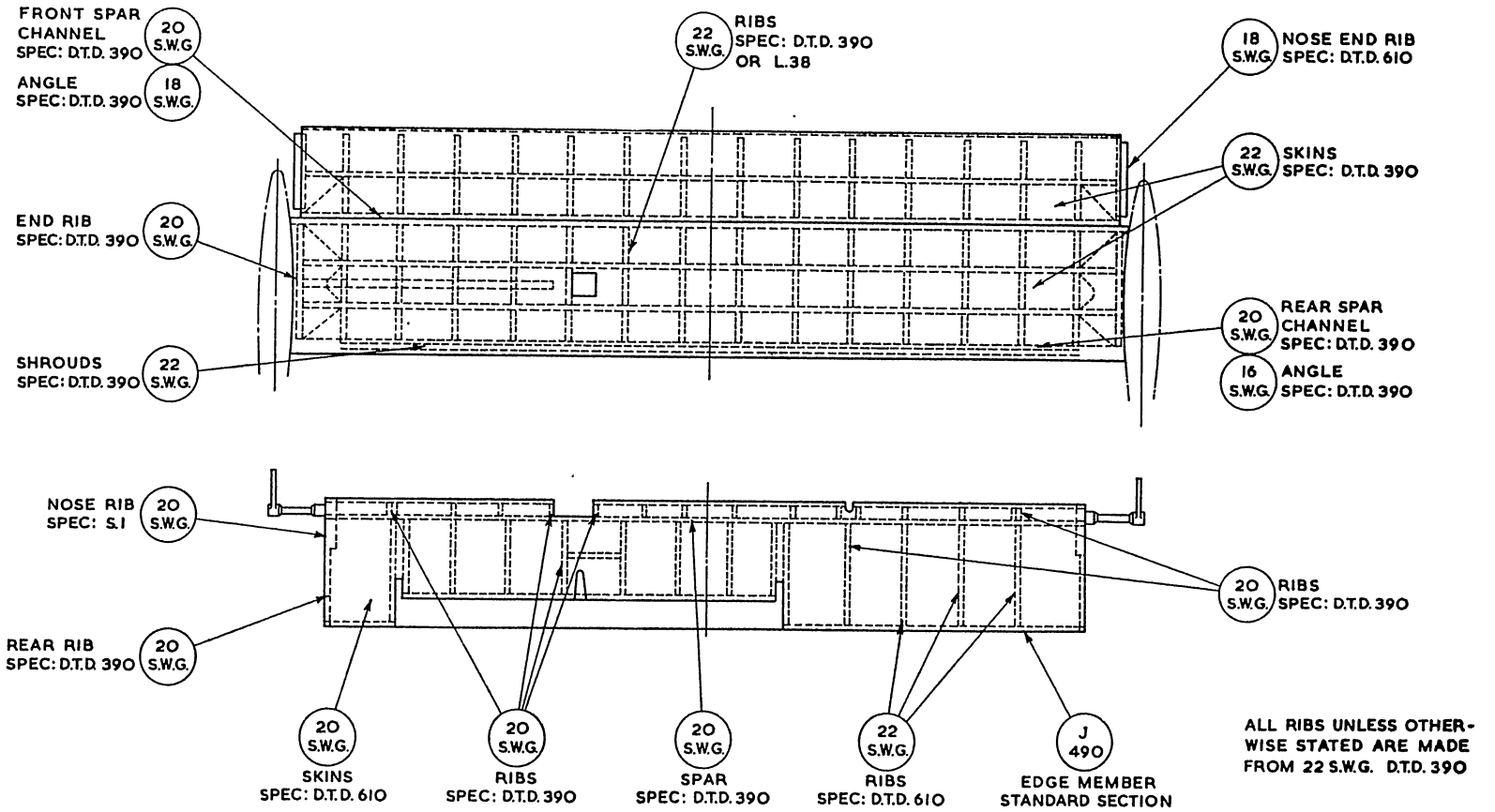


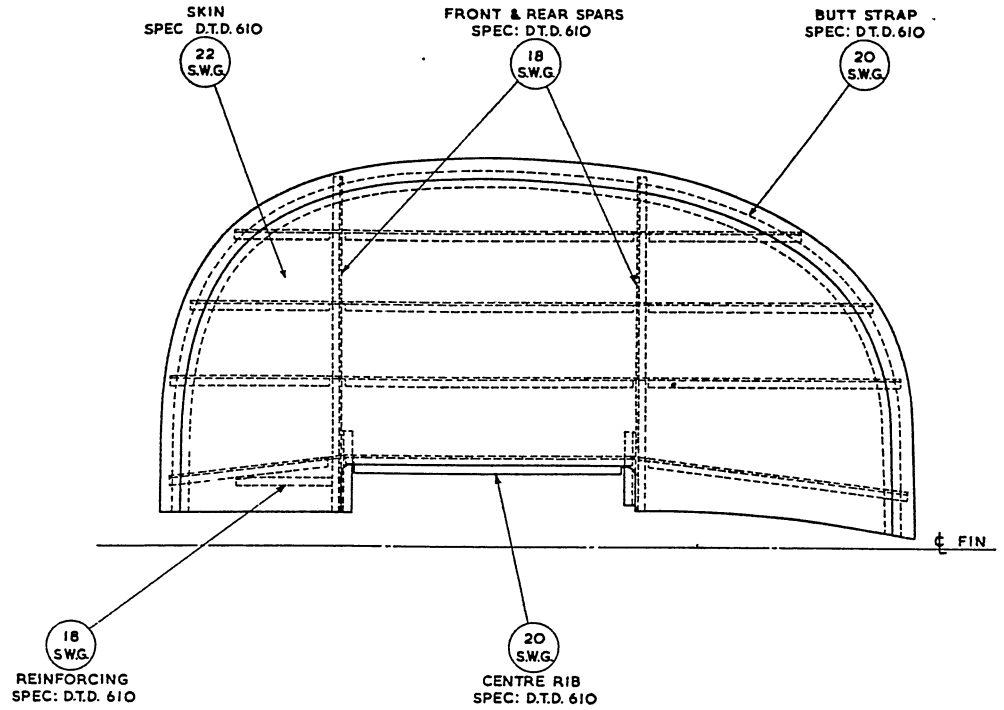
Fig. 7/26. Tail Unit Diagram (two-seater type)

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Component	Definition of damage		Repair Fig. No.	Repair Material Item No.
	Negligible	Repairable		
Skins Spars Webs Flanges Ribs Webs & flanges	Dents or bruises 0.03 in. deep 1.0 in. dia. 12.0 in. apart	0.5 in. dia. to 3.0 in. dia. 12.0 in. apart 5.0 in. or 8.0 in. insertion at nose 24.0 in. apart 2.0 in. dia., 18.0 in. apart 1.0 in. wide involving 1.0 in. depth of web Damage in excess of negligible	7/18 4/12, 7/19 7/20 & 7/21 7/23 7/23	16, 38, 39, 57, 58 19, 20, 35, 26, 45, 55, 64 18, 19, 45, 46, 56, 65 19, 20, 28, 29, 52, 53, 61

Fig. 7/27. Tail plane and elevator (two-seater type)

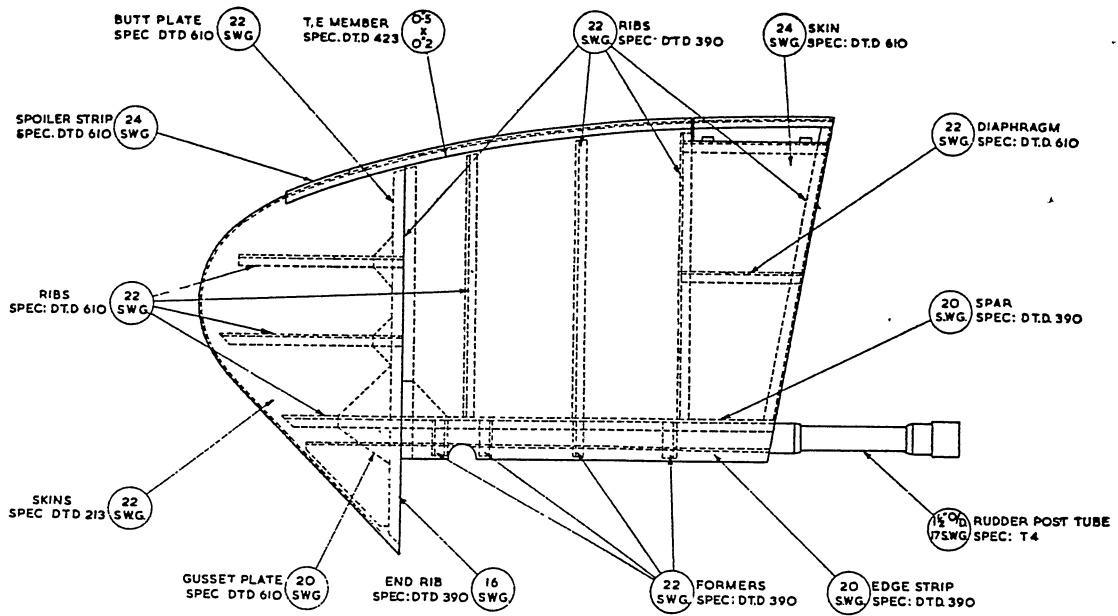


NOTE—All ribs are made from Light Alloy, Spec. D.T.D.610, 22 S.W.G. unless otherwise stated

Component	Definition of damage		Repair fig. No.	Repair material Item No.
	Negligible	Repairable		
Skin		0.5 in. to 2.0 in. dia., 12.0 in. apart	7/18	16, 38, 39, 57, 58 19, 20, 28, 29, 52, 53, 61
Spars Webs Flanges	Dents or bruises 0.03 in. deep, 1.0 in. dia. and 12.0 in. apart	0.5 in. to 2.0 in. dia., 18.0 in. apart	7/18	
		1.0 in. wide involving 1.0 in. depth of web	7/23	
Ribs Webs Flanges		1.0 in. dia. 1.0 in. wide involving 1.0 in. depth of web	7/22 7/23	

