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CHAPTER 2

FUSELAGE

CHAP.

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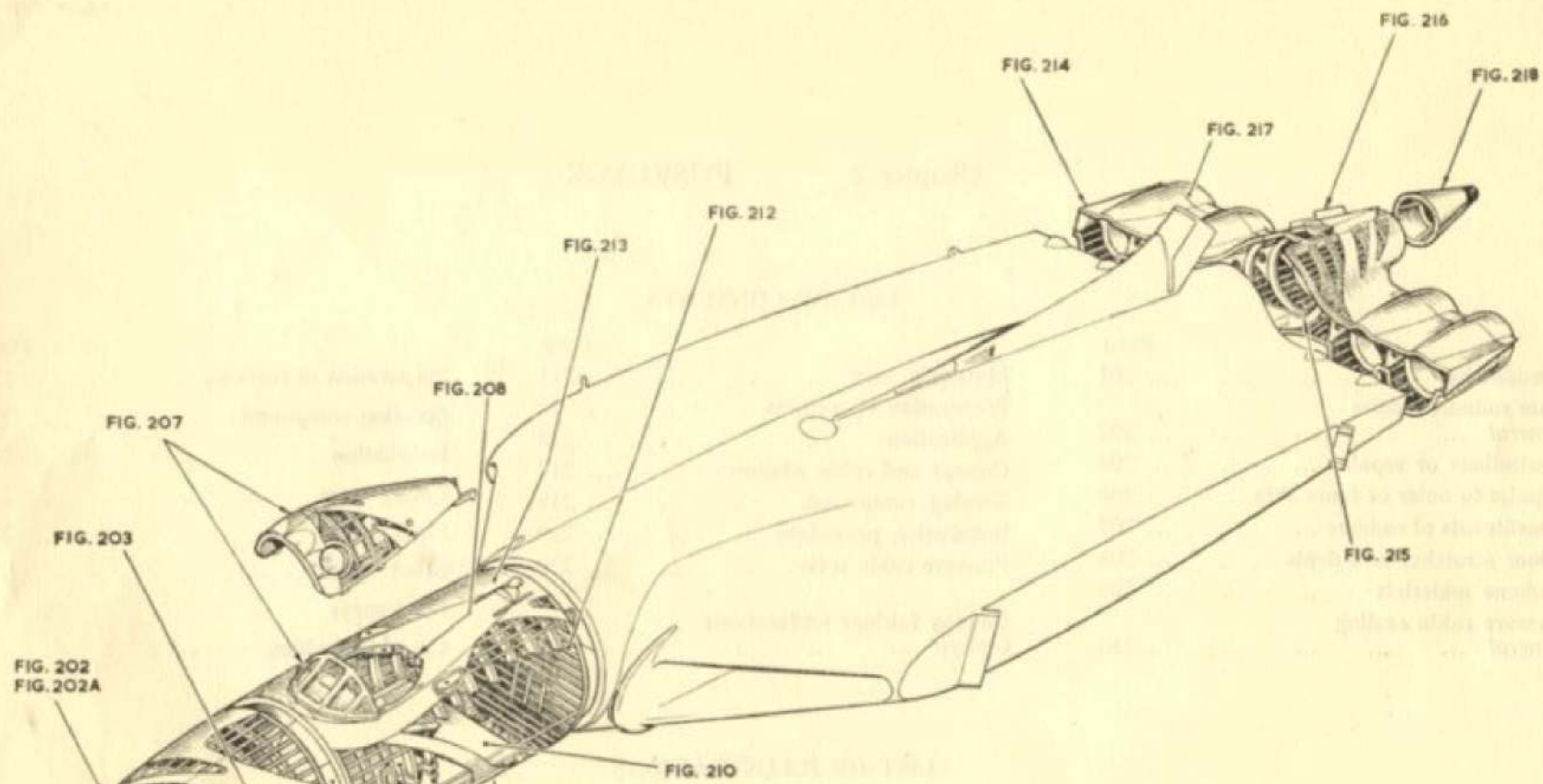
Chapter 2 FUSELAGE

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Fig. 201. Fuselage key diagram

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INTRODUCTION

201. The fuselage structure as covered in this chapter is divided into three main sections:— nose section, front fuselage and rear fuselage. A detachable radome of composite construction is fitted to the nose. It should be noted that formers are identified by their distance in inches fore or aft of the aircraft front spar datum. The main sections are illustrated in a sequence from front to rear, each section being broken down into its various sub-assemblies.

NOSE RADOME REPAIRS**General**

202. Information given in the following paragraphs is designed to cover minor repairs to Vulcan radomes in service. For standard repairs to radome structures, reference should be made to A.P.2662B, Schemes 7.1.5, 7.4.2, and 7.4.3. The procedure to be adopted in radome repairs is covered in considerable detail in A.P.2662B and where non-standard in this publication due to the radome being highly stressed structurally and critical electrically. It is emphasized that, in order to achieve acceptable standards, and satisfactory final results, considerable skill and care are necessary when effecting these repairs. In order that the importance of careful repair be fully understood, a brief outline of the design features of the radome is now given.

203. The radome is of 'half wave double sandwich' design. It consists of an outer glass fabric reinforced plastic skin, and behind this a layer of low density core material with a middle skin of reinforced plastic, then a second layer of core material and finally the inner skin. In effect there are two normal sandwiches of skin-core-skin placed back to back so that the middle skin is double the thickness of the outer skin. This build-up is necessary because the structure must fulfill severe requirements in respect of mechanical strength and stiffness as well as possessing the required dielectric characteristics. In this dielectric sense the sandwich can be regarded as a lens system, the physical dimensions of which (skin thickness, core spacing, etc.) are related to the frequency band of the incident rays. For the sandwich to have low reflection

properties over the wide range of the electrical incidence angles inherent in its shape, the thickness of the skins and the spacing of the skins, i.e., the core thickness, are critical dimensions. The importance of accurately maintaining the design thickness during repair cannot be over-emphasized. ◀No electrical tests are necessary on the radome after carrying out repairs as quoted in the following paragraphs unless the functioning of the radar in flight is unsatisfactory.▶

LIMITATIONS OF REPAIR

204. Repairs to the outer skin and the inner skin are permitted within the limits laid down in the next paragraph. Penetrating punctures, causing damage to the middle skin together with damage to both cores where the area of core involved is sufficient to show noticeable double curvature, must not be repaired without specialist advice.

205. The extent of repair is limited to an area of 50 sq. in. for any one patch. The maximum allowable length of the patch is 6 ins. longitudinally along the length of the radome, and in the vertical plane the distance repaired must not exceed 9 ins. *No repair involving replacement of fabric must be undertaken within three feet of any other repair.*

REPAIRS TO OUTER OR INNER SKIN

206. For repairs to outer or inner skins reference should be made to A.P.2662B and the Repair Schemes quoted in para. 202.

CONSTITUENTS OF RADOME

207. As the resin/glass fabric patch must have the same build-up as the original skin and a particular lay-up for a repair depends on its position on the radome, the constituents of the radome are now given. In that portion of the Neoprene coated area the lay-up is the same for both inner and outer skins, consisting of three layers of Y.227 satin weave fabric each with a nominal thickness of 0.012 in., and an outer layer of Y.93 plain weave 0.007 in. thick. The forward portion of the radome (the area coated with Neoprene, refer to fig. 204) has a thinner skin on the outside than on the inside, i.e., one layer of Y.227 and two of Y.93 making up the outer

skin, and three of Y.227 comprising the inner. This difference is to make allowance for the build-up of Neoprene applied to the outer skin as a protection against rain erosion. It should be noted that:—

Y.227 is a 0.012 in. nom. thickness satin weave fabric,

and

Y.93 is a 0.007 in. nom. thickness square weave fabric.

MINOR SCRATCHES AND DENTS

208. Surface scratches, where no appreciable tearing of glass fabric has taken place, and small dents no more than half-an-inch across, are to be repaired simply by filling in with a thixotropic resin mix (SR.18903) cured by the addition of catalyst and accelerator. (Refer to A.P.2662B, Scheme 7.1.5.) As the SR.18903 is a stiff gel, proper care must be taken to ensure that the catalyst and accelerator are thoroughly dissolved before use. Before applying the filling, the surfaces of the damaged laminate must be roughened with sandpaper to provide a mechanical key for adhesion. For areas of this order (about one quarter inch) the electrical discontinuity is negligible compared to the total area considered by the scanner, and electrical performance is not noticeably affected.

RADOME MATERIALS

209. Materials used in the construction of the radome are as follows:—

Glass fabric Y.227, T5 Finish, D.T.D. 5518, Type S.2.

Glass fabric Y.93, T5 Finish, D.T.D. 5518, Type P.6.

Radome core material, Expanded Hycar, D.T.D. 764 (0.22 in. thick).

References for resins and accelerators, etc., are contained in A.P.2662B, Scheme 7.1.5. For instructions regarding application of Neoprene top coat cement, refer to paras. 125 to 130 in Chap. 1 and to A.P.2662B, Scheme 9.4.1.

PRESSURE CABIN SEALING**General**

210. Special schemes are provided for repair to pressurised parts of the structure. In

addition to the riveting technique required for external finishing, it is necessary when any repairs or replacements are done, that the instructions given in the following paragraphs are adhered to. Considerable information on sealing compounds and their use is also given in A.P.1464B, Vol. 1, Part 2, Sect. 4, Chaps. 6 and 7. It is emphasized that thorough cleanliness is necessary and that surfaces must be free of grease, moisture, metal burrs, and any other contaminant which could prevent good adhesion of the sealant to the metal or prevent complete contact of the surfaces when assembled.

MATERIALS USED

211. The materials used for sealing pressure cabin joints, etc., are Bostik Primer 1752 and Bostik 1790 Sealing Compound. Bostik 1752 is of a low viscosity and coloured blue for identification; it is used chiefly as a foundation coating. Bostik 1790 is of a higher viscosity, and having lower adhesion properties than Bostik 1752 is usually applied over it in the nature of a fillet.

Bostik Primer 1752 (Ref. 33C/1339).

Bostik 1790 (Ref. 33C/1138).

PREPARATION OF SURFACES

212. If the surfaces are bare metal they should be degreased with trichlorethylene, but if they are coated with primer, trichlorethylene must on no account be used but the surfaces left untouched. If the primer is too thick it should be rubbed down, because if Bostik is applied to a thick layer of primer, the latter will break or shear when load is applied to the Bostik. Pressure cabin components which are treated with primer before assembly should therefore receive one coat only, which should be kept as thin as possible.

APPLICATION

213. As an interfacial jointing compound on mating surfaces, apply by painting one coat of a mixture of equal parts of Bostik 1752 and 1790 to extend $\frac{1}{8}$ in. beyond the edges of the contacting area. The assembly may be service bolted before finally tightening up if required, but for a riveted joint all riveting should be completed within 36 hours of mating.

214. For the sealing of angular joints or crevices between butt strap and skin, or

stringer and skin, etc., on the pressure side of the structure apply a brush coat of 1752 over a width extending at least $\frac{1}{8}$ in. each side of the joint and leave to dry for two hours. Then brush paint along the joint a mixture of 1752 and 1790, allow 4 to 6 hours drying time and apply a further coat of the same mixture.

215. All rivets and bolt heads should be brush coated with the mixture of 1752 and 1790 to form a continuous smooth band over the entire joint. In addition, it is essential that all bolts at pressure joints be dipped in Bostik 1752 immediately before use.

216. Regarding the mixture of 1752 and 1790 this will vary according to the prevailing weather conditions. The ideal mixture is that which is of a sufficiently low viscosity as to be brushable, yet not low enough to get blown through any joints. The above Bostik compounds must not be used for glass or perspex window sealing. In cases where sealing is required near to, or in contact with glass or perspex, Bostik Sealing Compound 1222 is to be used.

CANOPY AND CABIN WINDOWS

217. Should it be necessary to change a window in the pressurised part of the canopy or the crews cabin, it is important that all the old glazing compound and Bostik sealing is removed after the defective panel has been taken out of the frame. It cannot be too strongly emphasized that great care must be exercised when removing the glazing compound, etc., to avoid damage to the frame structure.

GLAZING COMPOUND

218. The compound to be used for glazing when fitting a new panel is made up of 100 parts by weight of Araldite 121 N (Ref. 33C/1451) and 5 parts by weight of Hardener 951 (Ref. 33C/1372). These constituents should be mixed thoroughly and used as soon as possible, as the pot life of the mix does not exceed $1\frac{1}{2}$ hours.

INSTALLATION PROCEDURE

219. The procedure for application of the glazing compound and fitment of a window panel is as follows:—

- (1) Thoroughly clean and degrease the mounting frame surface.
- (2) Protect anchor nuts if any are fitted in the frames with small pieces of transparent adhesive tape to prevent the compound entering the threads.
- (3) Cover with a thin film of thin grease the vinyl edge and faces, also the edge of the outer glass facing.
- (4) Offer the window into the frame and note where the discrepancies are, if any, regarding alignment of the two faces, so that allowance can be made when applying the compound.
- (5) Apply the Araldite compound to the mounting frame, so that a layer is formed all the way round, thicker than that eventually required.
- (6) Run a fillet of Araldite compound into the areas between the toughened glass and the vinyl, making sure that the fillet does not extend so far on the vinyl edge to interfere with the fitment of the panel retaining ring.
- (7) Press the panel gently yet firmly into the frame until the Araldite is exuded all round the edges, both internally and externally. Bolt in panel using retaining ring, tightening bolts to finger tightness only. Excessive tightening must be avoided. Service bolts can be used at this stage if desired.
- (8) Remove all exuded compound away from the edges, and off the retaining ring until they are quite clean.
- (9) Allow compound to harden by leaving it for at least 6 hours.
- (10) Remove window carefully and ensure that the Araldite has a smooth surface. If there are any indentations in the surface, fill them flush with compound and allow the filling to harden.
- (11) Clean off the panel any grease adhering to it and fit into the frame, taking care to tighten up all bolts to finger tightness first, finally tightening up with box-spanner. *Excessive tightening must be avoided*, the nuts needing little more than nipping up. Correct bolts to be fitted.
- (12) For a final seal Bostik No. 1222 must be used. No other sealing compound must come in contact with the panel.

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Where necessary, Bostik 1222 is to be used for filling round the outside glass ply to give aero-dynamic smoothness. On no account must solvent or thinners be used for cleaning near the panel edge.

PRESSURE CABIN TESTS

220. Instructions for the carrying out of the necessary pressure tests after completion of any repairs to the pressurised parts of the structure are given in A.P.4505A, Vol. 1, Book 1, Sect. 3, Chap. 8.

CANOPY FAIRINGS REPLACEMENT

General

221. The fairings are attached at the forward end of the canopy and should it become necessary to replace one or more of the panels the following procedure must be strictly adhered to.

PREPARATION OF SURFACES

222. In all metal bonding, surface cleanliness is very important. The bottom and forward members of the canopy are magnesium alloy castings, and the chromate protective treatment on them should be protected against the various solvents used for cleaning the bonding surface.

- (1) Remove paint, etc., in the area to be bonded by applying paint remover (Ref. 33B/1125) taking care that the treated area is slightly larger than that required for fitment of the fairing. After removal of the paint great care must be taken to wash off with water all traces of the spent stripper. Thoroughly dry the surface with a clean rag.
- (2) The clean alloy skin surface is now etched for bonding by treating with Deoxidine (Ref. 33C/7481) applied with a brush. The surface must be kept wet for a period of 5-10 mins. after which all traces of Deoxidine must be removed by washing with cotton-wool swabs soaked in water. Thoroughly dry the surface which should now show a "whitish" appearance after the above treatment. If the skin under the fairings has been

etched previously there is no need to carry out sub-para (2). The following treatment is all that is required. A cleansing and light etching operation with Deoxidine 202 should be carried out, and the surface afterwards washed down with water to remove any traces of the etching liquid. Dry the surface with a clean rag.

- (3) Offer the replacement fairing to the canopy which should be in position on the aircraft, and check for alignment of the faces, noting if there are any slight discrepancies so that allowance can be made when applying the Araldite compound (Ref. 33C/1451).
- (4) Before fitment the bonding face of the fairing should be roughened by means of coarse sandpaper or a hacksaw blade.
- (5) When carrying out operations, sub-para. 1-2, it would be advisable to remove the canopy from the aircraft, protect the hinge arms, etc., before standing it upright in order that the solvents used, will tend to run away from the magnesium alloy members, and not affect the chromate treatment. If inadvertently some of the solvent runs on to the members and destroys the chromate treatment, the following action must be taken. Wash off with water the solvent involved and dry immediately. With a small brush apply Solenious Acid Solution over the damaged treatment area, making sure that no acid goes on the canopy skins. No further treatment is required and the fairing can be bonded on top of the chromate treatment.

BONDING COMPOUND

223. The compound to be used for attaching the fairing to the canopy is made up of 100 parts by weight of Araldite 121N (Ref. 33C/1451) and 4 to 5 parts by weight of standard cold setting Hardener 951 (Ref. 33C/1372). These constituents should be mixed thoroughly, adding the hardener to the resin, and taking care that the resin around the sides of the container is scraped off to dislodge the adherent resin. In order to extend

the pot life of the resin, when mixed, it should be transferred from the mixing container and spread out on to a clean sheet of thick gauge aluminium in a layer of about $\frac{1}{4}$ in. thick or less. The pot life of the resin is about $1\frac{1}{2}$ hours depending on the prevailing temperatures. When the resin has thickened up to a point where it can no longer be easily applied and spread, the pot life is considered to have expired.

INSTALLATION

224. Using a spatula or a blunt knife blade a film of the resin compound should be well worked into the bonding surfaces of the canopy and fairing. After the initial film has been smeared on, a body of the compound sufficient to fill up any discrepancies between the mating faces, and a fair surplus quantity should be applied so that in squeezing out the excess adhesive, any trapped air is swept out at the same time. Surplus resin should be wiped away to leave a neat fillet around the joint.

225. The adhesive itself, or the quality of the bond, does not benefit from the application of pressure during setting but some light pressure will almost certainly be required to ensure that the fairing is held down and in proper contact all round the rim. Adhesive tape and plasticine may be useful in maintaining the mating position of the parts while curing is in process. At this stage the rivets and Parker-Kalon screws which are fitted at the forward end of the fairings only, should now be assembled. Using the existing holes in the canopy skin and forward mag. alloy member as location points, drill through the fairing so that all the holes are in perfect alignment. All rivets and Parker-Kalon screws should be dipped in Celloseal before assembly. As the rivets are not the normal type a description is appended below.

Rivets (422) (508) Advel self-sealing, c/sk. 120°. Hole dia., Morse No. 20, 0.161 in. Parker-Kalon type "Z", S.970, No. 2 x $\frac{3}{16}$ in. long. (Self-tapping screw c/sk.) Hole dia., Morse No. 47, 0.0785 in. x $\frac{3}{16}$ in. deep. C/sk. hole 82° x 0.048 in. deep.

Alternative Parker-Kalon screws which may be used:—

Parker-Kalon, type "Z", S.970 No. 4 $\times \frac{3}{16}$ in. long. (Self-tapping screw c/sk.)

Hole dia., Morse No. 37, 0.104 in. $\times \frac{3}{16}$ in. deep. C/sk. hole $82^{\circ} \times 0.064$ in. deep.

Note . . .

Great care should be taken, if, for any reason the holes for the Parker-Kalon screws have to be re-drilled, that the depth stated is not exceeded.

Special tools required are:—

- | | |
|------------------------|----------------------------------|
| | <i>Manufacturer</i> |
| (1) Advel Riveting Gun | Aviation
Developments
Ltd. |
| (2) Backmarker | |

CURING TIME

226. Despite the term "cold setting", curing is still dependent on the actual temperature prevailing. If the temperature is below 60°F, localized heating should be used to bring the temperature up to at least 60°F as this figure should be regarded as the absolute minimum for serious bonding work.

227. With an ambient temperature of 65°F the curing to the initial hard state takes about 12 hours, and at least 48 hours to reach full strength curing. If the temperature should vary during the curing time, a check regarding the state of the resin can be obtained by retaining a sample of the squeezed out resin and keeping it under the same conditions. In normal temperature 60°F the resin compound should certainly be quite hard, after 24 hours have elapsed, and a mix that has not hardened after this time must be suspect.

FINAL FINISH

228. Any irregularities in contours, and surface blemishes both around the joints, and in the actual fairings can be filled and smoothed over with an additional quantity of the Araldite 121 N adhesive.

BLEED HOLES

229. A small $\frac{1}{16}$ in. leak hole is provided in each fairing to bleed off any leaks that may

occur in the canopy skinning under the fairing. Care must be exercised that this hole is not blocked up during the bonding operation.

FINAL SPRAY

230. No spraying should be undertaken until the resin compound has reached full strength curing. This may take several days depending on the prevailing temperature. Cellulose and synthetic thinners will dissolve the resin prior to full strength curing so the wisdom of not spraying until the cure is complete can be appreciated.

CARE IN HANDLING

231. Frequent handling of cold setting Hardener 951 can cause dermatitis. Avoid unnecessary contact and keep all containers, weighing equipment, spatulas, etc., in a clean and non-sticky state. Clean all equipment immediately after use with the aid of cellulose of synthetic thinners, then washing down with water, and finally wiping dry.

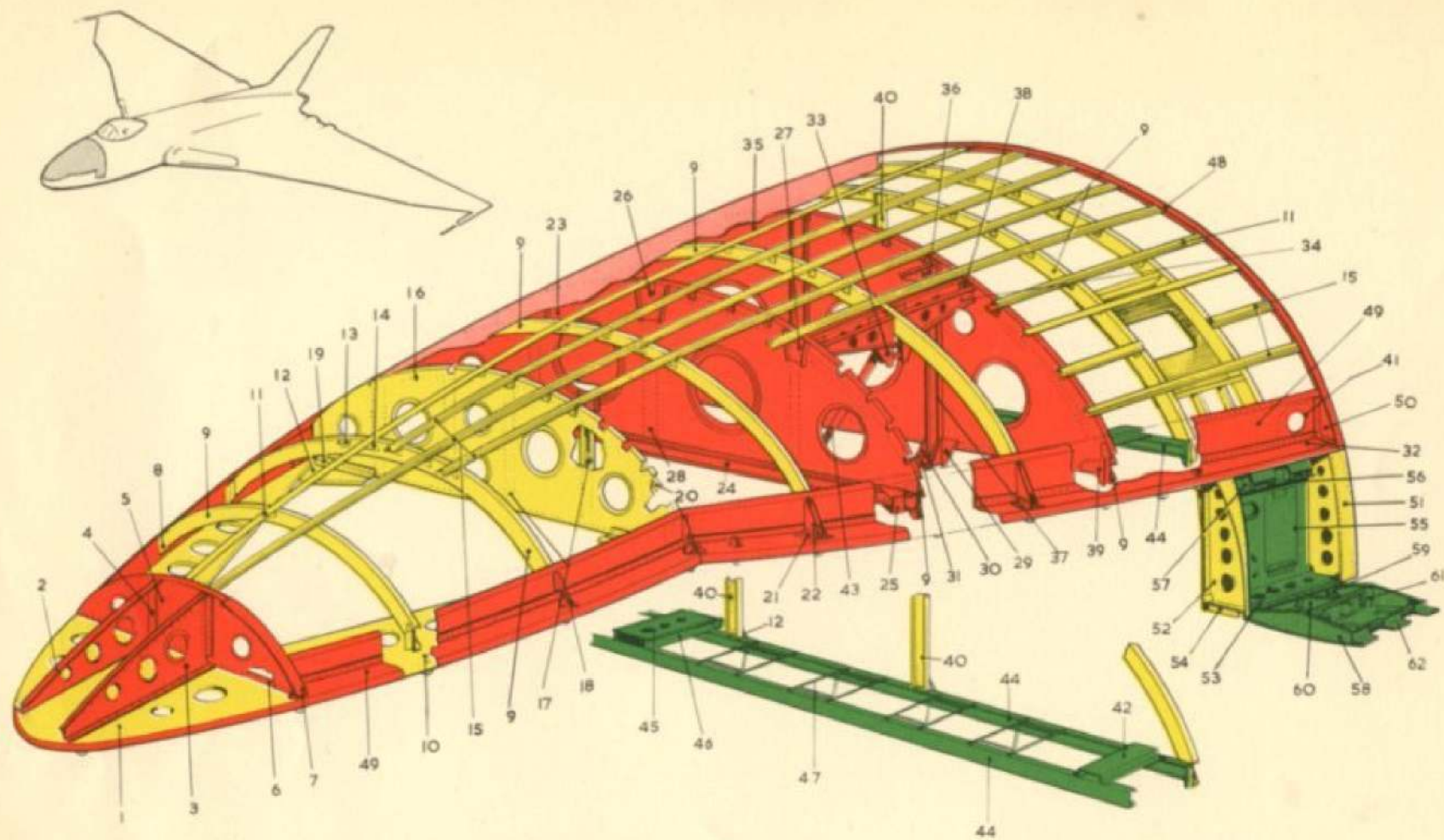


FIG. 202. METAL NOSE. (PRE MOD 38)