Fig. 7/28. Tail plane Extension

RESTRICTED



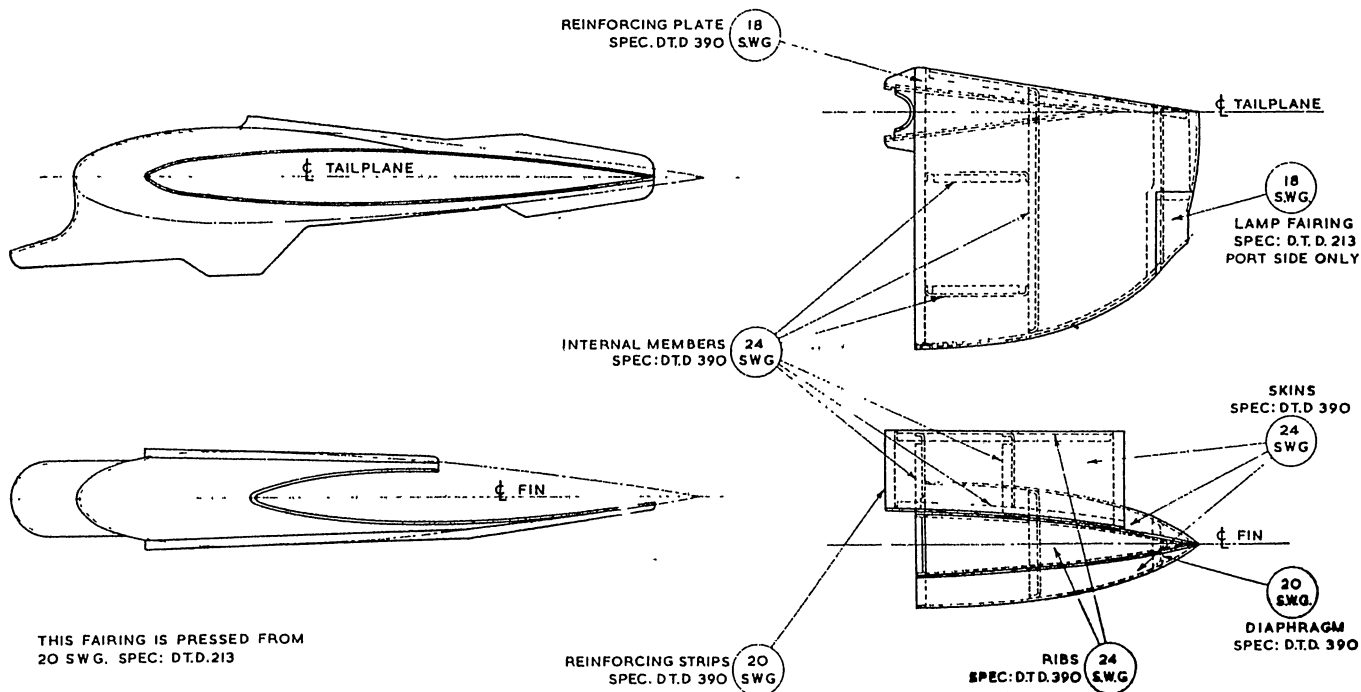
Component	Definition of damage		Repair fig. No.	Repair material item No.
	Negligible	Repairable		
Rudder Skin		0.5 to 3.0 in. dia., 12.0 in. apart	7/18	15, 38, 39, 57, 65 19, 20, 35, 36, 45, 55, 64 18, 19, 20, 37, 38, 42, 43 18, 19, 45, 46, 56, 65
		3.0 to 5.0 in. dia., 18.0 in. apart	7/19	
		8.0 in. x 5.0 in., 18.0 in. apart	7/20	
		8.0 in. insertion (nose), 24.0 in. apart	7/21	
Spars	Dents or bruises 0.03 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 to 2.0 in. dia., 18.0 in. apart	7/18	16, 38, 39, 56, 65
Webs		1.0 in. wide involving 1.0 in. depth of web, 18.0 in. apart	7/23	
Flanges		1.0 in. dia. 1.0 in. dia. involving 1.0 in. depth of web, 18.0 in. apart	7/22 7/23	
Ribs				
Webs				
Flanges				

Fig. 7/29. Rudder (two-seater type)

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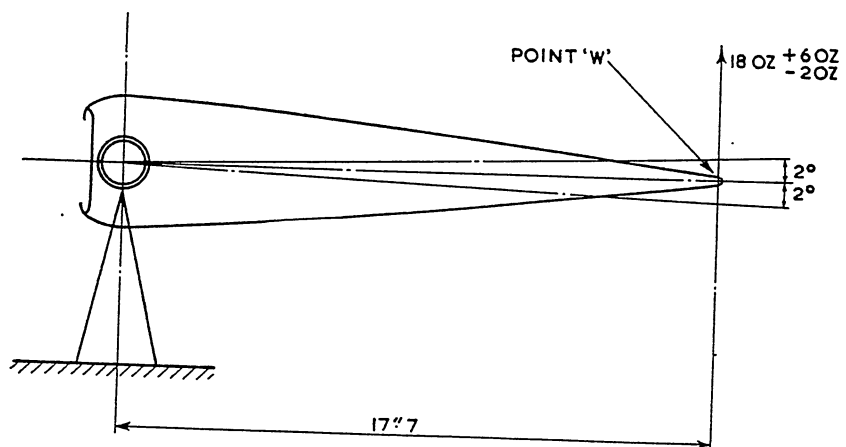
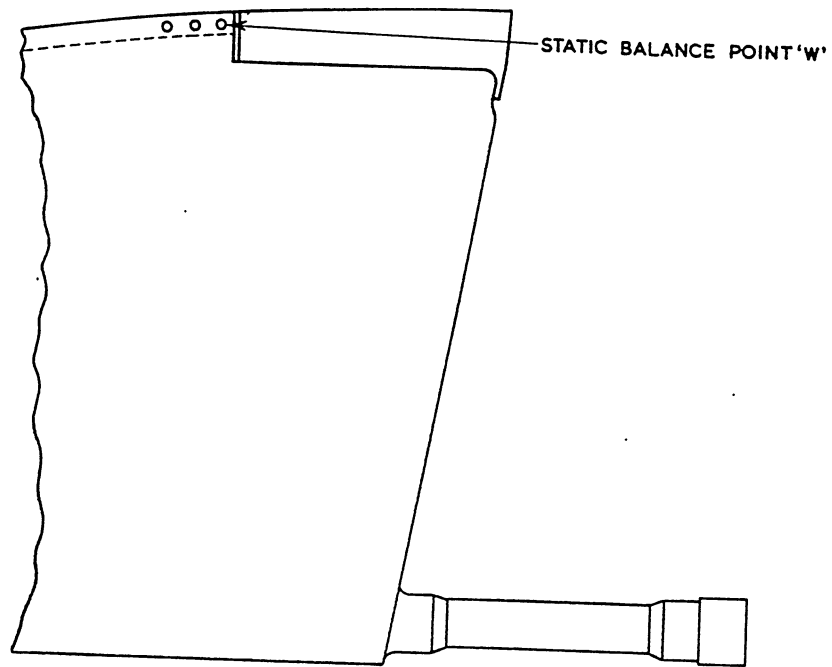


Component	Definition of damage		Repair Fig. No.	Repair Material item No.
	Negligible	Repairable		
Skins Ribs Webs Flanges	Dents or Bruises 0.03 in. deep, 1.0 in. dia., 12.0 in. apart	0.5 to 2.0 in. dia., 12.0 in. apart	7/18	16, 38, 39, 57, 58
		1.0 in. dia.	7/23	19, 20, 28, 29, 52, 53, 61
		1.0 in. wide involving 1.0 in. depth of web		

Fig. 7/30. Tail unit fairing

This leaf issued with A.L. No. 11, March, 1952

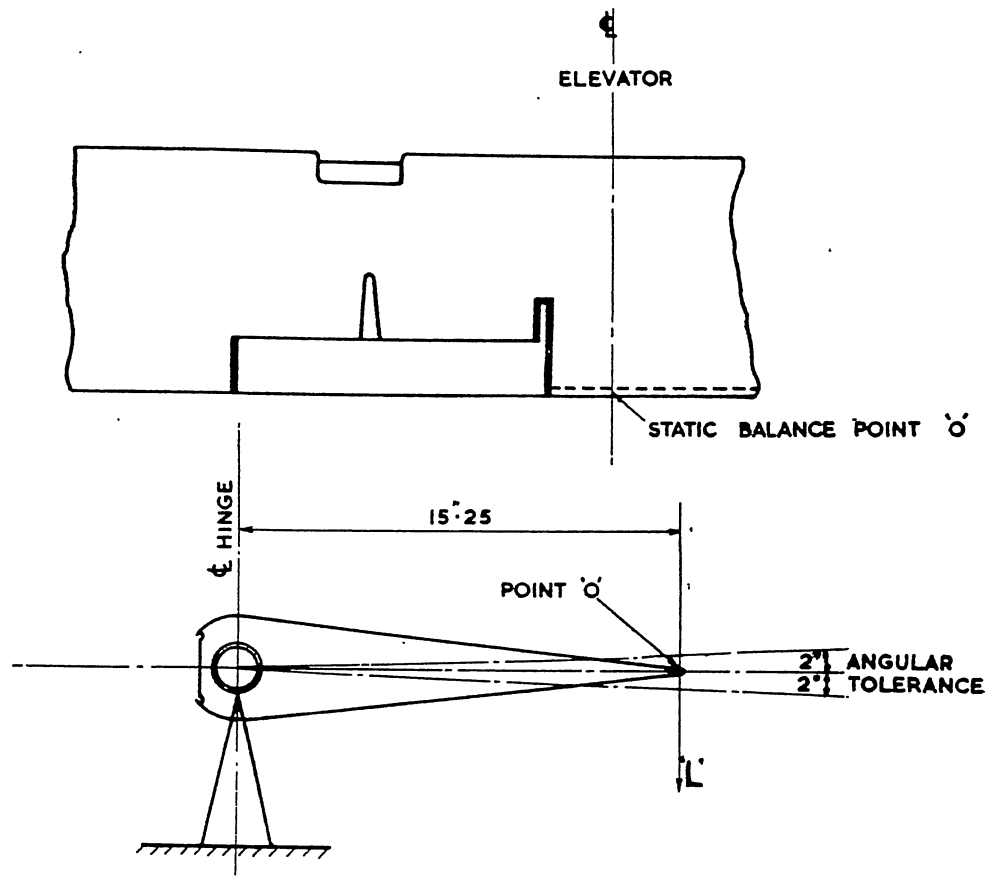
A.P.4099 & 4269, Vol. 2, Part 3, Chap. 7



This rudder, Assembly 13.TR.1, is fitted mainly to NF. Mark 10 aircraft but is being used widely as a replacement in other marks. With the rudder supported at top hinge and end of torque tube, balance must be obtained within an angular tolerance of ± 2 degrees by applying an upward load of 18 oz. $\left\{ \begin{array}{l} -6 \text{ oz.} \\ -2 \text{ oz.} \end{array} \right.$ at point 'W'.

Fig. 7/31A. Balancing of Rudder

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GENERAL NOTE

AFTER A REPAIR TO AN ELEVATOR HAS BEEN CARRIED OUT AND THE FINAL PAINT SCHEME APPLIED, A BALANCE CHECK SHOULD BE MADE IN THE MANNER GIVEN ON THIS ILLUSTRATION. THE COMPONENT SHOULD BE COMPLETE WITH TAB AND TAB CONNECTING-ROD

BALANCE CHECK

SUPPORT AT TORQUE TUBE ENDS WITH HINGE CENTRE-LINE HORIZONTAL SO THAT IT PIVOTS FREELY. THE ELEVATOR MUST BALANCE WITH ITS CHORD LINE WITHIN THE ANGULAR TOLERANCE, WHEN A LOAD 'L' IS APPLIED AT 15.25 IN. FROM THE HINGE CENTRE-LINE.

AIRCRAFT TYPE	LOAD 'L'
MK. 5 AND 9	4 LB.13 OZ. + 4 OZ. - 8 OZ.
MK. 10	6 LB.12 OZ. + 4 OZ. - 8 OZ.
MK. 11 AND 22	7 LB. 3 OZ. + - 15 OZ.