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KEY TO FIG. 202

Item	Material		Description	Negligible Damage					Rep. Fig.
	Spec.	S.W.G. or Section		Dents	Holes				
				Depth	Distance Apart	Diam.	Pitch Ratio		
1	L72	18	Nose diaphragm	0-050	6	0-5	4 : 1	—	
2	L72	20	Angle	—	—	—	—	—	
3	L72	22	Diaphragm	0-020	6	0-5	8 : 1	—	
4	L72	12b SS.1793	Angle	—	—	—	—	—	
5	L72	22	Diaphragm Former 510 F	0-020	6	0-5	8 : 1	—	
6	L72	836 SS.1793	Angle	—	—	—	—	—	
7	L72	18	Butt Strap	—	—	—	—	—	
8	L72	18	Attachment angle	—	—	—	—	—	
9	L72	748 SS.1793	Former channel	0-050	6	0-25	6 : 1	107, 108	
10	L72	18	Horizontal plate	0-10	6	0-5	8 : 1	108	
11	L65	419 SS.3075	Stringer " T "	0-050	6	—	—	109	
12	L72	16	Gusset plate	0-1	6	0-5	8 : 1	—	
13	L72	18	Stringer bracket	—	—	—	—	—	
14	L72	16	Stringer bracket	—	—	—	—	—	
15	L72	367 SS.1793	Stringer top hat	0-050	6	—	—	—	
16	L72	22	Diaphragm Former 470 F	0-1	6	0-5	8 : 1	103, 106	
17	L72	507 SS.1793	Stiffener	0-050	6	—	—	—	
18	L72	16	Toggle bracket	—	—	—	—	—	
19	L72	133 SS.1793	Angle	—	—	—	—	—	
20	L72	60 SS.1793	Stiffening angle	0-050	6	—	—	—	
21	L72	183 SS.1793	Attachment angle	—	—	—	—	—	
22	L72	18	Longeron diaphragm	—	—	—	—	—	
23	L72	22	Web former 442 F	—	—	0-25	8 : 1	103, 106	
24	L72	163 SS.1793	Channel cross member	—	—	—	—	107, 108	
25	L72	18	Channel bracket	—	—	—	—	—	
26	L72	20	Gusset plate	—	—	—	—	—	
27	L72	20	Gusset plate	—	—	—	—	—	
28	L72	100 SS.1793	Channel stiffener	—	—	0-25	6 : 1	107, 108	
29	L72	14	Corner bracket	—	—	—	—	—	
30	L72	14	Gusset plate	—	—	—	—	—	
31	L72	238 SS.1793	Channel beam	—	—	0-25	6 : 1	107-108	
32	L72	18	Horizontal plate	0-1	6	0-5	8 : 1	220, 220A, 220B, 220C	
33	L72	14	Channel	0-050	6	—	—	—	
34	L72	20	Intercostal	—	—	0-25	8 : 1	105-107	
35	L72	22	Web former 414 F	—	—	0-25	8 : 1	—	
36	L72	18	Attachment plate	—	—	—	—	—	
37	L72	100 SS.1793	Channel stiffener	—	—	0-25	6 : 1	107-108	

All measurements are given in inches.

* No repairs permitted.

† More expedient to renew than repair.

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(A.L.3, Aug. 57)

KEY TO FIG. 202 (Continued)

Item	Material		Description		Negligible Damage				Rep. Fig.
	Spec.	S.W.G. or Section			Dents	Holes		Pitch Ratio	
					Depth	Distance Apart	Diam.		
38	L72	16	Channel	†	—	—	—	—	—
39	L72	18	Attachment angle	†	—	—	—	—	—
40	L72	613/SS.1793	Vertical member	*	0.050	6	0.25	6 : 1	107-108
41	L72	18	Doubling plate	*	—	—	—	—	—
42	L72	16	Support channel	*	0.1	4	1.0	4 : 1	108
43	L63	1" dia. × 22G	Strut	*	—	—	—	—	—
44	L72	613/SS.1793	Channel Cross member	*	0.050	4	0.25	4 : 1	107-108
45	L72	22	Mounting Tray	†	0.1	4	1.0	4 : 1	—
46	L72	348/SS.1793	Support channel	†	0.050	4	0.25	6 : 1	—
47	T.54	1/8 dia. × 20G	Stowage frame	†	0.030	4	—	—	—
48	L72	840/SS.1793	Transport joint angle	†	—	—	—	—	—
49	L72	18	Vertical member	*	—	—	0.5	8 : 1	—
50	D.T.D. 683	—	Longeron attachment bracket	*	—	—	—	—	—
51	L72	18	Skin panel	†	0.050	6	—	—	—
52	L72	18	Side stiffening member	†	0.050	6	0.5	4 : 1	105-108
53	L72	18	Bottom member	†	0.050	6	0.5	8 : 1	105-108
54	L72	18	Mounting channel	†	—	—	—	—	—
55	L72	20	Inboard web	†	0.1	4	—	—	—
56	L72	314/SS.1793	Stiffening angle	†	—	—	—	—	—
57	L72	18	Stud bracket	†	—	—	—	—	—
58	L72	20	Side member	†	0.1	4	0.5	6 : 1	108
59	L72	18	Bottom angle	†	0.050	4	0.5	6 : 1	108
60	L72	20	Stiffening member	†	0.050	4	0.5	6 : 1	108
61	L72	20	Cross member	†	0.050	4	0.5	6 : 1	108
62	L72	18	Top angle	†	—	—	—	—	—

All measurements are given in inches.

* No repairs permitted.

† More expedient to renew than repair.

RESTRICTED

KEY TO FIG. 202A

Item	Material Specification	S.W.G. or Section	Description		Negligible Damage				Repair Figure
					Dents		Holes		
					Depth	Distance Apart	Diameter	Pitch Ratio	
1	L72	20	Angle	†	—	—	—	—	—
2	L72	20	Channel	†	—	—	—	—	—
3	L72	20	Angle	†	—	—	—	—	—
4	L72	20	Angle	†	—	—	—	—	—
5	L72	20	Channel	†	—	—	—	—	—
6	L72	20	Angle	†	—	—	—	—	—
7	L72	20	Main channel		0.05	4	—	—	105, 108
8	L72	20	Centre bracket	†	—	—	—	—	—
9	L72	20	End bracket	†	—	—	—	—	—
10	L72	20	Angle	†	—	—	—	—	—
11	L72	20	Angle	†	—	—	—	—	—
12	L72	20	Top plate		0.10	4	0.5	4 : 1	—
13	L72	16	Back plate	†	—	—	—	—	—
14	L72	18	Side member	*	—	—	—	—	—
15	L72	20	Reinforcing plate	†	—	—	—	—	—
16	L72	18	Spinning	†	—	—	—	—	—
17	L72	18	Packing	†	—	—	—	—	—
18	L72	16	Packing	†	—	—	—	—	—
19	L72	18	Side member	*	—	—	—	—	—
20	L72	18	Web former 470 F		0.10	6	—	—	103
21	L72	16	Angle	†	—	—	—	—	—
22	L72	20	Angle	†	—	—	—	—	—
23	L72	455/SS.1793	Stiffener		0.05	6	—	—	—
24	L72	507/SS.1793	Stiffener		0.05	6	—	—	—
25	L72	455/SS.1793	Stiffener		0.05	6	—	—	—
26	L72	18	Web former 510 F	*	—	—	—	—	—
27	L72	511/SS.1793	Stiffener	*	—	—	—	—	—
28	L72	511/SS.1793	Stiffener	*	—	—	—	—	—
29	L72 or L65	—	Base Ring	†	—	—	—	—	—
30	L72	10	Plate	†	—	—	—	—	—
31	L65	—	Centre segments	†	—	—	—	—	—
32	L65	—	Bottom segments	†	—	—	—	—	—
33	L72	16	Bottom angle	*	—	—	—	—	—
34	L72	22	Web former 442 F		0.10	6	0.5	8 : 1	103, 106
35	L72	18	Gusset plate	†	—	—	—	—	—
36	L72	22	Web former 414 F		—	—	0.25	8 : 1	103, 106
37	L72	613/SS.1793	Vertical member		0.05	4	0.50	6 : 1	107-108
38	L72	613/SS.1793	Cross member		0.10	4	1.00	4 : 1	107-108
39	L72	18	Butt Strap	*	—	—	—	—	—

All dimensions are quoted in inches.

† More expedient to renew than repair.

* No repair permitted.

RESTRICTED

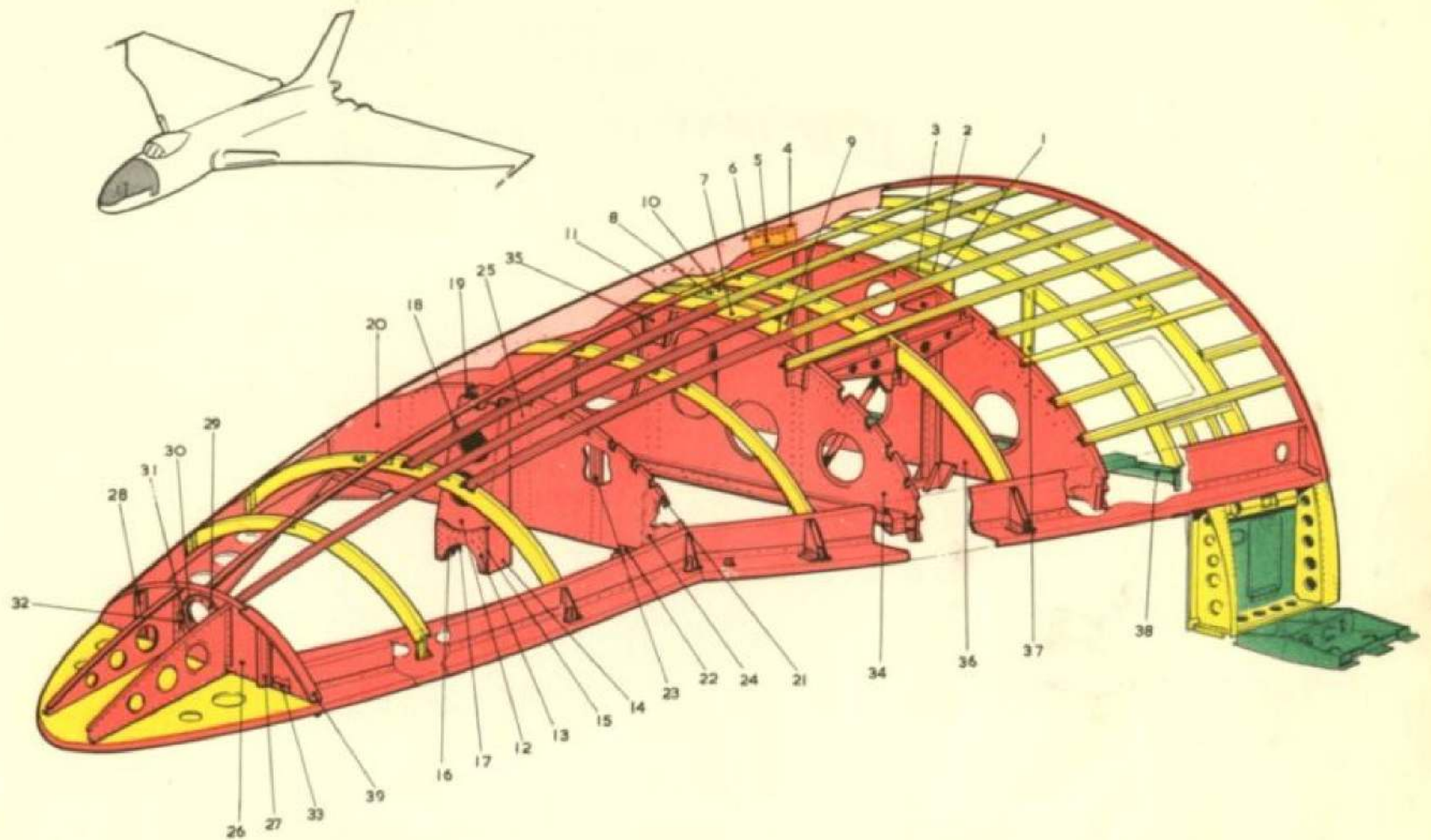


FIG. 202.A. METAL NOSE (POST MOD. 38)

RESTRICTED

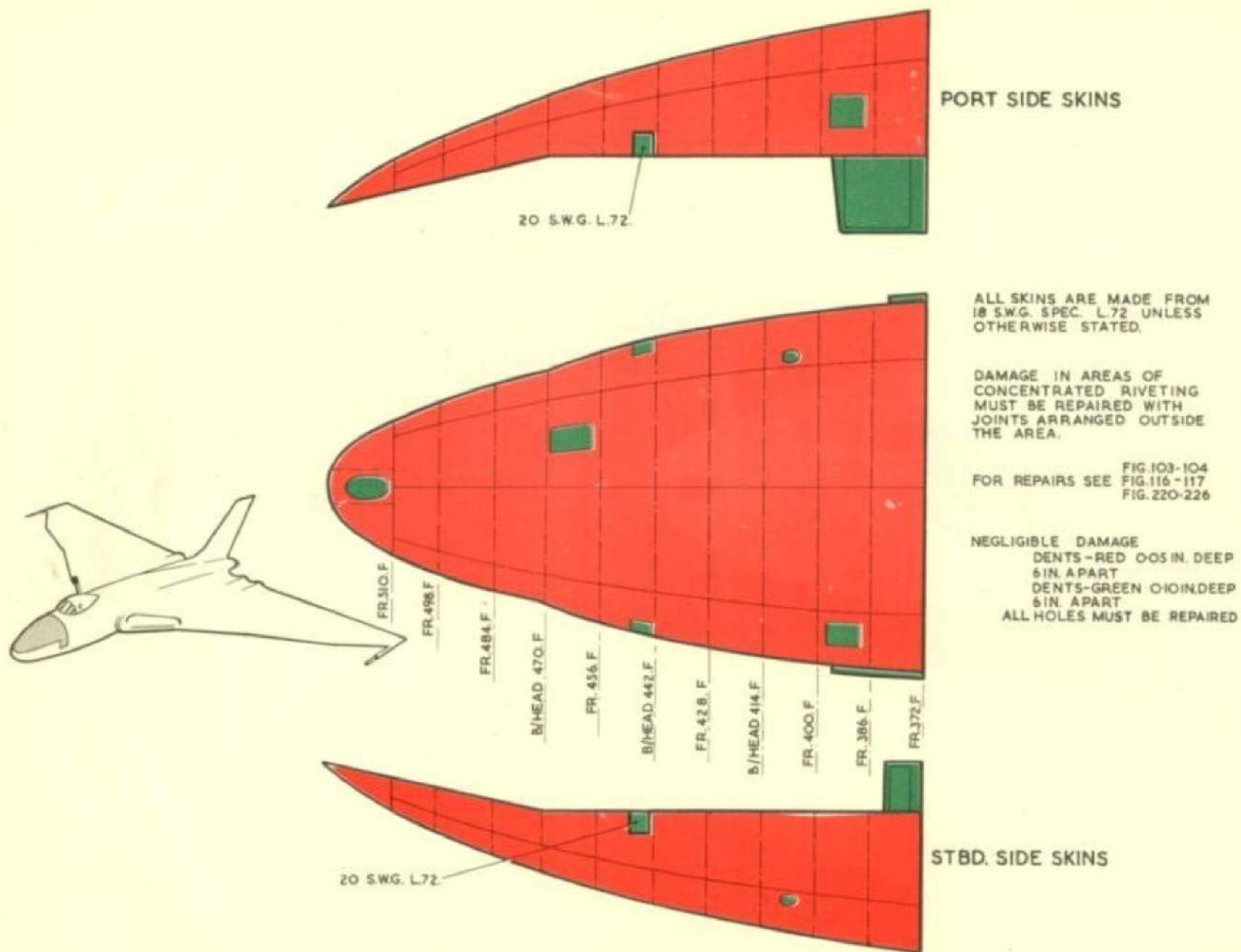


FIG. 203. METAL NOSE SKINS

KEY TO FIG. 204

Item	Material Specification	S.W.G. or Section	Description	Negligible Damage				Repair Figure
				Dents Depth	Holes Distance Apart	Holes Diameter	Holes Pitch Ratio	
1	—	—	Radome Moulding	—	—	—	—	219-219A
2	L72	16	Radome Former	0-10	2-5	0-25	4 : 1	106-107-108
3	L72	16	Joint plate	0-10	2-5	0-25	4 : 1	108
4	—	—	Drain plug assembly	*	—	—	—	—
5	L72	14	Radome longeron	0-05	3-0	—	—	—
6	L72	16	Packing plate	†	0-05	3-0	—	—
7	L72	14	Joint plate	†	0-05	3-0	—	—
8	L59	18	Louvre	†	0-10	2-5	—	—
9	L59	20	Angle	†	0-10	2-5	—	—
10	S.80	—	Button	*	—	—	—	—
11	S.110	—	Dowel	*	—	—	—	—
12	D.T.D. 130.A	—	Lever	*	0-05	2-5	—	—
13	—	—	Pip-pin	*	—	—	—	—
14	L72	18	Attachment bracket	†	0-10	3-0	—	—
15	S.96	—	Hook	*	—	—	—	—
16	L65	—	Toggle mounting	†	—	—	—	—
17	L72	18	Attachment bracket	†	0-10	3-0	0-25	6 : 1
18	L65	—	Housing	*	—	—	—	—
19	L72	18	Attachment angle	†	0-10	2-5	—	—
20	L65	—	Hook	*	—	—	—	—
21	L65	—	Bearing	†	0-50	3-0	—	—
22	B.S.S. 249	—	Housing	*	0-50	2-5	—	—
23	S.80	—	Pin	*	—	—	—	—
24	L72	16	Radome Former Mod. 38	0-10	2-5	0-25	4 : 1	106-107-108

All dimensions are quoted in inches.

† More expedient to replace than repair.

* No repairs permitted.

KEY TO FIG. 205

Item	Material		Description		Negligible Damage				Repair Figure
	Specification	S.W.G. or Section			Dents	Holes			
					Depth	Distance Apart	Diameter	Pitch Ratio	
1	L72	6	Support-Ring Sector	†	—	—	—	—	—
2	L72	12	Attachment Ring Sector	†	—	—	—	—	—
3	L72	20	Dome Sector		—	—	—	—	223.A
4	L72	20	Jointing Strap		—	—	—	—	223.B
5	L72	20	Sealing plate	†	—	—	—	—	—
6	L73	6	Aft angle		—	—	—	—	—
7	D.T.D. 410	—	Pressure dome Reinforcing	†	—	—	—	—	—
8	L72	20	Patch plate		—	—	—	—	—
9	L72	16	Packing		0.050	3.0	—	—	—
10	L72	20	Strap plate		—	—	—	—	—
11	L72	16	Top horizontal angle		0.10	3.0	—	—	—
12	L72	16	Top plate		0.10	3.0	0.25	4 : 1	—
13	L72	16	Vertical panel		0.10	3.0	0.25	4 : 1	—
14	D.T.D. 130.A	139/SS.3075	Upper " T " section		0.10	3.0	—	—	—
15	L72	18	Inner skin angle		—	—	—	—	—
16	L72	16	Diaphragm		0.05	3.0	0.4	4 : 1	115
17	L73	14	Bracket		0.05	3.0	0.4	4 : 1	—
18	S.510	16	Bracket	*	—	—	—	—	—
19	D.T.D. 304.B	361/SS.3075	Forward angle		—	—	—	—	—
20	L72	10	Reinforcing plate outer	*	—	—	—	—	—
21	D.T.D. 687.A	20	Diaphragm		0.10	3.0	0.25	4 : 1	—
22	D.T.D. 304.B	361/SS.3075	Forward angle centre		—	—	—	—	—
23	L65	—	Strap bracket	*	—	—	—	—	—
24	L72	18	Attachment bracket	*	—	—	—	—	—
25	L72	10	Mounting ring	*	—	—	—	—	—
26	L72	10	Support ring	*	—	—	—	—	—
27	L72	20	Dish		—	—	—	—	—
28	D.T.D. 88.C	—	Access door reinforcing ring	*	—	—	—	—	—
29	L65	—	Clamp bracket	*	—	—	—	—	—

All dimensions are quoted in inches.
 † More expedient to renew than repair.
 * No repair permitted.