Fig. 7/31B. Balancing of elevator

(A.L.26, Jan. 58)

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FIN AND RUDDER FITTINGS

Limits of wear for items shown in fig. 7/32

Key No.	Part number	Description of Part	Nominal Diameter	Female High or Male Low Limit	Maximum Wear Limit	Plug Gauge
1	J.001480 (Mk. 5 and 9) 12.T.205 (Mk. 10, 11 and 22)	Shear bolt	0.5625	-0.004	-0.0045	Micrometer
2	J.00573 J.00570	Fin front casting Bush	0.5625 0.5625	- 0.0016 - 0.0016	-- 0.0035 -- 0.0035	ZA ZA
3	AS.2504/18G	Standard bolt	0.3125	-0.00075	-0.0015	Micrometer
4	J.00602A	Rudder hinge bracket	0.3125	--0.0004	-- 0.002	VC
5	J.00756A	Rudder hinge link	0.3125	-- 0.0004	-- 0.002	VC
6	J.00825	Top hinge bracket	0.3125	-- 0.0004	-- 0.002	VC
7	J.00561	Fin rear casting	1.0	-0.0078	-0.01	Micrometer
8	J.00875	Spigot bolt	0.3125	-0.0001	-0.0025	Micrometer

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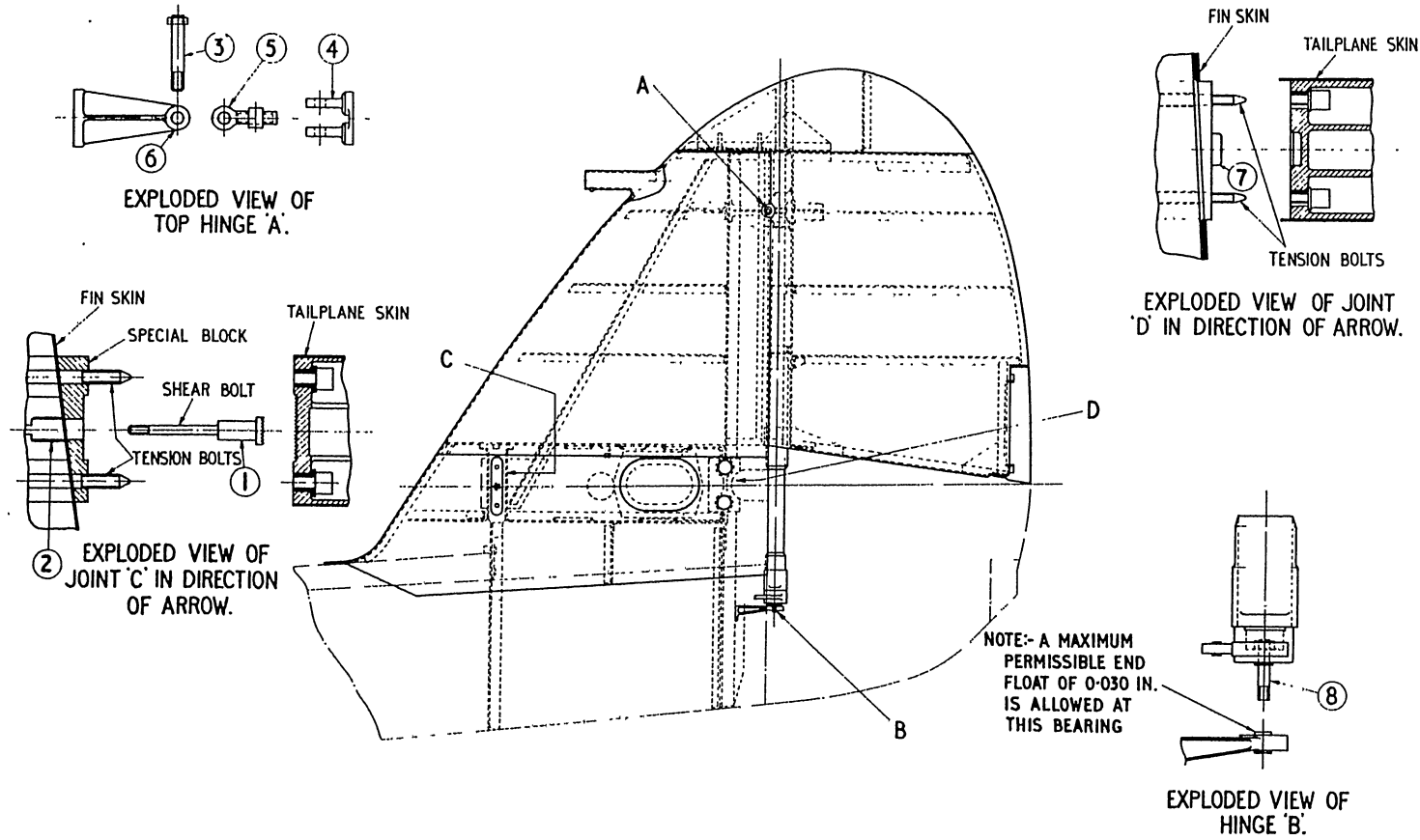


Fig. 7/32. Exploded view of fin and rudder fittings

(A.L. 26, Jan. 58)

RESTRICTED

TAIL PLANE AND ELEVATOR FITTINGS

Limits of wear for items shown in fig. 7/33

Key No.	Part number	Description of Part	Nominal Diameter	Female High or Male Low Limit	Maximum Wear Limit	Plug Gauge
1	12.TP.9	Rear spar end fittings	1-0	-0-0024	-0-005	Feelers and Standard gauge
2	A.1/11G	Standard bolt	0-3125	-0-0035	-0-0045	Micrometer
3	J.00589	Elevator hinge	0-3125	-0-0004	-0-002	VC
4	A.1/20G	Standard bolt	0-3125	-0-0035	-0-0045	Micrometer
5	J.00171	Elevator hinge link	0-3125	-0-0004	-0-002	VC
6	J.00589	Elevator hinge bracket	0-3125	-0-0004	-0-002	VC
7	J.00302	Spigot bolt	0-3125	-0-0001	-0-0025	Micrometer
8	AS.2504/10G	Bolt	0-3125	-0-00075	-0-0015	Micrometer
9	K.00379 (Mk. 5 and 9) 13.CF.601 (Mk. 10, 11 and 22)	Connecting-rod top end	0-3125	-0-0003	-0-002	VC
10	J.00359	Pivot pin	0-25	-0-0015	-0-0035	Micrometer
11	J.00526A	Jack head	0-25	-0-0003	-0-0025	VB
	J.00362	Bush	0-25	-0-0003	-0-0025	VB
12	J.00893	Special bolt	0-1875	-0-0015	-0-001	Micrometer
13	J.00872	Jack barrel	0-1875	-0-0025	-0-0035	VA
14	J.00873	Jack fork end	0-1875	-0-0025	-0-0035	VA
15	J.00894	Special bolt	0-1875	-0-0015	-0-001	Micrometer
16	J.00873	Jack fork end	0-1875	-0-0025	-0-0035	VA
17	J.00453	Special bolt	0-1875	-0-0009	-0-0015	Micrometer
18	J.001829	Tab lever	0-1875	-0-0004	-0-0035	VA

RESTRICTED

(A.L.26, Jan. 58)

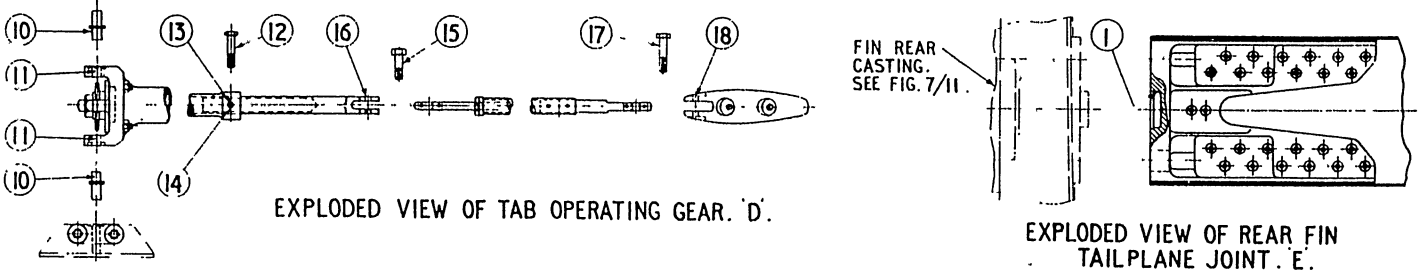
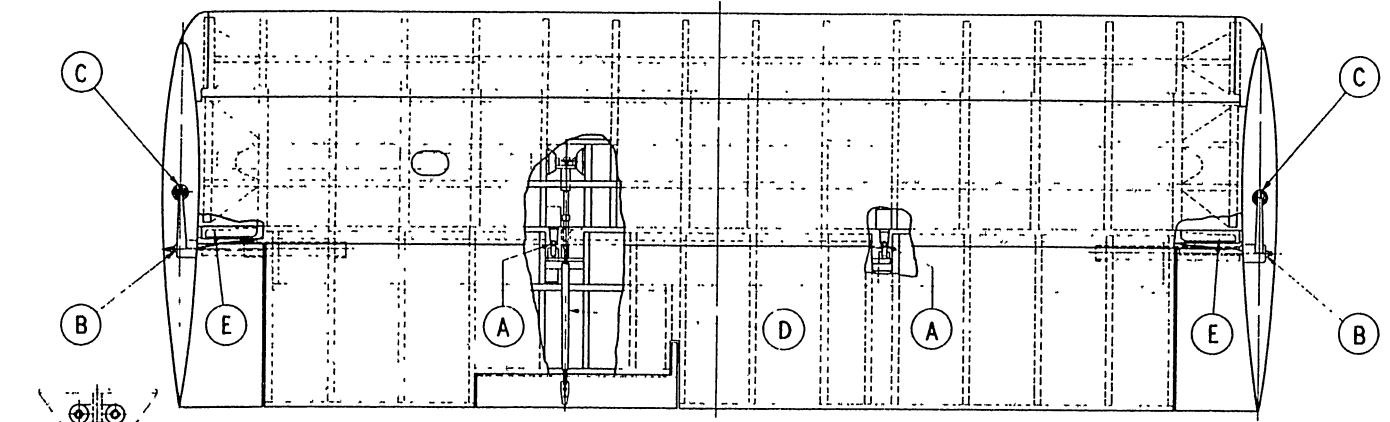
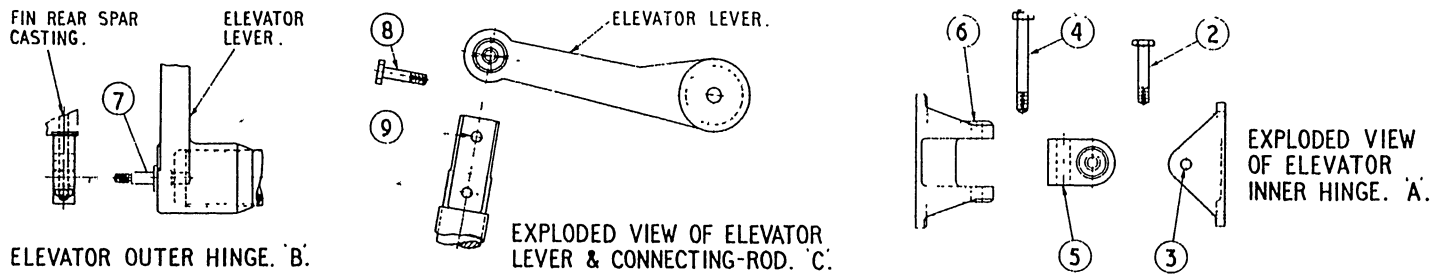


Fig. 7/33. Exploded views of tailplane and elevator fittings

RESTRICTED

APPENDIX

APPENDIX

1. This Appendix introduces and approves the following list of repair drawings and Vol. 2, Part 4, Repair Leaflets.

2. Issue numbers are not quoted for the repair drawings listed inasmuch as it is the practice of the firm manufacturing Vampire Aircraft to cancel the existing drawing number when an important design alteration is made and to reissue the amended drawing under a new number. Any drawing number quoted in the Table is current irrespective to its issue number. Holders of any drawings obtained to illustrate repair methods should take steps to obtain replacements of them when the numbers of such drawings are deleted by A.L. action and replaced by new numbers.