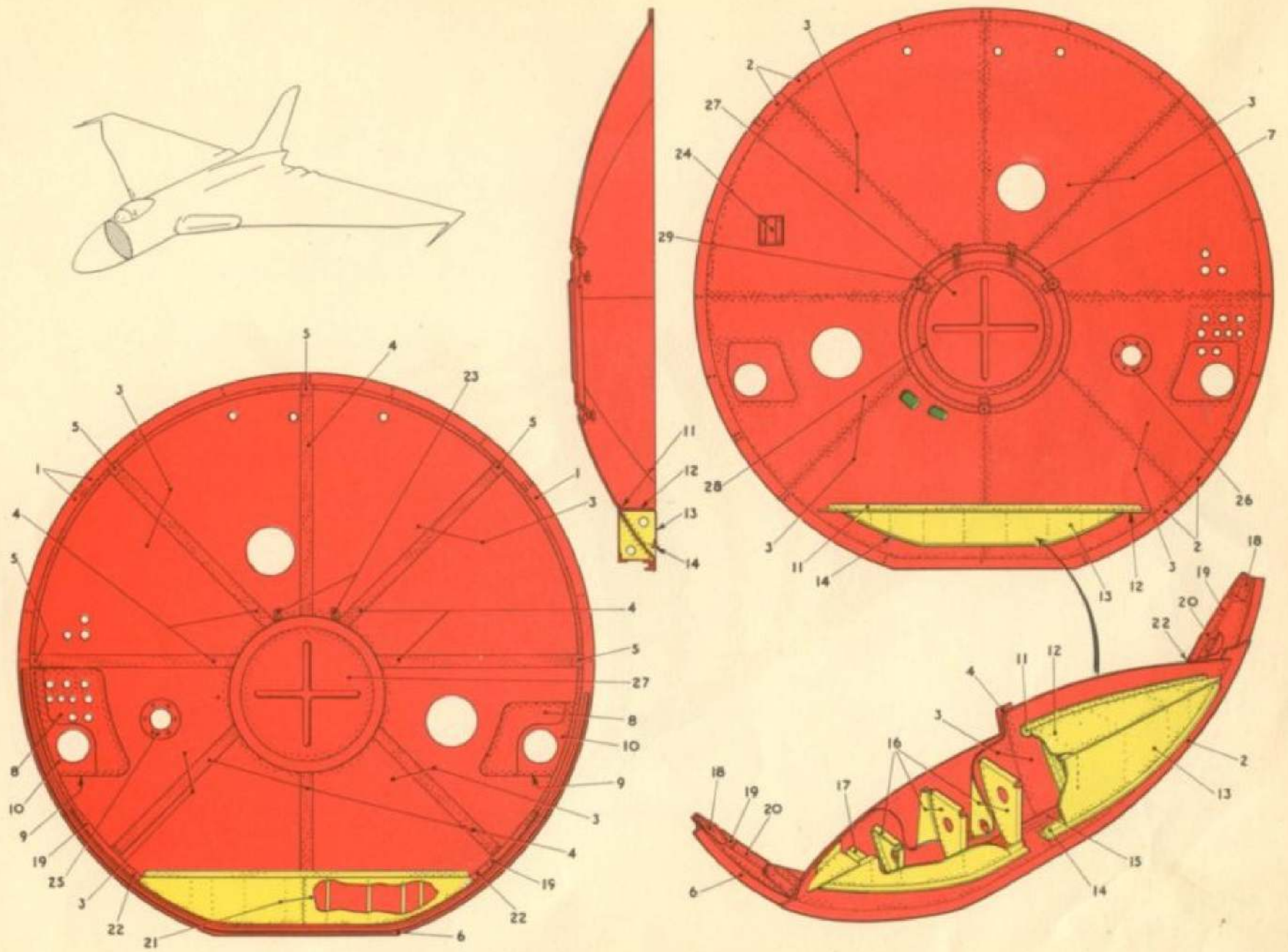


FIG. 205. FRONT PRESSURE BULKHEAD
RESTRICTED

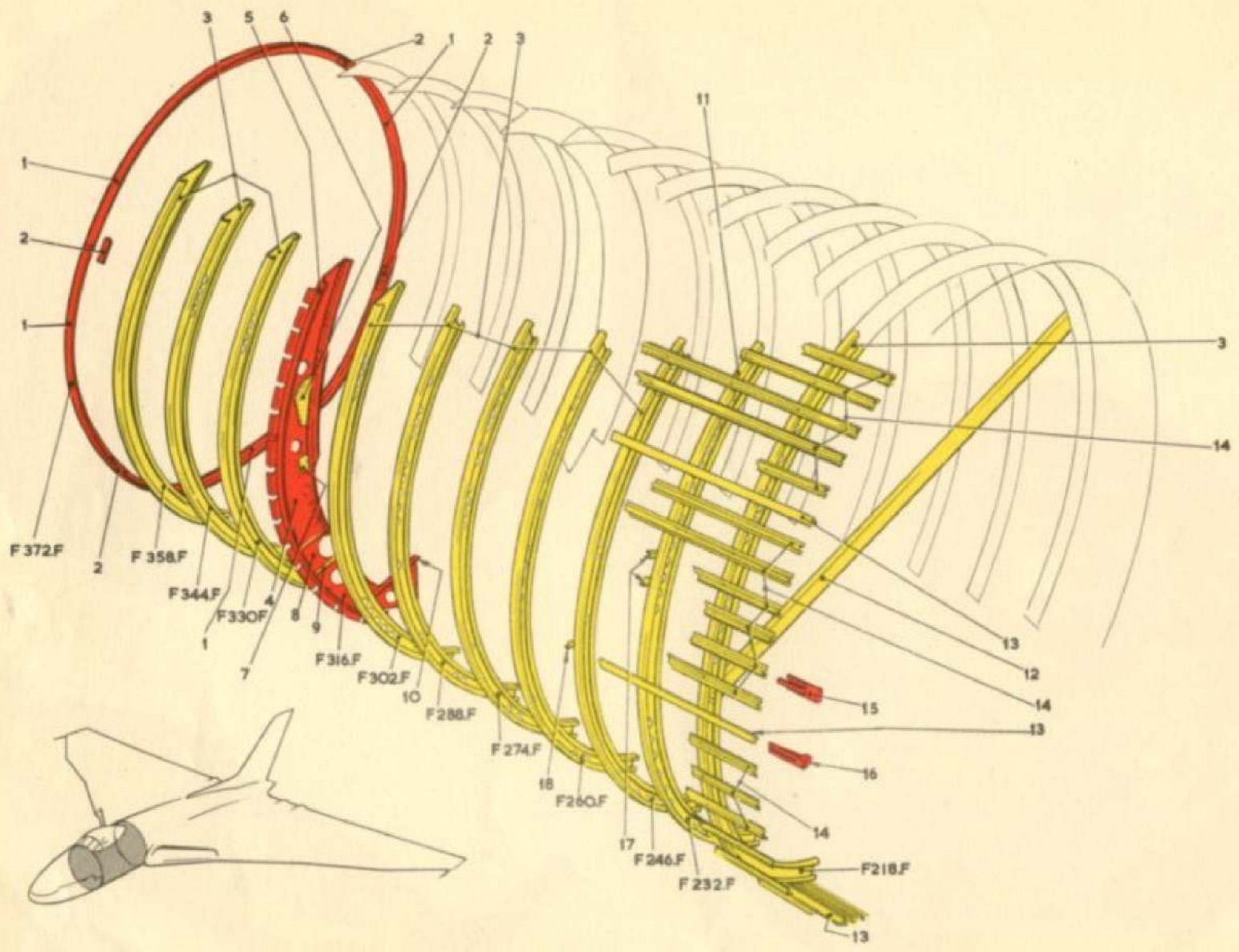


FIG. 206. FORMERS - FRONT FUSELAGE
 RESTRICTED

KEY TO FIG. 206

Item	Specification	Material S.W.G. or Section	Description	Negligible Damage				Repair Figure
				Depth	Dents Distance Apart	Holes Diameter	Pitch Ratio	
1	L65	299/SS.3075	Former Sector	—	—	—	—	—
2	S.3	14	Joint plate	†	—	—	—	—
3	L72	420/SS.1793	Half former	0-10	2-5	0-25	6 : 1	105-107-108
4	L73	18	Web plate	0-10	2-0	0-5	4 : 1	—
5	L72	525/SS.1793	Outer angle	0-10	2-0	—	—	—
6	D.T.D. 687.A	18	Gusset plate	†	0-10	2-0	0-25	4 : 1
7	L72	16	Doubling plate	†	0-15	2-5	0-25	3 : 1
8	L72	16	Reinforcing plate	†	0-15	2-5	0-25	3 : 1
9	L72	16	Strap	†	0-10	2-0	—	—
10	L72	525/SS.1793	Bottom inner angle	0-10	2-0	—	—	114
11	L72	224/SS.1793	Half former	0-10	2-5	0-25	6 : 1	105-107-108
12	L72	766/SS.1793	Cross member	0-10	2-5	0-25	6 : 1	107-108
13	L65	325/SS.3075	Stringers " T " section	—	—	—	—	110
14	L72	211/SS.1793	Stringers " top hat " section	0-50	3-0	—	—	112
15	D.T.D. 88.C	—	Stringer bracket " top hat "	*	—	—	—	—
16	D.T.D. 88.C	—	Stringer bracket " T "	*	—	—	—	—
17	L72	18	Stringer bracket	†	—	—	—	—
18	L72	16	Angle	†	0-10	2-5	—	—

All dimensions quoted are in inches.

† More expedient to renew than repair.

* No repair permitted.

RESTRICTED

(A.L.3, Aug. 57)

KEY TO FIG. 206A

Item	Material		Description	Negligible Damage				Repair Figure
	Specification	S.W.G. or Section		Dents	Holes		Pitch Ratio	
				Depth	Distance Apart	Diameter		
1	L73	18	Rib Web	0.10	2.0	0.5	4 : 1	—
2	L72	525/SS.1793	Rib Angle	0.10	2.0	—	—	—
3	L72	16	Reinforcing Strap	0.10	2.0	—	—	—
4	L72	16	Doubling plate	0.15	2.5	0.25	3 : 1	—
5	L72	16	Stringer Bracket	* 0.10	2.0	—	—	—
6	L72	18	Stringer Bracket	* 0.10	2.0	—	—	—
7	D.T.D. 687	18	Gusset plate	† 0.10	2.0	0.25	4 : 1	—
8	L72	16	Reinforcing Ring	† 0.15	2.0	—	—	—

All dimensions are quoted in inches.

† More expedient to renew than repair.

* No repair permitted.

Key to fig. 207

Item	Spec.	Material S.W.G or Section	Description	Negligible Damage			Holes Pitch Ratio	Repair Fig. No.
				Dents Depth	Dist. Apart	Dia.		
1	L.72	16	Former	—	—	—	—	—
2	DTD.687	16	Front and rear channel	—	—	—	—	—
3	L.72	14	Forward bulkhead skin	—	—	—	—	—
4	L.72	16	Rear bulkhead skin	—	—	—	—	—
5	L.73	20	Stiffeners	—	—	—	—	—
6	L.72	16	Former 316. F	—	—	—	—	—
7	L.72	16	Front outer angle	—	—	—	—	—
8	DTD.259 DTD.88C	—	Front frame	—	—	—	—	—
9	L.72	219/SS.1793	Stringer	0.05	2.5	—	—	—
10	L.72	16	Hinge side members	†—	—	—	—	—
11	DTD.88C	—	Fairing block	†—	—	—	—	—
12	L.72	20	Diaphragm	0.05	3.0	0.25	8 : 1	—
13	L.72	16	Attachment angles	†0.05	3.0	—	—	—
14	S.96	—	Fork	*—	—	—	—	—
15	S.99	—	Pin	*—	—	—	—	—
16	L.65	328/SS.3075	Channel member	0.05	3.0	—	—	—
17	L.72	16	Centre angles	—	—	—	—	—
18	S.96	—	Dowel	*—	—	—	—	—
19	DTD.259 or DTD.88C	—	Base plate	—	—	—	—	—
20	DTD.259 or DTD.88C	—	Corner base plate	†—	—	—	—	—
21	L.72	16	Packing	†0.05	3.0	—	—	—
22	L.72	18	Stiffener bracket	†0.05	3.0	—	—	—
23	L.72	16	Channel	†0.05	3.0	—	—	—
24	DTD.166B	18	Reinforcing plate	†0.05	3.0	—	—	—
25	L.72	16	Angle	†0.05	3.0	—	—	—
26	L.72	18	Skin	0.05	3.0	—	—	—
27	L.72	20	Inner skins	0.10	2.5	—	—	—
28	L.72	18	Forward outer skins	—	—	—	—	—
29	L.72	18	Aft outer skin	0.05	3.0	—	—	—
30	L.72	18	Butt strap	—	—	—	—	—
31	DTD.687	14	Channel	0.05	3.0	—	—	—
32	L.72	20	Centre inner skin	0.10	2.5	—	—	—
33	DTD.124A	14	Channels	†—	—	—	—	—
34	S.3	10	Cam plates	*—	—	—	—	—
35	L.72	20	Aft inner skin	0.10	2.5	—	—	—
36	DTD.410	—	Centre window frame	*—	—	—	—	—
37	DTD.410	—	Side window frame	*—	—	—	—	—
38	DTD.410	—	D. V. window frame	*—	—	—	—	—
39	L.72	3	Sealing strip	*—	—	—	—	—
40	DTD.118A or DTD.142A	—	Sealing strip end	*—	—	—	—	—
41	DTD.88C	—	Windscreen base forging	*—	—	—	—	—
42	L.59	18	Rain deflector	0.10	2.5	0.25	6 : 1	—
43	L.65	—	Wiper stop body	*—	—	—	—	—
44	—	—	D.V. window assembly	*—	—	—	—	—

All dimensions are stated in inches.

† More expedient to replace than repair.

* No repair permitted.

RESTRICTED

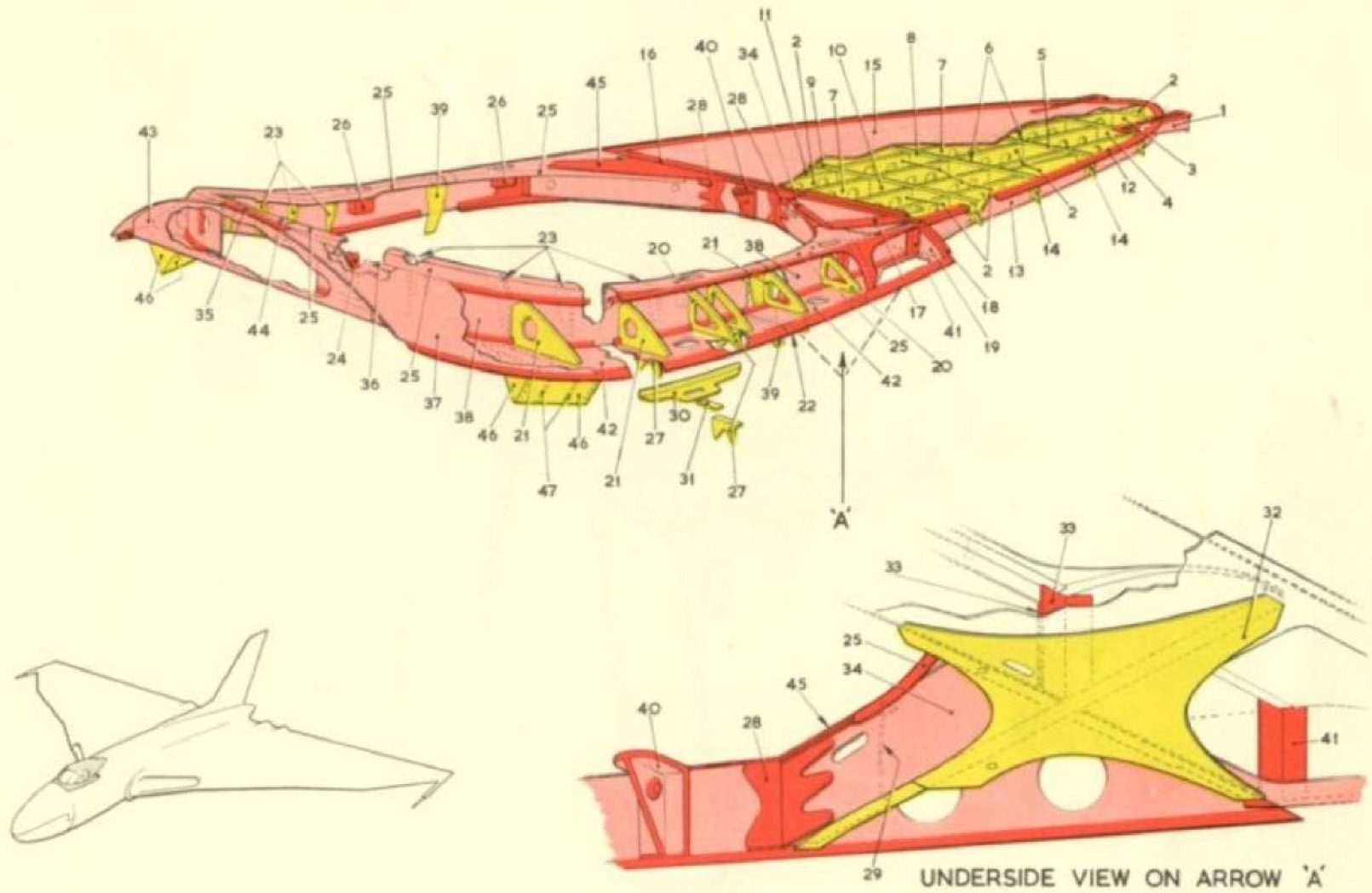
Key to fig. 208

Item	Spec.	Material S.W.G or Section	Description	Negligible Damage			Holes Pitch Ratio	Repair Fig. No.
				Dents Depth	Dist. Apart	Dia.		
1	S.510 or S.514	16	Hinge cover	†0-05	3-0	—	—	—
2	L.72	18	Intercostals	0-05	3-0	0-25	4:1	115
3	L.72	20	Intercostal	0-05	3-0	0-25	4:1	115
4	DTD.687	18	Web	0-05	3-0	0-25	4:1	108
5	L.73	16	Web	0-05	3-0	0-25	4:1	108
6	L.73	12	Bottom boom angle	0-05	3-0	—	—	—
7	L.72	16	Intercostal	0-05	3-0	0-25	4:1	115
8	DTD.687	14	Web plate	0-025	3-0	0-25	4:1	—
9	L.65	338/SS.3075	Top boom	0-025	3-0	0-25	6:1	—
10	DTD.687	16	Web plate	0-05	3-0	0-25	4:1	—
11	L.65	—	Plumb line attach. block	†0-025	3-0	—	—	—
12	DTD.687	10	Cockpit rail—rear	0-025	3-0	—	—	—
13	DTD.687	10	Web plate	0-025	3-0	—	—	—
14	L.72	16	Brackets	†0-025	3-0	—	—	—
15	L.72	18	Top skin	—	—	—	—	—
16	DTD.683	350/SS.3075	Angle bracket	0-025	3-0	—	—	—
17	L.72	16	Channel stiffener	0-025	3-0	0-20	6:1	—
18	L.72	18	Butt strap	†0-05	3-0	0-25	6:1	—
19	L.72	16	Intercostal	0-05	3-0	0-25	6:1	—
20	S.514	16	Intercostal	0-05	3-0	0-25	4:1	—
21	L.72	18	Intercostal	0-05	3-0	0-25	4:1	115
22	DTD.687	10	Joint plate	†0-025	3-0	—	—	—
23	L.72	16	Support bracket	†0-05	3-0	0-25	4:1	—
24	DTD.130	—	Attachment angle	—	—	—	—	—
25	L.73	10	Rail	0-025	3-0	—	—	—
26	S.510	16	Cover	0-025	3-0	—	—	—
27	L.72	16	Attachment bracket	0-05	3-0	0-25	4:1	—
28	DTD.683 or L.65	—	Bracket	0-025	3-0	—	—	—
29	L.73	14	Reinforcing channel	0-025	3-0	0-25	8:1	—
30	L.73	10	Reinforcing plate	0-025	3-0	—	—	—
31	L.73	10	Packing	†0-025	3-0	—	—	—
32	L.73	12	Reinforcing plate	0-025	3-0	0-25	8:1	—
33	L.73	12	Attachment angle	0-025	3-0	0-25	6:1	—
34	L.73	14	Cross member	0-025	3-0	0-25	8:1	—
35	L.73	12	Bracing strip	0-025	3-0	—	—	—
36	DTD.687	10	Angle	0-025	3-0	—	—	—
37	DTD.687	12	Skin	0-025	3-0	—	—	—
38	DTD.687	10	Web	0-025	3-0	—	—	—
39	L.72	10	Gusset plate	†0-025	3-0	—	—	—
40	L.65	—	Ejection jack foot	—	—	—	—	—
41	L.72	16	Bracket	0-05	3-0	0-25	6:1	—
42	L.73	12	Web	0-025	3-0	—	—	—
43	L.72	10	Attachment plate	0-025	3-0	0-25	8:1	—
44	L.65	—	Block	0-025	3-0	—	—	—
45	L.73	10	Reinforcing plate	0-025	3-0	—	—	—
46	L.72	18	Skin panel	0-05	3-0	0-25	8:1	—
47	L.72	20	Diaphragm	†0-05	3-0	—	—	—

All dimensions are stated in inches.

† More expedient to replace than repair.

* No repair permitted.



WKL

Fig.208 Cockpit rail structure
Mod.275, 367, 368 and 405 embodied
RESTRICTED

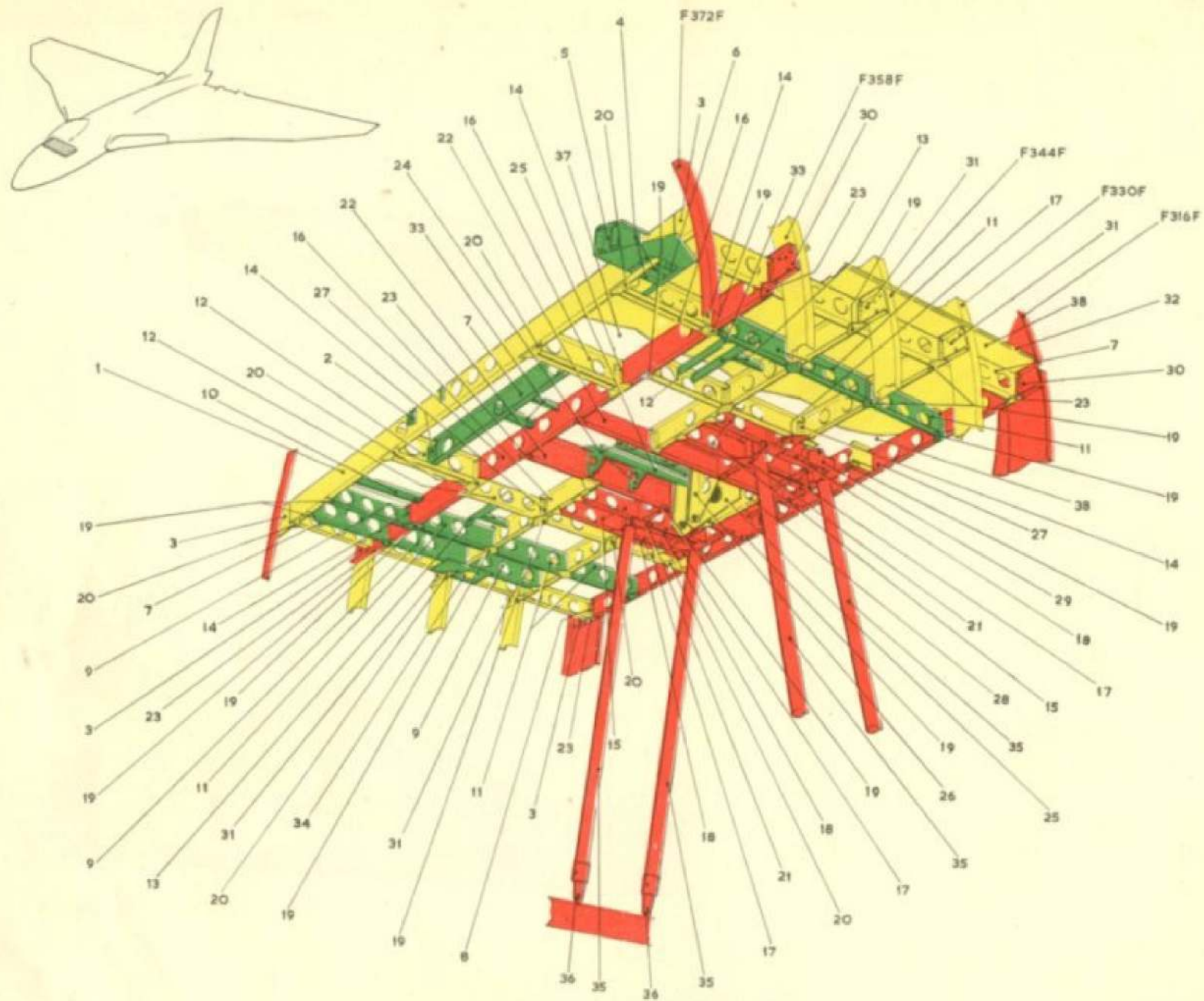


FIG. 209. PILOTS' FLOOR
RESTRICTED

KEY TO FIG. 209

Item	Material Specification	S.W.G. or Section	Description	Negligible Damage				Repair Figure
				Depth	Dents Distance Apart	Holes Diameter	Pitch Ratio	
1	L72	589/SS.1793	Cross member	0-05	3-0	0-25	6 : 1	107-108
2	L72	20	Angle	† 0-10	2-5	—	—	—
3	L72	589/SS.1793	Attachment bracket	0-05	3-0	—	—	115
4	L72	590/SS.1793	Intercostal	0-05	3-0	0-25	4 : 1	115
5	L72	20	Gusset plate	0-10	2-5	0-25	4 : 1	—
6	L72	183/SS.1793	Angle	† 0-05	3-0	—	—	—
7	L72	590/SS.1793	Side member	0-10	2-5	0-25	6 : 1	105-108
8	L72	18	Angle	† 0-10	2-5	—	—	—
9	L72	591/SS.1793	Intercostal	0-10	2-5	0-25	4 : 1	105-108
10	L72	18	Member	0-10	2-5	0-25	4 : 1	108
11	L72	22	Intercostal	0-10	2-5	0-25	4 : 1	105-108
12	L72	590/SS.1793	Intercostal	0-10	2-5	0-25	6 : 1	105-108
13	L72	20	Support angle	0-10	2-5	0-25	4 : 1	—
14	L72	183/SS.1793	Angle	† 0-10	2-5	—	—	—
15	L72	589/SS.1793	Intercostal	0-05	3-0	0-25	6 : 1	105-108
16	L72	590/SS.1793	Intercostal	0-10	2-5	0-25	6 : 1	105-108
17	L72	18	Lamp mounting and Gusset plate	† 0-05	3-0	—	—	—
18	L72	16	Channel	0-05	3-0	—	—	—
19	L72	20	Gusset plate	† 0-10	2-0	—	—	—
20	L72	18	Gusset plate	† 0-10	2-0	—	—	—
21	L72	18	Gusset plate	† 0-05	3-0	—	—	—
22	L72	16	Floor member	0-05	3-0	0-25	8 : 1	108
23	L72	20	Gusset plate	† 0-05	3-0	—	—	—
24	L72	20	Intercostal	0-10	2-5	0-25	4 : 1	115
25	L72	20	Lipped angle	0-10	2-5	0-25	6 : 1	—
26	L72	20	Intercostal	0-10	2-5	0-25	6 : 1	—
27	L72	589/SS.1793	Cross member	0-05	3-0	0-25	8 : 1	105-108
28	L72	589/SS.1793	Intercostal	0-10	2-5	0-25	6 : 1	105-108
29	L72	8	Bearing plate	† —	—	—	—	—
30	L72	16	Attachment bracket	0-05	3-0	—	—	115
31	L72	590/SS.1793	Attachment bracket	0-10	2-5	0-25	6 : 1	115
32	L72	696/SS.1793	Shear angle	0-10	2-5	—	—	—
33	L72	18	Member	0-10	2-5	0-25	4 : 1	—
34	L72	20	Reinforcing skin	0-15	2-5	0-25	4 : 1	—
35	L63	14	Tube for support strut	* —	—	—	—	—
36	D.T.D. 683 or L65	—	End socket	* —	—	—	—	—
37	L72	22	Forward floor skin	0-10	2-5	0-25	4 : 1	225
38	L72	20	Aft floor skin	0-10	3-0	0-25	6 : 1	225

All dimensions are quoted in inches.

† More expedient to replace than repair.

* No repairs permitted

RESTRICTED

(A.L.3, Aug. 57)

KEY TO FIG. 210

Item	Material		Description	Negligible Damage					Repair Figure
	Specification	S.W.G. or Section		Dents		Holes			
				Depth	Distance Apart	Diameter	Pitch Ratio		
1	L72	589/SS.1793	Cross member	0-10	2-5	0-25	6 : 1	108	
2	L72	16	Joint bracket	0-10	2-5	0-25	6 : 1	115	
3	L72	18	Gusset plate	† 0-10	2-5	—	—	—	
4	L72	20	Gusset plate	† 0-10	2-5	—	—	—	
5	L72	18	Intercostal	0-10	2-5	0-25	4 : 1	105, 108	
6	L72	20	Gusset plate	† 0-10	2-5	—	—	—	
7	L72	16	Gusset plate	† 0-10	2-5	—	—	—	
8	L72	16	Cross member	0-10	2-5	0-25	6 : 1	108	
9	L72	18	Angle	† 0-10	2-5	—	—	—	
10	L65	—	Jack attachment bracket	* —	—	—	—	—	
11	L72	18	Joint plate	† 0-10	2-5	—	—	—	
12	L72	224/SS.1793	Cross member	0-10	2-5	0-25	6 : 1	108	
13	L72	20	Gusset plate	† 0-10	2-5	—	—	—	
14	L72	461/SS.1793	Step support	0-10	2-5	0-25	6 : 1	108	
15	L72	413/SS.1793	Cross member	0-15	2-0	0-25	4 : 1	108	
16	L72	413/SS.1793	Intercostal	0-15	2-0	0-25	4 : 1	108	
17	L72	20	Gusset plate	† 0-10	2-5	—	—	—	
18	L72	413/SS.1793	Cross member	0-10	2-5	0-25	6 : 1	108	
19	L72	18	Angle	0-10	2-5	0-25	6 : 1	—	
20	L72	14	Attachment bracket	* —	—	—	—	—	
21	L72	18	Support bracket	† 0-10	2-5	—	—	—	
22	L72	413/SS.1793	Intercostal	0-15	2-0	0-25	4 : 1	108	
23	L72	413/SS.1793	Intercostal	0-10	2-5	0-25	6 : 1	108	
24	L72	18	Angle bracket	* 0-10	2-5	0-25	6 : 1	—	
25	L72	18	Foot guard	0-20	2-0	0-5	4 : 1	—	
26	L72	22	Shelf cross member	0-15	2-0	0-25	4 : 1	—	
27	L72	20	Floor skin	0-15	3-0	0-5	5 : 1	225	
28	L72	18	Floor support	0-10	2-5	0-25	6 : 1	108	
29	L72	22	Channel member	0-15	2-0	0-25	4 : 1	—	
30	L72	253/SS.1793	Angle	0-10	2-0	—	—	—	
31	L72	772/SS.1793	Channel member	0-15	2-0	0-25	4 : 1	—	
32	L72	18	Angle bracket	* 0-10	2-5	—	—	—	
33	L72	20	Gusset plate	† 0-10	2-5	—	—	—	
34	L72	18	Channel stiffener	0-10	2-5	0-25	6 : 1	—	
35	L72	244/SS.1793	Floor support	0-10	2-5	0-25	6 : 1	108	
36	L72	16	Centre frame member	0-10	2-5	0-25	6 : 1	108	
37	L72	16	Channel	0-10	2-5	0-25	6 : 1	108	
38	L72	6	Seat attachment plate	* —	—	—	—	—	
39	D.T.D. 423	248/SS.3075	Angle	0-10	2-0	—	—	—	
40	L72	20	Angle	0-10	2-0	—	—	—	

All dimensions are quoted in inches.