List of Vol. 2, Part 4 Repair Leaflets and applicable drawings

List of contents Vol. 2, Part 4	Repair Drawing No.	Repair Leaflet Number	Date of Issue	Mark of the aircraft to which repair is applicable
	Group B—ENGINE MOUNTING			
	Group C—SYSTEMS			
	Group D—FUSELAGE			
Shell				
Damage to fuselage	R.00.A.1	D.1/1	July 1950	All marks
Access doors	R.00.A.2	D.1/2	July 1950	Mk. 1
Replacement of Joint B member	R.00.A.6	D.1/3	July 1950	All marks
Bulkheads and Diaphragms				
Firewall	R.00.A.7	D.2/1	July 1950	All marks
Cowl support channel	R.00.A.3	D.2/2	July 1950	All marks
	R.00.A.7			
Repair of rear cone	R.00.L.1	D.2/3	July 1950	All marks
Cannon beam	R.00.A.5	D.2/4	July 1950	All marks
Attachment fittings				
Wing and fuselage	—	D.3/1	July 1950	All marks
Cross tube replacement	R.00.A.69	D.3/2	July 1950	All marks
Main plane attachment fittings	R.00.A.67	D.3/3	July 1950	All marks
replacement				
Replacement root end fittings	R.00.D.142			
	R.00.D.143-4	D.3/4	July 1950	All marks
	Group E—ALIGHTING GEAR			
	Group F—MAIN PLANE			
Attachments				
Replacement of root end fittings	R.00.142	D.3/4	July 1950	All marks
	R.00.143-4			
Stringer				
Stiffening of stringer at Rib No. 2	R.00.D.5	F.2/1	July 1950	Mk. 1
	R.00.D.1			
Skin				
Treatment of elongated holes	R.00.D.8	F.3/1	July 1950	All marks
	Group G—TAIL UNIT (incorporating Group H)			
Elevator				
General repair	R.00.J.21	G.1/1	July 1950	All marks
	R.00.J.2			
Rudder				
General repair	R.00.J.3	G.2/1	July 1950	Mk. 3
Tail plane				
General repair	R.00.J.1	G.3/1	July 1950	Mk. 1
	(Sheet 1, Sheet 2)			
Fin				
Repair of upper portion	R.00.J.4	G.4/1	July 1950	All marks
Stub boom				
Removal of nose and rear portion	R.00.D.9	G.5/1	July 1950	Mk. 1 and 3
	Group J—MISCELLANEOUS			

R E S T R I C T E D

MULTI-REPAIR SCHEME

Repair Leader shall submit a repair scheme to the appropriate authority when required by the instructions in the following paragraphs.

Repair Leader apply the following instructions and Scheme unless specifically stated otherwise.

In this Part the absence of suitable repair instructions shall be construed if no other instructions remain that the component may be repaired.

CA aircraft. In the absence of any instructions and when the technical officer considers that repair of the component is required, a repair scheme shall be submitted to the Director of Engineering, Air Ministry, with details of the damage and the extent of the damage. Attached to the details with sketches shall be a diagram showing the extent of the damage.

CV aircraft. In the absence of any instructions and when the technical officer considers that repair of the component is required, instructions regarding the repair shall be obtained from the appropriate Maintenance Manual.

ARRANGEMENT OF REPAIR LEADER

- Group 1. All aircraft.
- Group 2. All aircraft.
- Group 3. All aircraft.
- Group 4. (Comprising Group 5)
- Group 5. (Responsible for...)

RESTRICTED

PART 4

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet A.O/1

GROUP A—GENERAL INFORMATION

LIST OF CONTENTS

	Repair Leaflet No.	Date of issue
Make up of Part 4... ..	A.1/1	May, 1950



R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet A.1/1

GENERAL INFORMATION

Make up of Part 4

1. Repair Leaflets to this Vol. 2, Part 4 will be issued in a manner generally similar to Vol. 2, Part 1 leaflets of aircraft handbooks.
2. Recipients are to insert each new Repair Leaflet in its correct place in the Group indicated by its suffix letter and enter its title number in the appropriate place in the List of Contents of that Group. In each case the Leaflet's place in the publication is completely defined by its number, e.g., a leaflet numbered E5/1 should be inserted in Group E immediately following the Leaflets bearing numbers with the prefix E4/
3. When it is necessary to amend or cancel the information given in any Repair Leaflet contained in Part 4 a Leaflet cancelling the information will be issued to replace the original Leaflet which should be removed and disposed of. If an amendment of the Repair Leaflet is made it will be issued under another number in the same series.
4. New up to date Lists of Contents will be issued periodically in exactly the same way as Repair Leaflets. These Lists of Contents are to be inserted in front of the appropriate groups, the original Lists of Contents being removed and disposed of.

R E S T R I C T E D

GROUP D—FUSELAGE

LIST OF CONTENTS

Title of repair leaflet	Repair drawing number	Marks of aircraft to which repair is applicable	Repair leaflet number	Date of issue
SHELL				
Damage to fuselage	R.00.A.1	All marks	D.1/1	July 1950
Access doors	R.00.A.2	Mk. 1	D.1/2	July 1950
Replacement of Joint B member	R.00.A.6	All marks	D.1/3	July 1950
BULKHEADS AND DIAPHRAGMS-				
Firewall	R.00.A.7	All marks	D.2/1	July 1950
Cowl support channel	R.00.A.3	All marks	D.2/2	July 1950
	R.00.A.7			
Repair of rear cone	R.00.L.1	All marks	D.2/3	July 1950
Cannon beam	R.00.A.5	All marks	D.2/4	July 1950
ATTACHMENT FITTINGS				
Wing and fuselage		All marks	D.3/1	July 1950
Cross tube replacement	R.00.A.69	All marks	D.3/2	July 1950
Main plane attachment fittings replacement.	R.00.A.67	All marks	D.3/3	July 1950
Replacement root end fittings	R.00.D.142	All marks	D.3/4	July 1950
	R.00.D.143-4			

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.1/1

FUSELAGE

Repair of damage to fuselage shell

This repair leaflet defines the method to be adopted in repairing damage to the fuselage shell in certain areas which are not shaded on Drawing R.00A.1.

Preparation

1. Careful inspection must be made to confirm that the areas of the fuselage, which are shaded on the drawing, are not damaged. The damaged ply skin must be cut out and careful examination effected of the exposed members. Should any of these prove to be damaged the affected portions must be cut away and repair sections scarfed in. The inner plyskin will of course have to be removed and replaced over the damaged area.

Repair drawing

2. The following repair drawing is required:—
R.00.A.1—Repairs to fuselage shell.

Repair instructions

3. To effect the repair, a new portion of inner ply skin should be scarfed in and damage to internal members repaired by scarfing in new sections as necessary. To complete the repair a new portion of outer ply skin should be scarfed in.

Estimate of requisite labour

4. The man-hours required for this repair can be estimated by reckoning that an area of 1 sq. ft. will take approximately 35 man-hours.

Repair material

5. The following material will be required:—

Stores Ref.	Part No.	Description	Size	Specification
31A/87 or /27	—	Ply, birch	$\frac{1}{8}$ in.	V.3/150
31A/83	—	Ply, birch	$\frac{5}{16}$ in.	V.3/130
31A/82 or -201	—	Ply, birch	$\frac{1}{16}$ in.	V.3/120
31A/143	X101 Mk. 1	Spruce	1.0 in. \times $\frac{7}{16}$ in.	} D.T.D.36B Grade A
31A/143	X102 Mk. 8	Spruce	3.5 in. \times $\frac{7}{16}$ in.	
31A/99	—	Balsa planking	5.0 in. \times $\frac{7}{16}$ in.	} D.H.S.33
29/435	—	Brad, brass	$\frac{1}{2}$ in. \times 20 s.w.g.	

R E S T R I C T E D

APPLICABLE TO MK. I AIRCRAFT ONLY

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.1/2

FUSELAGE

Access doors

This repair leaflet defines the methods to be adopted in repairing damage to the access doors.

Preparations

1. The affected outer skin should be removed, where damaged, and any damaged portions to internal members cut away. The inner skin should then be cut away over the damaged portion if necessary.

Repair drawings

2. The following repair drawings will be required:—
R.00.A.2—Repair to access doors.

Repair instructions

3. Necessary new sections of internal members should be scarfed in, internal ply should be scarfed in where necessary and, finally, new sections of external ply scarfed in as required.

Estimate of requisite labour

4. The repairs outlined will take 27 to 30 man hours for the average repair.

Repair material

5. The following materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
31A/87 or /27		Ply, birch	$\frac{1}{16}$ in.	V.3/120
31A/83		Ply, birch	$\frac{3}{32}$ in.	V.3/130
31A/143		Spruce	0.45 in. \times $\frac{1}{2}$ in.	
31A/99		Balsa planking	5.0 in. \times $\frac{7}{16}$ in.	D.H.S.33
29/435		Brads, brass	$\frac{1}{2}$ in., 20 s.w.g.	

R E S T R I C T E D

FUSELAGE

Method of replacement of joint 'B' member

This Repair Leaflet defines the method to be adopted in replacing joint 'B' member.

Preparation

1. (1) Completely strip fuselage by removing engine, firewall cross tubes, bracing tubes, etc. (see Repair Leaflet D.2/1).
- (2) Cut away damaged member leaving all woodscrews and brads projecting.
- (3) Cut off projecting woodscrews and brads and clean all glue or grease from the face of the plywood.

Repair drawing

2. The following repair drawing will be required :—
R.00.A.6—Method of replacement of joint 'B' Member of the Fuselage.

Repair instructions

3. (1) Mark off new screw holes on inner surface of shell, using existing screws as datum (see Repair drawing R.00.A.6), and drill pilot holes.
- (2) Offer up new member and cramp in position, and drill through pilot holes to suit woodscrews (see fig. 1/3 in part 3 of this Volume 2).
- (3) Glue and screw member into position. Fix cramps as convenient, and leave for specified setting time.

Estimate of requisite labour

4. The repairs outlined will take approximately 250 man-hours.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
See Vol. 3 28S/2213 28S/2220 28S/2219	A.00215A	L.H. Joint 'B' member		} Complete Assembly
	A.00216A	R.H. Joint 'B' member		
	AGS/250/58	} Woodscrews, brass, csk/hd.	No. 8 × 1½ in.	
	AGS/250/60		No. 8 × 1½ in.	
AGS/250/43	No. 6 × 1½ in.			

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.2/1

FUSELAGE

Firewall

This repair leaflet describes the method to be adopted in repairing damage to firewall.

Preparation

1. Remove the engine and any accessories necessary to obtain access to damaged material.

Repair drawing

2. The following repair drawing is required:—
R.00.A.7—Repair to firewall.

Repair instructions

3. Inspect firewall for damage. Any small buckles should be dressed out. Material with small holes or cracks should be cut away and a patch riveted over the damage as shown on the drawing. Large buckles which cannot be dressed out must be repaired by first drilling a hole of sufficient diameter to permit the dressing out and then fitting a patch over the damage as shown.

Estimate of requisite labour

4. The repairs outlined will take approximately 4 man-hours.

Repair materials

5. The following materials will be required:—

Stores Ref.	Part No.	Description.	Size	Specification
30B/949		Light alloy	16 s.w.g.	DTD.390 or L.38
28Q/10407	AS/2228/404	Rivet, mshr/hd. alum. alloy	$\frac{1}{8}$ in. dia.	DTD.327

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.2/2

FUSELAGE

Cowl support channel

This repair leaflet describes the method to be used in repairing damage to the cowl support channel.

Preparation

1. Remove the damaged portion of cowl support channel.

Repair drawing

2. The following repair drawings are required:—
R.00.A.3—Repair to cowl support channel.
R.00.A.7—Large patch repair.

Repair instructions

3. Cut away damaged portion of cowl support channel.
Buckles of a minor nature should be dressed out.
Larger buckles and other damage must be repaired as shown on the drawing R.00.A.7 and Repair Leaflet D.2/1.
Rivet on new portion of cowl support channel as shown on drawing R.00.A.3.

Estimate of requisite labour

4. The repairs outlined will take approximately 24 man-hours.

Repair materials

5. The following materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
30B/950	R.00.A.22	Butt strap	18 s.w.g.	D.T.D.390
28Q/11659	AS/2228/506	Rivet } mshr/hd.	$\frac{5}{32}$ in. dia.	} D.T.D.327
28Q/10407	AS/2229/404	alloy } csk/hd 90°	$\frac{1}{8}$ in. dia.	

R E S T R I C T E D

APPLICABLE TO MK. 1, 3 AND 5 AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.2/3

FUSELAGE

Front bulkhead—Rear cone

This repair leaflet defines the method to be adopted in repairing damage to the front bulkhead of the rear cone.

1. Cut away damaged portion of bulkhead.

Repair drawings

2. The following repair drawing will be required:—
R.00.L.1—Repair to front bulkhead, rear cone.

Repair instructions

3. Carry out repair as shown on repair drawing.

Estimate of requisite labour

4. The repairs outlined will take approximately 4 man-hours.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
31B/951 See Vol. 3	L.00858-9	Alclad sheet Front and rear fish-plates	20 s.w.g.	D.T.D.610
28Q/10407	AS/2228/404	Rivet, alum. alloy, mshr/hd.	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in.	} D.T.D.327
28Q/10653	AS/2228/505	Rivet, alum. alloy, mshr/hd.	$\frac{5}{32}$ in. dia. \times $\frac{5}{16}$ in.	

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D2/4

FUSELAGE

Cannon Beam

This repair leaflet describes the method to be used in repairing damage to the cannon beam.

Preparation

1. Remove bolts over area to be covered by repair.

Repair drawing

2. The following repair drawing will be required:—
R.00.A.5—Repair to forward cannon beam.

Repair instructions

3. Indentation caused by bolts should be filled with plastic wood and ply; repair patch well glued and screwed to beam.

Estimate of requisite labour

4. The repairs outlined will take approximately 10 man-hours.

Repair materials

5. The following material will be required:—

Stores Ref.	Part No.	Description	Size	Specification
31A/12 28S/2194	AGS250-39	Ply, birch Woodscrews, brass	$\frac{1}{4}$ in. No. 6, $\frac{3}{4}$ in. long	V.3/186

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

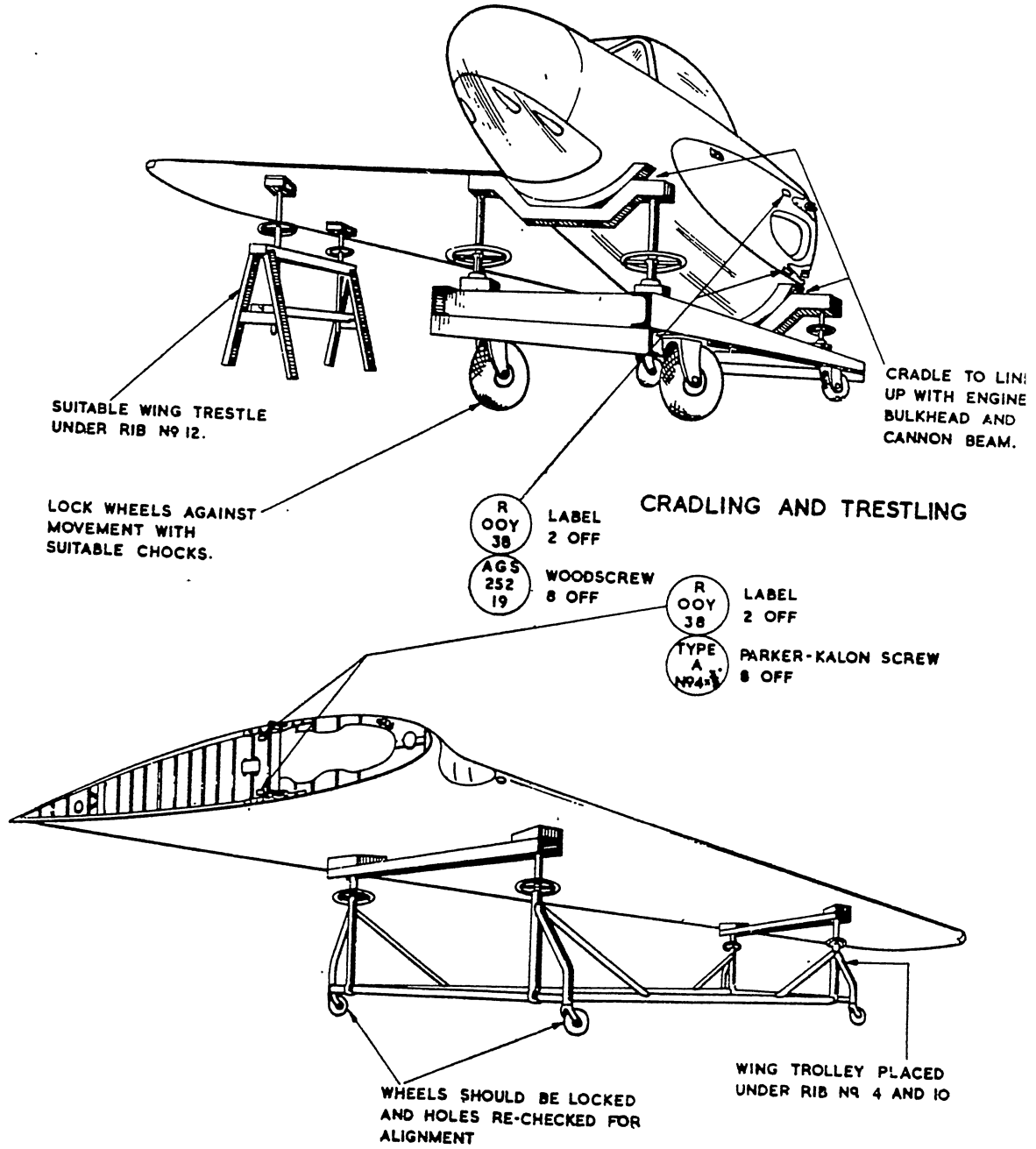
Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.3/1

FUSELAGE

Wing and Fuselage attachment fitting

This repair leaflet describes the method to be adopted when it is necessary to ream to the appropriate oversize the holes in wing and fuselage attachment fittings.



R E S T R I C T E D

Preparation

1. Remove engine and one wing from the aircraft and cradle the fuselage with the other wing still attached. The detached wing should then be trestled, preferably on a trolley as in the illustration.

Operator should be stationed on the wing where he should remain throughout the operation to avoid disturbance of the relative positions of fuselage and the wing under treatment.

Offer up wing to fuselage, line up holes to be reamed, check up with gauge adjusting wing and fuselage until the holes to be reamed are in alignment.

Insert guide bush in hole to be reamed.

Insert reamer 1.005 in. dia. in ratchet using the special spanner for securing.

Insert holding bolts in holes not to be reamed.

Recheck alignment of holes.

Care must be taken after checking alignment that there is no unnecessary movement to disturb wing or fuselage.

Repair instruction

2. Apply a heavy mineral oil to reamer and interior of hole.

Locate reamer in the guide bush and rotate *clockwise* using ratchet key.

Withdraw the reamer still rotating clockwise.

Examine hole to ascertain if all scratches have been removed. If removal has not been effected use next oversize reamer.

When reaming is satisfactory and all scores eliminated test size of the hole with 'GO' and 'NO GO' plug gauges. If 'GO' gauge is tight pass reamer, rotating clockwise, through hole afresh.

Remove guide bush and insert into reamed hole the appropriate bolt.

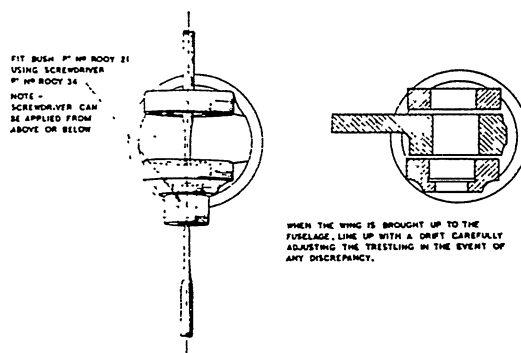
Special precaution should be taken, after the reaming is completed, in the reassembling of the wing, to use the appropriate bolt in each hole with anti-seize grease. Should any scores be caused to the hole in the process of reassembly, then the hole affected must be reamed afresh to the next oversize.

All wing attachment pins, standard or oversize, are cadmium plated. It must be remembered that when a pin has been removed it must be discarded, no matter what its condition may be, and a new pin fitted in its place. Old pins, when unscratched, are reconditioned and replated, before being passed for further use.