† More expedient to replace than repair.

* No repairs permitted.

RESTRICTED

Key to fig. 211

Item	Spec.	Material S.W.G or Section	Description	Negligible Damage			Holes Pitch Ratio	Repair Fig. No.
				Dents Depth	Dist. Apart	Dia.		
1	DTD.633	—	Front O/B bracket	†—	—	—	—	—
2	L.72	14	Channel member	0.030	6.0	—	—	—
3	L.72	14	Channel member	0.030	6.0	—	—	—
4	L.65	261/SS.3075	Angle	†—	—	—	—	—
5	L.72	16	Angle bracket	†—	—	—	—	—
6	L.72	16	Angle bracket	†—	—	—	—	—
7	L.72	16	Pressing	0.030	6.0	—	—	108
8	DTD.683	—	Attachment bracket	†—	—	—	—	—
9	DTD.683	—	Attachment bracket	†—	—	—	—	—
10	L.65	314/SS.3075	Inner angle	0.030	6.0	—	—	—
11	L.72	16	Web	0.030	6.0	0.5	8 : 1	—
12	L.65	314/SS.3075	Inner angle	0.030	6.0	—	—	—
13	L.72	16	Web	0.030	6.0	0.5	8 : 1	—
14	L.65	299/SS.3075	Outer angle	0.030	6.0	—	—	—
15	L.65	—	Bracket	†—	—	—	—	—
16	L.72	18	Outer diaphragms	0.050	6.0	0.5	8 : 1	108
17	L.72	18	Outer diaphragms	0.030	6.0	—	—	108
18	L.72	10	Intermediate longeron	0.030	6.0	0.25	16 : 1	—
19	L.72	16	Angle bracket	0.030	6.0	—	—	—
20	L.72	14	Side diaphragms	0.050	6.0	0.5	8 : 1	108
21	L.72	14	Rear diaphragms	0.050	6.0	0.5	8 : 1	108
22	L.72	14	Front diaphragms	0.030	6.0	—	—	108
23	L.72	10	Reinforcing angles	0.050	6.0	—	—	—
24	L.72	18	Intercostals	0.050	6.0	0.5	8 : 1	105, 108
25	L.72	18	Cross member 218" F	0.050	6.0	0.5	8 : 1	108
26	DTD.88C	—	Stringer attachment bracket	*—	—	—	—	—
27	L.72	18	Door frame attachment brackets	0.030	6.0	—	—	—
28	L.72	10	Door frame pressing	0.030	6.0	—	—	—
29	L.72	14	Web	0.030	6.0	—	—	—
30	DTD.130A	139/SS.3075	Upper "T" section	—	—	—	—	—
31	L.72	14	Channel member	0.050	6.0	0.5	8 : 1	—
32	L.72	10	Forward longerons	0.030	6.0	—	—	—
33	L.72	14	Channel member	0.030	6.0	—	—	—
34	L.72	12	Inner skin member (Former 302" F)	0.030	6.0	—	—	—
35	L.72	16	Web (Former 302" F)	0.030	6.0	—	—	—
36	L.72	18	Blister intermediate formers	0.050	6.0	0.5	8 : 1	108
37	L.72	16	Blister former 316" F	0.030	6.0	0.5	16 : 1	108

All dimensions are stated in inches.

† More expedient to replace than repair.

* No repair permitted.

Key to fig. 211 (continued)

Item	Spec.	Material S.W.G or Section	Description	Dents		Negligible Damage		Holes Pitch Ratio	Repair Fig. No.
				Depth	Dist. Apart	Dist. Apart	Dia.		
38	L.72	16	Blister formers	0.050	6.0	6.0	0.5	8 : 1	108
39	DTD.443	159/SS.3075	Former flange "T" section (344" F)	0.050	6.0	6.0	—	—	—
40	L.72	16	Inclined former	0.050	6.0	6.0	0.5	8 : 1	108
41	L.72	16	Intercostal	0.030	6.0	6.0	—	—	—
42	L.72	16	Intercostal	0.050	6.0	6.0	0.5	8 : 1	108
43	L.72	18	Intercostals on C/L of blister	0.050	6.0	6.0	0.5	8 : 1	108
44	L.72	18	Intercostals (25°)	0.050	6.0	6.0	0.5	8 : 1	108
45	L.72	18	Intercostals (45°)	0.050	6.0	6.0	0.5	8 : 1	108
46	L.73	12	Window frame	0.030	6.0	6.0	—	—	—
47	L.72	10	Curved frame members	0.030	6.0	6.0	—	—	—
48	L.72	16	Window channel	0.030	6.0	6.0	—	—	—
49	L.72	16	Door stiffening members	0.050	6.0	6.0	0.5	8 : 1	108
50	DTD.687	6	Longitudinal members	0.030	6.0	6.0	0.5	16 : 1	—
51	L.72	14	Door stiffening members	0.030	6.0	6.0	0.5	16 : 1	—
52	L.72	10	Door pressing	0.030	6.0	6.0	—	—	—
53	L.73	10	Reinforcing channels	0.030	6.0	6.0	0.5	16 : 1	—
54	L.72	16	Attachment brackets	†—	—	—	—	—	—
55	L.65	—	Locking pin brackets	†—	—	—	—	—	—
56	L.65	—	Hinge fittings	—	—	—	—	—	—
57	L.72	—	Window channel diaphragms	0.050	6.0	6.0	0.25	8 : 1	—
58	L.72	16	Intercostals	0.030	6.0	6.0	—	—	115
59	L.72	16	Attachment angles	†—	—	—	—	—	—
60	DTD.683	—	Window frames corner brackets	*—	—	—	—	—	—
61	L.72	14	Angle brackets	†—	—	—	—	—	—
62	DTD.683	—	Bracket	*—	—	—	—	—	—
63	L.72	16	Hinge diaphragms	*—	—	—	—	—	—
64	L.72	16	Intercostals	0.050	6.0	6.0	—	—	115
65	DTD.166	—	Striker bracket	†—	—	—	—	—	—
66	or 171 L.72	16 and 18 18	Outer skin	—	—	—	—	—	—

All dimensions are stated in inches.

† More expedient to replace than repair.

* No repair permitted.

RESTRICTED

KEY TO FIG. 212

Item	Material		Description	Negligible Damage				Rep. Fig.
	Spec.	S.W.G. or Section		Dents		Holes		
				Depth	Distance Apart	Diam.	Pitch Ratio	
1	L72	581/SS.1793	" Top hat " stiffeners	0-050	6-0	—	—	224A, 224C, 224D.
2	L65	294/SS.1793	Angle	†	—	—	—	—
3	L72	16	Web	†	0-050	—	—	—
4	L72	12b/SS.1793	Angle	†	—	—	—	—
5	D.T.D. 683	—	Bracket	*	—	—	—	—
6	L65	—	Bracket	*	—	—	—	—
7	L72	14	Joint plate	*	—	—	—	—
8	L72	1	Gusset plate	†	0-050	6-0	—	—
9	L72	18	Bracket	†	—	—	—	—
10	D.T.D. 683	—	Nosewheel attachment bracket	*	—	—	—	—
11	D.T.D. 683	—	Nosewheel attachment bracket	*	—	—	—	—
12	L72	20	Stabilizing bracket	†	0-05	6-0	0-5	12 : 1
13	L72	16	Plate	†	—	—	—	—
14	L72	22	Packing strip	†	0-050	6-0	—	—
15	L72	18	Stiffening plate forward	†	—	—	—	—
16	L72	14	Web plate	—	—	—	—	224A, 224B
17	L72	16	Angle stiffeners	*	—	—	—	—
18	L72	14	Channel bracket	†	—	—	—	—
19	D.T.D. 363.A	—	Beam	—	—	—	—	—
20	D.T.D. 363.A	—	Reinforcing piece	—	—	0-5	16 : 1	—
21	L65	300/SS.3075	Aft bottom angle	—	—	—	—	—
22	L72	12/SS.1793	Landing angle	—	0-050	6-0	—	—
23	L65	300/SS.3075	Half ring	—	—	—	—	—
24	L65	300/SS.3075	Joint angle	†	—	—	—	—
25	L72	16	Reinforcing channel	—	0-050	6-0	—	—
26	L65	—	Slings bracket	*	—	—	—	—
27	L72	486/SS.1793	Channel stiffener	—	—	—	—	—
28	L72	14	Strap plate	—	0-050	6-0	—	—
29	L72	10	Reinforcing plate	†	0-050	6-0	—	—
30	L72	511/SS.1793	Panel mounting member	†	0-10	6-0	0-25	8 : 1
31	L72	20	Suppressor Mounting bracket	†	0-050	6-0	0-5	8 : 1

All dimensions are quoted in inches.

† More expedient to renew than repair.

* No repair permitted.