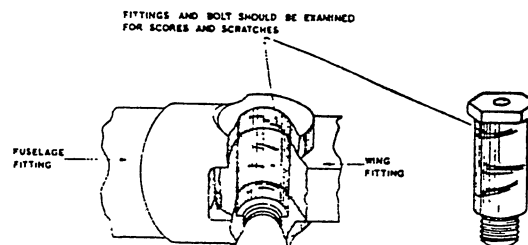
Estimation of labour

3. The repair outlined will take approximately 40 man-hours for reaming the attachment holes in each wing. Four men will be needed to handle the wing and another operative is stationed on top of the wing throughout the repair. It will generally be found convenient to have a sixth man stationed under the wing to pass up the instructions to the man on the wing.

INSPECTION OF DAMAGE



PREPARATION FOR REAMING



INSPECTION OF DAMAGE

R E S T R I C T E D

A suitable entry should be made in the log book of the aircraft after the reaming has been completed and the wings refitted.

Repair material

4. The following repair material will be required:—

Stores Ref.	Part No.	Description	Notes
26FC/1082	R.00.Y.35A	Tool kit, comprising:—	A complete tool kit is supplied under this store reference. Separate items of the kit are not referenced singly
	R.00.Y.17	} Reamers, oversize	
	R.00.Y.18		
	R.00.Y.19	} Guide bush	For use with reamers
	R.00.Y.20		
	R.00.Y.21	} Gauge, plug	For use with reamers
	R.00.Y.10		
	R.00.Y.11	} Gauge, plug	For use with reamers
	R.00.Y.12		
	R.00.Y.13	} Key ratchet	For use with reamers
	R.00.Y.30		
	R.00.Y.34	} Screwdriver	Specially shaped for the job
	R.00.Y.39		
See Vol. 3	R.00.D.161-4	} Oversize pin	Specially shaped for the job
	R.00.D.165-7		
		} Oversize pin	Attachment at joint "A"

RESTRICTED

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.3/2

FUSELAGE

Replacement of fuselage cross tubes

This repair leaflet describes the method to be used in removing and replacing cross tubes in the fuselage.

Preparation

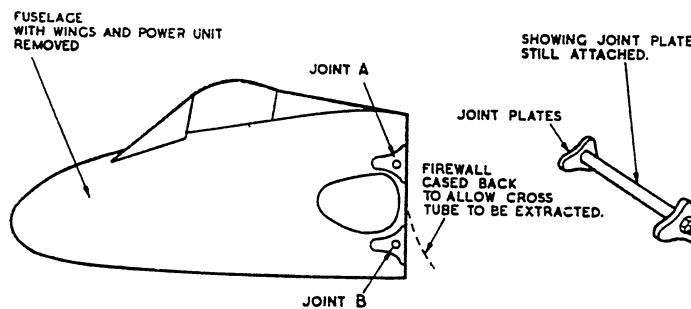
1. The fuselage should first be stripped of main planes and power unit and suitably supported before following the procedure below:—

- (1) Remove engine mountings.
- (2) Disconnect all pipes and cables, forward of the firewall, that pass through it.
- (3) Slacken off engine control cables.
- (4) Remove vertical pipe in centre of firewall.
- (5) Remove bolts from Joint plates Pt. No. A.00305-6 for top cross tube, or from Joint plates Pt. No. A.00441-2 for bottom cross tube.
- (6) (a) If lower cross tube is to be replaced, all woodscrews and bolts securing firewall to fuselage, round the lower half, and up to the upper cross tube either side, must be removed.
(b) If upper cross tube is to be replaced, all woodscrews and bolts securing firewall to fuselage, round the upper half, and down to the lower cross tube either side, must be removed.
- (7) Remove vertical stiffener in centre of forward face of firewall.
- (8) Remove bolts securing cross tube to firewall.
- (9) Ease firewall back sufficiently to enable cross tube and joint plates to be extracted.

Replacement of cross tubes

- (1) Replace cross tube into position, and return firewall to its original shape.
- (2) Fit bolts securing cross tube to firewall.
- (3) Replace vertical stiffener in centre of forward face of firewall.
- (4) Replace woodscrews and bolts, securing firewall to fuselage.
- (5) Replace bolts in Joint plates, Pt. No. A.00305-6 or A.00441-2.
- (6) Replace vertical pipe in centre of firewall.
- (7) Reset engine control cables.
- (8) Connect up all pipes and cables.
- (9) Refit engine mountings.
- (10) Install power unit and re-assemble wings to fuselage.

3. The following repair drawing will be needed for guidance:—
R.00.A.69—Fuselage cross tubes.



R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.3/3

FUSELAGE

Replacement of main plane attachments

This repair leaflet defines the method to be adopted in replacing main plane attachments to the fuselage in all marks of the aircraft where Mod. 314 has not been incorporated.

Preparation

1. Drill and drive out heads of pins and remove fork end fitting. Test pins (Pt. No. D.00560-1) in holes in cross tube. If they prove to be slacker than a light drive fit, oversize pins must be used on re-assembly.

Repair drawing

2. The following repair drawing will be required:—

R.00.A.67—Replacement of wing attachments to fuselage.

Repair instructions

3. Insert new fork end fitting and fit pins to the necessary size.

Estimate of requisite labour

4. The repairs outlined will take approximately 10 man-hours per fitting.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size
See Vol. 3	D.004239	Lower fork end	Special
	D.004240		
	D.004241	Upper fork end	
	D.004242		
	D.00560-1	Pin	
	R.00.D.173	Pin, oversize	
R.00.D.185	Pin, oversize		

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet D.3/4

MAIN PLANE

Replacement of Root End Fittings

This repair leaflet describes the method to be used in repairing or replacing the root end fittings and also the method to be adopted in embodying Mod. 112.

Preparation

1. Remove fuel tank door, fuel tank and air intake duct.

Repair drawings

2. The following drawings will be required:—

R.00.D.142
R.00.D.143-4 } Replacement of Root End Fittings

Repair instructions

3. Cut away top and bottom skins as shown on the drawing, remove bolts and rivets securing wing joint fittings to flanges of ribs. Remove bolts securing wing attachment plate and rivets securing wing joint fittings. Withdraw wing attachment plate. Make up packing plates, patch plates, special washers, etc., and assemble in the order and method shown on the drawing, securing that the holes on the wing joint fittings line up with the appropriate holes in the wing attachment plate. When assembling patch plate, pitch rivets as near as possible to the pattern shown on drawings, only deviating from the illustration when rivets are pitched between existing bolts or rivets.

Estimate of requisite labour

4. Labour can be estimated on the basis that each joint will take approximately 60 man-hours.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
	JOINT A			
	R.00.D.145.ND	Special anchor plate	$\frac{3}{8}$ in.	S.1
28D/9498	AS.1882/7C	} Bolt, m.s., csk/hd. 90°	2 B.A.	S.1
28D/8460	AS.1882/5C			
28D/8459	AS.1882/4C	} Dural packing washer	2 B.A.	L.1 or L.3
28W/8084	AS.471/C			
28M/5316	A.16Y.CP	Thin nut	2 B.A.	S.1
28Q/7593	AS.2229/303	} Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{32}$ in.	} D.T.D.327
28Q/7118	AS.2229/507		$\frac{5}{32}$ in.	
28B/9845	AS.1882/4G	} Bolt, m.s., csk/hd., 90°	$\frac{5}{16}$ in.	S.1
	R.00.Y.175		Special washer	
28M/758	A.16.Y.GP	Nut, m.s.	$\frac{5}{16}$ in.	S.1
28Q/	AS.2229/609	} Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{16}$ in.	D.T.D.327
			Washer, m.s.	
28M/6045	A.G.S.946.E	Washer, m.s.	$\frac{3}{8}$ in.	} S.80
	A.G.S.946.F			
28B/7126	A1.5E	Bolt, m.s.	$\frac{1}{4}$ in. B.S.F.	S.1
28W/3072	A.G.S.160/D	Washer	$\frac{1}{4}$ in. B.S.F.	S.21
28D/9640	AS.1882/5E	} Bolt, csk/hd., 90°	$\frac{1}{4}$ in. B.S.F.	S.1
	R.00.D.177-178			
	R.00.D.179-180	} Wing joint fitting		} L.40

R E S T R I C T E D

Stores Ref.	Part No.	Description	Size	Specification	
28W/3074	A1.GY.JP.	Nut, m.s.	$\frac{3}{8}$ in.	S.1	
28D/10084	A.G.S.160/F	Washer	$\frac{3}{8}$ in.	} S.21	
28D/7082	AS.1882/4E	Bolt, m.s. csk/hd., 90°	$\frac{1}{4}$ in. B.S.F.		
28M/7157	A1.4E	Bolt, m.s.	} $\frac{7}{16}$ in.	S.1	
28M/7155	A.16Z.LP	Nut, m.s.			
28M/7156	A.G.S.946.G	Washer, m.s.	} $\frac{5}{16}$ in.	S.80	
28M/7156	A.16Z.GP	Nut, m.s.			
28M/7156	A.16Z.JP	Screw, P.K.	No. 6 × $\frac{3}{8}$ in. long		
28D/8462	AS.1882/8C	Bolt, csk/hd., 90°	2 B.A.	S.1	
	D.00981	} Bolt, special	$\frac{1}{4}$ in.		
	D.00983			$\frac{3}{8}$ in.	
28D/8461	AS.1882/6C	Bolt, m.s., cks/hd., 90°	2 B.A.	S.1	
28Q/10563	AS.2229/407	} Rivet, alum. alloy, csk/hd., 90°	$\frac{1}{8}$ in.	} D.T.D.327	
28Q/7017	AS.2229/506				$\frac{5}{32}$ in.
28Q/11814	AS.2229/607	Sheet, alclad	$\frac{3}{16}$ in. 16 S.W.G.	D.T.D.610	
JOINT B					
28Q/1181	AS.2229/607	} Rivet, alum. alloy csk/hd., 90°	$\frac{3}{16}$ in.	} D.T.D.327	
28Q/6677	AS.2229/306				$\frac{3}{16}$ in.
28Q/1056	AS.2229/608				$\frac{3}{16}$ in.
28Q/7593	AS.2229/303				$\frac{3}{16}$ in.
28Q/7017	AS.2229/506				$\frac{5}{32}$ in.
28Q/10563	AS.2229/407				$\frac{1}{8}$ in.
28D/9626	AS.1882/6E	Bolt, m.s., csk/hd., 90°	$\frac{1}{4}$ in. B.S.F.	} S.1.	
28M/756	A.16.Y.EP	Nut, m.s.	$\frac{1}{4}$ in. B.S.F.		
28D/964C	R.00 and 175	Washer	10 S.W.G.	L.3	
	AS.1882/5E	Bolt, m.s., csk/hd., 90°	$\frac{1}{4}$ in. B.S.F.	S.1	
	A.G.S.160/D	Washer	$\frac{1}{4}$ in. B.S.F.	S.21	
28D/7126	A.15.E	Bolt, m.s.	$\frac{1}{4}$ in. B.S.F.	S.1	
28M/758	A.16.Y.GP	Nut, m.s.	$\frac{5}{16}$ in.	S.1	
28W/3073	A.G.S.160/E	Washer	$\frac{5}{16}$ in.	S.21	
28Q/10411	AD.2229/606	Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{8}$ in.	D.T.D.327	
28D/10082	AS.1882.4E	Bolt, m.s., csk/hd., 90°	$\frac{1}{4}$ in. B.S.F.	S.1	
28Q/7118	AS.2229/507	Rivet, alum. alloy, csk/hd., 90°	$\frac{5}{32}$ in.	D.T.D.327	
28W/8516	AS.470.C	Washer, packing	2 B.A.	L.1 or L.3	
28D/8459	AS.1882.4C	Bolt, m.s., csk/hd., 90°	2 B.A.	S.1	
28M/5316	A.16.Y.CP	Nut, m.s.	2 B.A.	S.1	
	Type Z	Screw, P.K.	No. 8 × $\frac{1}{2}$ in. long		
28M/7157	A.16.Z.GP	Nut	$\frac{5}{16}$ in.	} S.80	
28M/6975	A.16.Z.LS	Nut, thin	$\frac{7}{16}$ in.		
28W/6605	A.G.S.946.G	Washer	$\frac{7}{16}$ in.		
	E.P.	Nut, anchor aertight			
	E.A.				
28D/9498	AS.1882/7C	} Bolt, m.s., csk/hd., 90°	2 B.A.	S.1	
28D/8462	AS.1882/8C				
	D.00982	Bolt, special	$\frac{1}{8}$ in.		
	R.00.D.181-182	} Wing joint fitting		} L.40	
	R.00.D.183-184				
	R.00.D.145ND				
	D.00982	Plate, special anchor	$\frac{1}{16}$ in.	} S.1	
30B/349		Bolt, m.s. special	$\frac{5}{16}$ in.		
		Sheet, alclad	16 S.W.G.	D.T.D.390	

R E S T R I C T E D

GROUP F—MAIN PLANE

LIST OF CONTENTS

Title of repair leaflet	Repair drawing number	Marks of aircraft to which repair is applicable	Repair leaflet number	Date of issue
ATTACHMENTS				
Replacement of root end fittings	R.00.142 R.00.143-4	All marks	See D.3/4	
STRINGER				
Stiffening of stringer at Rib No. 2	R.00.D.5 R.00.D.1	Mk. 1	F.2/1	July, 1950
SKIN				
Treatment of elongated holes	R.00.D.8	All marks	F.3/1	July, 1950
AIR INTAKES				
Removal	R.15W.130 R.15W.131	All marks	F.4/1	Oct. 1959

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APPLICABLE TO MK. I AIRCRAFT ONLY

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet F.2/1

MAIN PLANE

Stiffening of stringers at Rib No. 2

This repair leaflet defines the method to be adopted in stiffening stringers at Rib No. 2.

1. The damaged skin must be cut away in the manner shown and the repair effected precisely as directed on the following repair drawings:—

R.00.D.5—Stiffening of stringers at Rib No. 2.

R.00.D.1, Sheet 1—Data sheet for riveted joints, Vampire wing.

Estimate of requisite labour

2. The repairs outlined will take approximately 50 man-hours.

Repair material

3. The following repair material will be required:—

Stores Ref.	Part No.	Description	Size	Specification
30B/950	R.00.D.81 ND R.00.D.82 ND	Sheet, alclad	} 18 s.w.g.	D.T.D.390
		Stiffener, alclad (L) (R)		
28Q/11162	AS.2229/505	Rivet, alum. alloy, csk/hd., 90°	$\frac{5}{32}$ in. dia. \times $\frac{5}{16}$ in.	
28Q/9519	TK.3.CS	Rivet, steel, Chobert, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{3}{16}$ in.	
28Q/-	K.3.PS	Sheer pin, steel		
28Q/9523	TL.3.CS	Rivet, steel, Chobert, csk/hd.	$\frac{5}{32}$ in. dia. \times $\frac{3}{16}$ in.	
28Q/-	L.3.PS	Shear pin, steel		
28Q/9524	TL.4.CS	Rivet, steel, Chobert, csk/hd.	$\frac{5}{32}$ in. dia. \times $\frac{1}{4}$ in.	
29Q/8051	L.4.PS	Shear pin, steel		
28Q/9525	TL.5.CS	Rivet, steel, Chobert, csk/hd.	$\frac{5}{32}$ in. dia. \times $\frac{5}{16}$ in.	
29Q/9650	L.5.PS	Shear pin, steel		

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet F.3/1

MAIN PLANE

Treatment of elongated holes (skin to spar)

This repair leaflet defines the method to be adopted in correcting elongation of holes in skin at main spar.

Preparation

1. Remove fuel tank and bag support channel and cold air pipe that passes through spar. Remove bolts and rivets as indicated on the repair drawing.

Repair drawing

2. The following repair will be required:—
R.00.D.8—Correction of elongated holes (skin to spar).

Repair instructions

3. Open out holes with No. 2 drill and countersink to suit new bolts. Fit new bolts, washers and nuts, and replace cold air pipe, bag support channel and fuel tank.

Estimate of requisite labour

4. The repairs outlined will take approximately 11 to 14 man-hours per wing, according to number of defective bolts to be replaced.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size
See Vol. 3 28M/	R.00.D.152-156	Bolt, special	$\frac{7}{32}$ in. B.S.F.
	R.00.D.157	Washer	
	A.16Y.DT	Nut	

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF AIRCRAFT

Issue No. 1
October, 1959

A.P.4099 & 4269, Vol. 2, Part 4, Repair Leaflet F.4/1
A.L.31, Nov. 59

MAIN PLANE

Removal of air intakes

This repair leaflet describes a method of removing the air intakes without first removing the wing. The procedure as follows assumes that it is required to replace the same intakes. Should a new intake be required, it will be necessary to make access holes and covers as applicable in the new part before fitment.

Repair drawings

1. The following repair drawings will be required:—
 - R.15W.130—Access panels in nose duct fairings, port and starboard.
 - R.15W.131—Access panel in wing top skin, between rib No. 1A and 1B.

Procedure

2. Port intake

- (1) Remove the wing root fillets around the leading edge.
- (2) Remove the countersunk bolts, attaching the nose fairing to the top and bottom of the drag member, rib No. 1A and nose rib No. 2. (The 4 B.A. bolts in the leading edge of rib No. 1A may be left *in situ*.)
- (3) Remove the access panel situated on the bottom surface aft of the drag member adjacent to rib No. 2.
- (4) Cut an access hole in the nose fairing to R.15W.130. Where the cold air pipe as shown for starboard is fitted to *port* wing, cut the *port* access hole and cut the cold air pipe.
- (5) Remove the cold air unit access panel in the top skin and the reinforcing stringer.

Note . . .

It may be found that the access panel does not exist on Mk. 5, 9 and 10 aircraft and it will therefore be necessary to cut an access hole in accordance with R.15W.131.

- (6) Remove the cold air unit where applicable.
- (7) Through the access hole (*sub-para.* (3)), disconnect the ducting and bonding where the cabin supercharger is fitted and remove the bolts securing the nose fairing flanges to the drag member.
- (8) Should the bolts outboard of rib No. 1B on Mark T.11 and T.22 aircraft be inaccessible through the access hole (*sub-para.* (3)) due to the air duct for the heat exchanger covering the hole, then the following procedure is to be adopted:—
 - (a) Remove No. 2 tank door.
 - (b) Lower tank on to a trestle, but do *not* disconnect the tank.
 - (c) Remove the Hycar packing covering the centre lightening hole in nose rib No. 2 and, through this hole, remove the bolts securing the heat exchanger duct.
 - (d) Remove the bolts outboard of rib No. 1B.
- (9) Remove the nose fairing and complete the access holes and covers in accordance with R.15W.130.

3. Starboard intake

- (1) Remove the wing root fillets around the leading edge.
- (2) Remove the detachable leading edge fairing (Mk. 9 aircraft only)

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- (3) Remove the countersunk bolts attachment the nose fairing to the top and bottom of the drag member, rib No. 1A and nose rib No. 2. (The 4 B.A. bolts in the leading edge of rib No. 1A may be left *in situ*.)
- (4) Remove the access panel situated on the bottom surface, aft of the drag member, adjacent to rib No. 2.
- (5) Remove the outboard detachable nose duct fairing (Mk. 9 aircraft only with cold air unit fitted).
- (6) Cut access holes in the nose fairing to drawing, R.15W.130.
- (7) Remove the cold air unit access panel in the top skin and the reinforcing stringer (Mk. 9 aircraft only) and remove the cold air unit.
- (8) Cut an access hole to the drawing, shown on R.15W.131 (Mk. 5, 10, T.11 and T.22 aircraft only with cabin supercharger fitted).
- (9) Remove the bolts securing the nose fairing flanges to the drag member.
- (10) Through the forward access hole cut in the nose fairing, cut the cold air pipe as shown on R.15W.130.
- (11) Through the access hole in sub-para. (iv) disconnect the ducting and bonding (Mk. 5, 10, T.11 and T.22 aircraft with cabin supercharger fitted).
- (12) Remove the nose fairing and complete the access holes and covers in accordance with R.15W.130.

Note . . .

When replacing the port and starboard nose fairings on any of the above Marks of aircraft, the 2 B.A. bolt with the rearward facing head, at the extreme inboard lower position, may be omitted if it is difficult to replace. In this instance the second and third bolts from the inboard lower 2 B.A. bolts, with the rearward facing heads, are to be replaced by $\frac{1}{4}$ in. B.S.F. bolts to A.25/3E and $\frac{1}{4}$ in. B.S.F. floating anchor nuts to A.G.S.2012/E.11.

Repair materials

4. The following repair materials will be required:—

Ref. No.	Part No.	Description	Size	Spec.	No. off
Requirements for air intake panel					
	R.15W.124ND	Landing ring	18 S.W.G.	L.72	1
	R.15W.125ND	Access panel	14 S.W.G.	L.72	1
28S/14006	A.33/B.14	Screw, 90 deg. csk/hd.	4 B.A.		8
28M/10228	A.G.S.2009/B1	Nut, double anchor	4 B.A.	Nyloc	8
28Q/10432	AS.2230/304	Rivet, 120 deg. csk/hd.	$\frac{3}{8}$	L.57	16
32C/376	DHS.159/J30	Hose, synthetic rubber*	3 in.	F7GRS	1
28E/15228	A.G.S.605/IX	Hose clip*			2
* Required for port forward access hole only.					
Requirements for top skin access panel					
	R.15W.132ND	Access panel	12 S.W.G.	L.72	1
	R.15W.133ND	Backing plate	16 S.W.G.	S.3	1
26DV/6328	R.15W.134ND	Reinforcing stringer	J.723	L.65	1
	R.15W.135ND	Backing plate	16 S.W.G.	S.3	1
28M/10288	A.G.S.2001/C1	Stiffnut	2 B.A.		6
28M/11957	A.G.S.2007/C1	Anchor nut	2 B.A.		46
28D/8307	AS.1242/2C	Bolt, 90 deg. csk/hd.	2 B.A.	S.96	52
28Q/6675	AS.2229/304	Rivet, 90 deg. csk/hd.	$\frac{3}{8}$	L.57	92
28Q/6640	AS.2229/404	Rivet, 90 deg. csk/hd.	$\frac{1}{8}$	L.57	2
28Q/10564	AS.2229/608	Rivet, 90 deg. csk/hd.	$\frac{3}{16}$	L.57	70
30B/1730		Packing strip	18 S.W.G.	L.72	As reqd.

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GROUP G—TAIL UNIT

LIST OF CONTENTS

Title of repair leaflet	Repair drawing number	Marks of aircraft to which repair is applicable	Repair leaflet number	Date of issue
ELEVATOR General repair	R.00.J.21 R.00.J.2	All marks	G.1/1	July 1950
RUDDER General repair	R.00.J.3 Sheet 1	Mk. 3	G.2/1	July 1950
TAIL PLANE General repair	R.00.J.1 Sheet 2	Mk. 1	G.3/1	July 1950
FIN Repair of upper fin	R.00.J.4	All marks	G.4/1	July 1950
STUB BOOM Removal of nose and rear portion	R.00.D.9	Mk. 1 and 3	G.5/1	July 1950

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet G.1/1

TAIL UNIT

Elevator

This repair leaflet defines the method to be adopted in repairing damage to the elevator. Although the treatment described is mainly replacement of damaged material the question of disturbance of mass balance should not be forgotten.

Preparation

1. Remove elevator from tail plane. Cut away damaged portion of skin and any internal damage which may be revealed upon inspection.

Repair drawings

2. The following repair drawings will be required:—
R.00.J.21—Joint Plate.
R.00.J.2—Repairs to Elevator.

Repair instructions

3. Damaged ribs or stiffeners should be replaced. Prepare landing strips to the width shown on the drawing and attach them to the existing skin with solid rivets. Insert new portions of skin and secure with Chobert rivets where solid rivets cannot be used.

Estimate of requisite labour

4. The repairs outlined will take approximately 25 man-hours.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
30B/953		Insertion patch	24 s.w.G.	} D.T.D.390
30B/950		Landing strip	18 s.w.G.	
30B/951	R.00.J.21	Joint plate	20 s.w.G.	
28Q/10407	AS.2228/404	Rivet, alum. alloy, mushroom head	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	
28Q/10402	AS.2230/404	Rivet, alum. alloy, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	
28Q/10855	AS.2230/310	Rivet, alum. alloy, csk/hd., 120°	$\frac{3}{32}$ in. dia. \times $\frac{5}{8}$ in. long	
28Q/10434	AS.2230/308	Rivet, alum. alloy, csk/hd., 120°	$\frac{3}{32}$ in. dia. \times $\frac{1}{2}$ in. long	
28Q/10433	AS.2230/307	Rivet, alum. alloy, csk/hd., 120°	$\frac{3}{32}$ in. dia. \times $\frac{7}{16}$ in. long	
28Q/9520	TK.4.CS	Rivet, steel, Chobert, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	

R E S T R I C T E D

APPLICABLE TO MK. 3 AIRCRAFT ONLY

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet G.2/1

TAIL UNIT

Rudder

This repair leaflet defines the method to be adopted in repairing damage to the rudder. Although it is unlikely that repairs will disturb the mass balancing of the component the possibility should not be forgotten.

Preparation

1. Remove rudder from the aircraft. Strip off damaged skin panel and search for internal damage.

Repair drawings

2. The following repair drawing will be required:—
R.00.J.3—Repairs to rudder.

Repair instructions

3. Complete direction is included on the drawing.

Estimate of requisite labour

4. The repairs outlined will take a minimum of 10 man-hours and will take longer with an increase in the extent of damage or number of necessary replacements.

Repair material

5. In addition to replacement parts the following rivets will be required.

Stores Ref.	Part No.	Description	Size	Specification
28Q/9598	TK/4/CNA	} Rivet, alum. alloy, Chobert, csk/hd.	$\frac{1}{4}$ in. dia.	D.T.D.327
28Q/6881	TL/4/CNA		$\frac{5}{32}$ in. dia.	D.T.D.327

R E S T R I C T E D

APPLICABLE TO MK. I AIRCRAFT ONLY

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet G.3/1

Issue No. 1
July, 1950

TAIL UNIT

Tailplane

This repair leaflet defines the method to be adopted in repairing damage to the tailplane.

Preparation

1. Damaged portions of skin should be cut away and adjacent internal members inspected for damage. Any internal damage should also be cut away.

Repair drawings

2. The following repair drawings will be required:—
R.00.J.1, Sheets 1 and 2—Repairs to Tailplane.

Repair instructions

3. Damage to ribs, stiffeners or spars are repaired as shown on repair drawing R.00.J.1, Sheet 2. Repair of buckles is effected with riveted reinforcing plates which when butt-jointed are secured with riveted butt straps.

Damage to the skin should be repaired as shown on Sheet 1 of repair drawing R.00.J.1. This illustration shows the insertion of landing strips and the riveting of skin patches. Where possible solid riveting should be practised but elsewhere Chobert rivets may be used.

Estimate of requisite labour

4. The repairs outlined will take approximately 20 man-hours for any skin repair, and 4 man-hours on average for internal repair.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
30B/952		Insertion patch	22 s.w.G.	D.T.D.390 or
30B/950		Landing strip	18 s.w.G.	
30B/952		Butt straps	22 s.w.G.	D.T.D.610
30B/951		Butt straps	20 s.w.G.	
28Q/10432	AS/2230/304	Rivet, alum. alloy, csk/hd., 120°	$\frac{3}{32}$ in. dia. \times $\frac{1}{4}$ in. long	D.T.D.327
28Q/10412	AS/2230/404		$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	
28Q/10407	AS/2228/404	Rivet, alum. alloy, mushroom head	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	
28Q/10653	AS/2228/505		$\frac{5}{32}$ in. dia. \times $\frac{5}{16}$ in. long	
28Q/9520	TK/4/CS	Rivet, steel, Chobert, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	

R E S T R I C T E D

APPLICABLE TO ALL MARKS OF THE AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet G.4/1

TAIL UNIT

Upper fin

This repair leaflet defines the method to be adopted in repairing damage to the upper fin.

Preparation

1. Cut away damaged skin. Examine for damage to interior members or for any damage remote from the area affected.

Repair drawing

2. The following repair drawing will be required to effect the repairs outlined:—
R.00.J.4—Repairs to Upper Portion of Fin.

Repair instructions

3. Cut away damaged skin. Inspect for any internal damage and repair any members affected. Buckles must be dressed out and patched as shown in the drawing. Damage in excess of buckling must be cut away and an insertion made of a new portion of skin, the attachment being effected with butt straps. Finally a new portion of skin should be attached over the damage using the landing strips illustrated in the drawing.

Estimate of requisite labour

4. The repairs outlined will take approximately 20 man-hours.

Repair materials

5. The following materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification
30B/950	R.00.J.29	Repair bracket	18 s.w.G.	D.T.D.390
30B/951		Landing strips	20 s.w.G.	
See Vol. 3		Butt straps		
30B/951		Repair brackets		
30B/952		Bracket.		
28Q/10412	AS.2230 404	Landing plate		22 s.w.G.
		Insertions	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	
28Q/10680	AS/2227 403	Rivet, alum. alloy, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{3}{16}$ in. long	
28Q/9520	TK 4/CS	Rivet, steel, Chobert, csk/hd., 120°	$\frac{1}{8}$ in. dia. \times $\frac{1}{4}$ in. long	

R E S T R I C T E D

APPLICABLE TO MK. 1 AND 3 AIRCRAFT

Issue No. 1
July, 1950

A.P.4099 & 4269, Vol. 2, Part 4
Repair Leaflet G.5/1

TAIL UNIT

Stub boom

This repair leaflet defines the method to be adopted in removing nose or rear portions of the tail boom.

Preparation

1. Trestle aircraft to stand without undercarriage support.
Remove tank door, fuel tank and undercarriage leg, inspect boom and select cut line.

Repair drawing

2. The following repair drawing will be required:—
R.00.D.9—Method of removing nose or rear portions of tail boom.

Repair instructions

3. The full instructions set out on the drawing must be carefully followed.

Estimate of requisite labour

4. The repairs outlined will take approximately 20 man-hours.

Repair materials

5. The following repair materials will be required:—

Stores Ref.	Part No.	Description	Size	Specification	
See Vol. 3 30B/946 28D/10753 28M/5853 28W/3071 28Q/9028 28Q/7242 28Q/7700 28D/8458 28M/8932 28Q/10905	D.00.1965-6	Stub boom top shell L.H. and R.H.		D.T.D.610	
	D001967-8	Stub boom bottom shell, R.H. and L.H.			
	R.00.D.196 ND	Anchor nut plate	20 s.w.g.		
			Alclad sheet	12 s.w.g.	D.T.D.303
		AS/1882/2C	Bolt, csk/hd.	$\frac{5}{16}$ in. B.S.F.	
		G.A.1	Aerotight nut	$\frac{5}{16}$ in. B.S.F.	
		A.G.S.160/C	Washer	$\frac{5}{16}$ in. i/d.	
		SP/16/C	Thick washer	$\frac{5}{16}$ in. i/d.	
		AS/162/606	Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{16}$ in., $\frac{3}{8}$ in. long	
		AS/162/506	Rivet, alum. alloy, csk/hd., 90°	$\frac{5}{32}$ in. dia., $\frac{3}{8}$ in. long	
		AS/162/406	Rivet, alum. alloy, csk/hd. 90°	$\frac{1}{8}$ in. dia., $\frac{3}{8}$ in. long	
		AS/1882/3C	Bolt, csk/hd.	2 B.A.	
		C/D1	Nut, aerotight double anchor	2 B.A.	
	AS/2229/307	Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{32}$ in. dia., $\frac{7}{16}$ in. long	D.T.D.327	

ATP/5591/300/3/50

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	D001967-8	Stub boom bottom shell, R.H. and L.H.		
	R.00.D.196 ND	Anchor nut plate	20 s.w.g.	
30B/946		Alclad sheet	12 s.w.g.	} D.T.D.303
28D/10753	AS/1882/2C	Bolt, csk/hd.	$\frac{5}{16}$ in. B.S.F.	
28M/5853	G.A.1	Aerotight nut	$\frac{5}{16}$ in. B.S.F.	
28W/3071	A.G.S.160/C	Washer	$\frac{5}{16}$ in. i/d.	
	SP/16/C	Thick washer	$\frac{5}{16}$ in. i/d.	
28Q/9028	AS/162/606	Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{16}$ in., $\frac{3}{8}$ in. long	
28Q/7242	AS/162/506	Rivet, alum. alloy, csk/hd., 90°	$\frac{5}{32}$ in. dia., $\frac{3}{8}$ in. long	
28Q/7700	AS/162/406	Rivet, alum. alloy, csk/hd. 90°	$\frac{1}{8}$ in. dia., $\frac{3}{8}$ in. long	
28D/8458	AS/1882/3C	Bolt, csk/hd.	2 B.A.	
28M/8932	C/D1	Nut, aerotight double anchor	2 B.A.	
28Q/10905	AS/2229/307	Rivet, alum. alloy, csk/hd., 90°	$\frac{3}{32}$ in. dia., $\frac{7}{16}$ in. long	D.T.D.327

ATP/5591/300/3/50

R E S T R I C T E D

CHAPTER 8

(Incorporated in Chapter 7)

CHAPTER 9

MISCELLANEOUS REPAIRS