RESTRICTED

Key to fig. 214

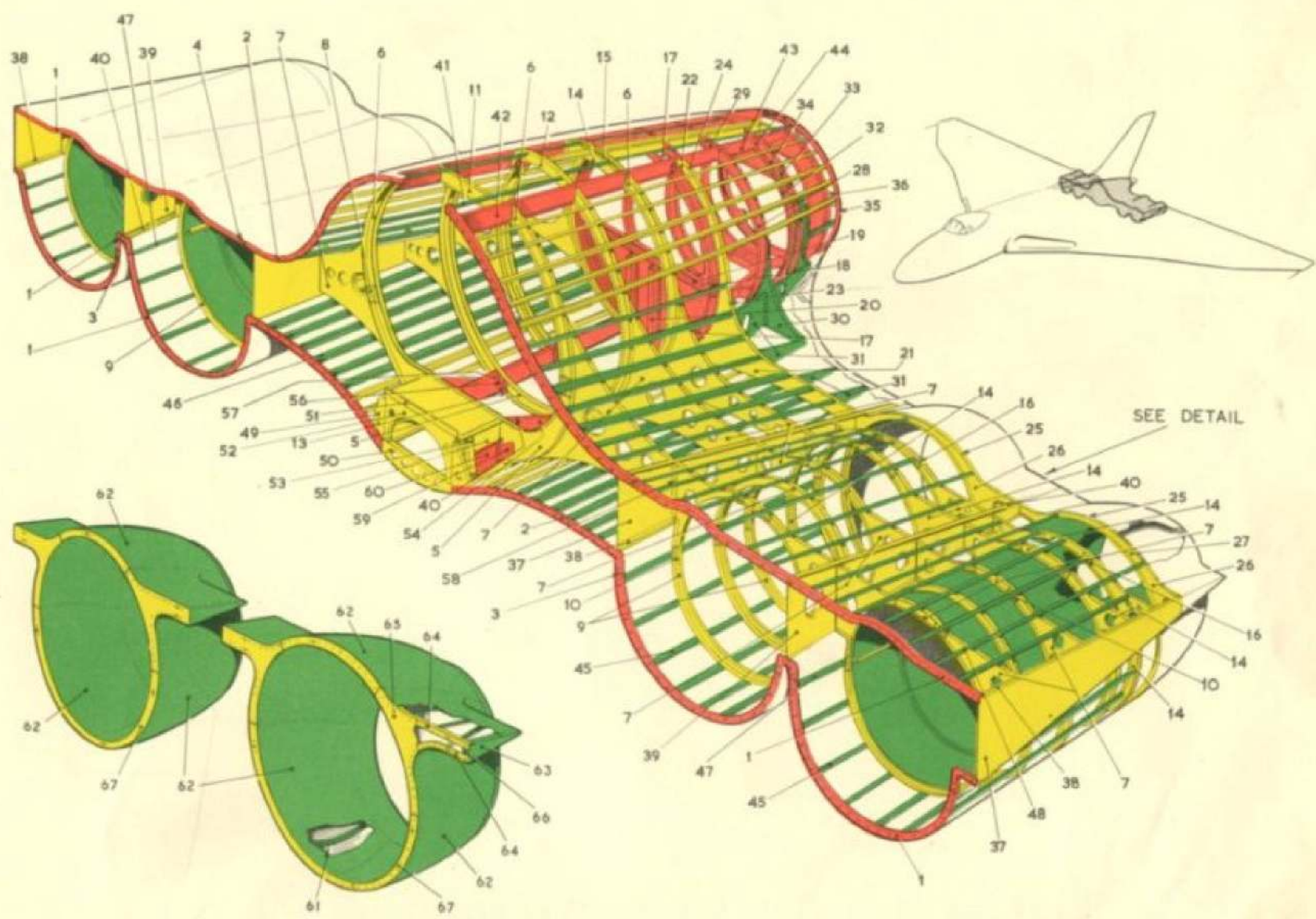
Item	Spec.	Material	S.W.G. or Section	Description	Depth	Negligible Damage		Holes		Repair Fig.
						Dents	Dist. Apart	Dia.	Pitch Ratio	
1	L.65	316/SS.3075		Wing angles	* —	—	—	—	—	—
2	L.65	317/SS.3075		Wing angles	* —	—	—	—	—	—
3	L.72	8		Joint plates	* —	—	—	—	—	—
4	L.65	316/SS.3075		Joint angles	* —	—	—	—	—	—
5	L.72	18		Bottom member	0.10	2.5	0.25	6:1	—	107-108
6	L.72	18		Former side ring	0.10	2.5	0.25	6:1	—	108
7	L.72	20		Side and top members	0.15	2.5	0.25	4:1	—	—
8	L.72	18		Joint plate	† 0.10	2.5	—	—	—	—
9	L.72	20		Bottom member	0.10	3.0	—	—	—	—
10	L.72	20		Jointing channel	† 0.10	3.0	—	—	—	—
11	L.72	455/SS.1793		Intercostal	0.10	2.5	0.25	8:1	—	108-115
12	L.72	14		Frame top	0.10	2.5	0.25	8:1	—	108
13	L.72	446/SS.1793		Angle bottom member	0.10	3.0	—	—	—	108
14	L.72	16		Top member	0.10	2.5	0.25	8:1	—	108
15	L.72	12a/SS.1793		Angle	0.10	2.5	—	—	—	113
16	L.72	16		Jointing channel	† 0.10	2.5	—	—	—	—
17	L.72	455/SS.1793		Former top	0.05	3.0	—	—	—	108
18	L.72	18		Jointing channel	† 0.05	3.0	—	—	—	—
19	L.72	18		Channel	0.05	3.0	—	—	—	108
20	L.72	211/SS.1793		Vertical stiffeners	0.05	3.0	—	—	—	112
21	DTD.626	18		Web (side)	0.10	2.5	0.25	6:1	—	108
22	DTD.626	17		Web	0.10	2.5	0.25	6:1	—	108
23	L.72	875/SS.1793		Angle	0.10	2.5	—	—	—	—
24	L.72	20		Angle	0.10	2.5	—	—	—	—
25	L.72	359/SS.1793		Angle	0.10	2.5	—	—	—	—
26	L.72	20		Web	0.15	3.0	0.25	6:1	—	—
27	L.72	854/SS.1793		Web top centre	0.15	3.0	0.25	6:1	—	—
28	L.72	237/SS.1793		Former section	0.05	3.0	—	—	—	—
29	L.72	18		Former top	0.05	3.0	—	—	—	108
30	L.72	24		Former extension	0.20	2.0	0.25	4:1	—	108
31	L.72	24		Ribs	0.20	2.0	0.25	4:1	—	108
32	L.65	343/SS.3075		Angle	0.05	3.0	—	—	—	—
33	L.72	18		Angle	0.05	3.0	—	—	—	—
34	L.72	18		Web	0.05	3.0	—	—	—	—
35	L.65	313/SS.3075		Half former	—	—	—	—	—	—
36	L.72	12		Joint angle	* —	—	—	—	—	—
37	L.72	22		Web	0.15	3.0	0.25	6:1	—	—
38	L.65	356/SS.3075		Angle	0.10	3.0	—	—	—	—
39	L.72	20		Web	0.15	3.0	0.25	6:1	—	—
40	L.65	293/SS.3075		Angle	0.10	3.0	—	—	—	—
41	L.65	318/SS.3075		Stringer	0.10	2.5	—	—	—	—
42	L.72	14		Beam and channel	—	—	—	—	—	108
43	L.72	18		Beam	—	—	—	—	—	108
44	L.72	18		Attachment bracket	† —	—	—	—	—	—
45	L.72	582/SS.1793		Stringer (Z-section)	0.10	2.5	—	—	—	221
46	L.72	211/SS.1793		Stringer (top-hat)	0.10	2.5	—	—	—	112
47	L.65	337/SS.3075		Stringer (T-section)	0.05	3.0	—	—	—	—
48	L.65	309/SS.3075		Stringer (T-section)	0.10	2.5	—	—	—	—
49	L.72	20		Diaphragm	0.15	3.0	0.25	6:1	—	108
50	L.72	20		Cross member	0.15	3.0	0.25	6:1	—	108
51	L.72	16		Angle	0.05	3.0	—	—	—	—
52	L.72	20		Pressing	0.15	3.0	0.25	6:1	—	108
53	L.72	20		Aft hinge members	0.10	2.5	—	—	—	—
54	L.72	18		Web	0.10	2.5	0.25	8:1	—	—
55	L.72	18		Web	0.10	2.5	0.25	4:1	—	—
56	L.72	18		Attachment angle	* —	—	—	—	—	—
57	L.72	14		Beam	—	—	—	—	—	—
58	L.72	20		Angles	† 0.10	2.5	—	—	—	—
59	L.72	18		Joint bracket	0.10	2.5	0.25	6:1	—	115
60	L.72	14		Forward beam	—	—	—	—	—	—
61	S.3	981/SS.1793		Stiffener	0.05	3.0	—	—	—	—
62	S.3	24		Skins	0.05	3.0	—	—	—	—
63	L.72	20		Rib	† 0.05	3.0	—	—	—	—
64	L.65	358/SS.3075		Jet pipe formers	0.05	3.0	—	—	—	—
65	L.72	20		Former skin	0.05	3.0	—	—	—	—
66	L.72	16		Packing	* 0.05	3.0	—	—	—	—
67	L.72	854/SS.1793		Web bottom angle	0.05	3.0	—	—	—	—

All dimensions are quoted in inches.

† More expedient to replace than repair.

* No repairs permitted.

RESTRICTED



JET PIPE CAPS

FIG. 214. REAR FUSELAGE STRUCTURE RESTRICTED

(A.L. 9, Mar. 58)

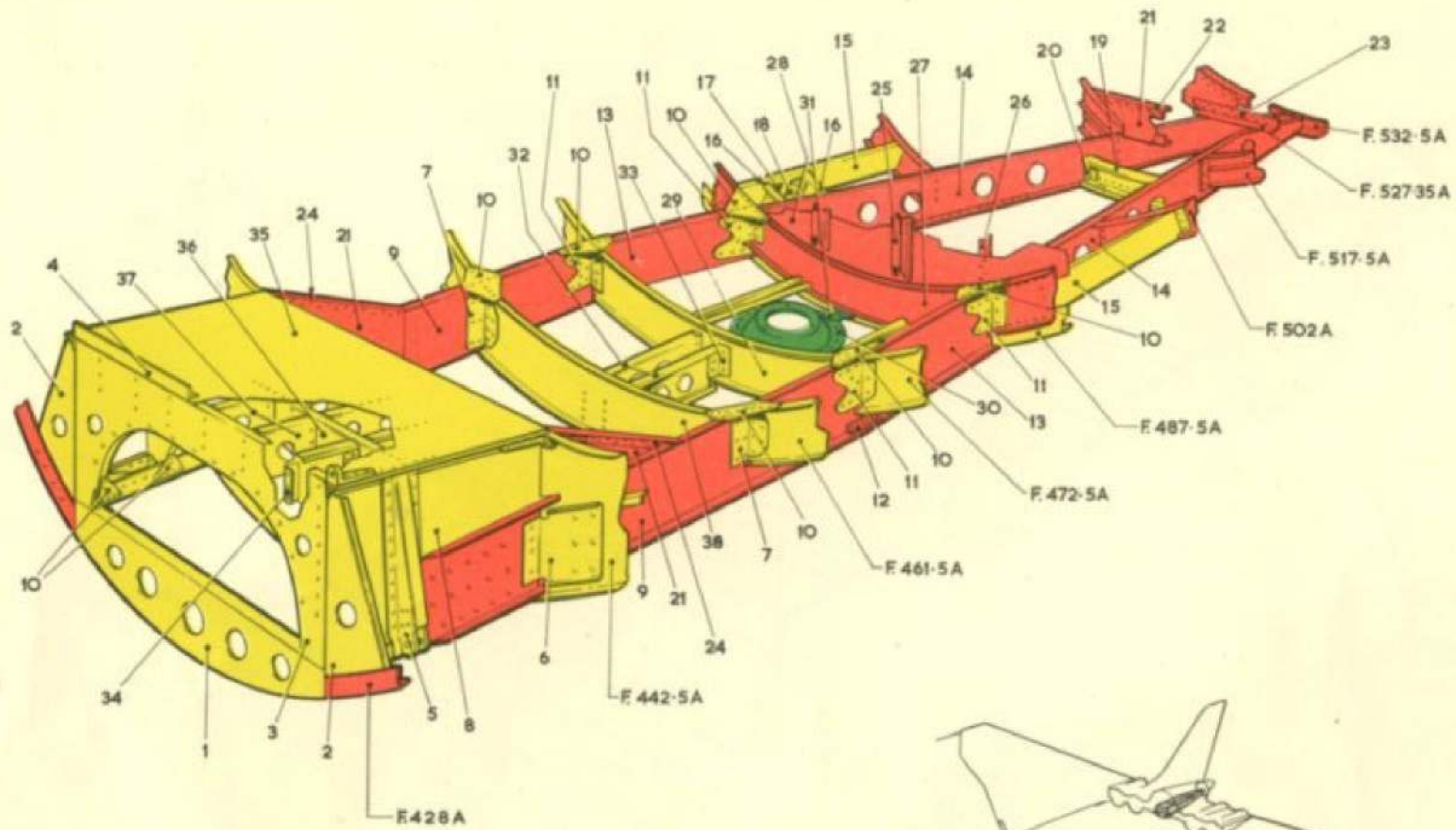


FIG. 215. REAR FUSELAGE - BOTTOM STRUCTURE
 RESTRICTED

KEY TO FIG. 215

Item	Material Specification	S.W.G. or Section	Description	Negligible Damage				Repair Figure
				Dents Depth	Holes Distance Apart	Holes Diameter	Holes Pitch Ratio	
1	L72	20	Cross member	0.15	3.0	0.25	6 : 1	108
2	L72	20	Diaphragm	0.15	3.0	0.25	6 : 1	108
3	L72	20	Pressing	0.15	3.0	0.25	6 : 1	108
4	L72	16	Angle	0.05	3.0	—	—	—
5	L72	20	Aft hinge member	0.10	2.5	—	—	—
6	L72	18	Joint bracket	0.10	2.5	0.25	6 : 1	115
7	L72	18	Attachment angle	† 0.10	2.5	0.25	6 : 1	—
8	L72	18	Web	0.10	2.5	0.25	4 : 1	—
9	L72	14	Forward beam	—	—	—	—	—
10	L72	18	Gusset plate	† 0.10	2.5	—	—	—
11	L72	16	Attachment angle	† 0.10	2.5	0.25	6 : 1	—
12	S.3 or S.84	20	Joint angle	*	—	—	—	—
13	L72	16	Aft beam	0.05	3.0	0.25	6 : 1	—
14	L72	16	Tail bumper aft beam	0.05	3.0	0.25	6 : 1	—
15	L72	18	Intercostal	0.05	3.0	0.25	6 : 1	108, 115
16	L72	16	Intercostal	0.05	3.0	0.25	6 : 1	115
17	L65	254/SS.3075	Attachment angle	† 0.05	3.0	—	—	—
18	L65	255/SS.3075	Attachment angle	† 0.05	3.0	—	—	—
19	L72	18	Attachment channel	† 0.10	2.5	0.25	8 : 1	108
20	L72	18	Attachment angle	† 0.10	2.5	—	—	—
21	L72	18	Web	0.05	3.0	0.25	8 : 1	—
22	L65	294/SS.3075	Angle	—	—	—	—	—
23	L65	344/SS.3075	Forward angle	—	—	—	—	—
24	L65	293/SS.3075	Angle	—	—	—	—	—
25	L72	211/SS.1793	Stiffener	0.05	3.0	—	—	112
26	L72	16	Vent angle	0.05	3.0	—	—	—
27	L72	455/SS.1793	Bottom half former	0.05	3.0	—	—	—
28	D.T.D. 626	18	Web	0.05	3.0	—	—	—
29	L72	455/SS.1793	Half former	0.10	2.5	0.25	8 : 1	108
30	L72	18	Mounting ring	0.05	3.0	—	—	—
31	L72	16	Attachment bracket	† 0.05	3.0	—	—	—
32	L72	432/SS.1793	Intercostal	0.10	2.5	0.25	8 : 1	105, 108
33	L72	12d/SS.1793	Attachment bracket	† 0.10	2.5	—	—	—
34	L72	20	Angles	† 0.10	2.5	—	—	—
35	L72	20	Skin	0.15	3.0	0.25	6 : 1	—
36	L72	20	Support arch pressing	0.15	3.0	0.25	6 : 1	108
37	L72	20	Intercostal	0.15	3.0	0.25	6 : 1	108-115
38	L72	18	Frame bottom	0.10	2.5	0.25	8 : 1	108-115

All dimensions are quoted in inches.

† More expedient to renew than repair.

* No repairs permitted.

RESTRICTED

KEY TO FIG. 216

Item	Material		Description	Dents		Negligible Damage		Pitch Ratio	Repair Fig.
	Spec.	S.W.G. or Section		Depth	Dist. Apart	Dia.	Holes		
1	L.65	313/SS.3075	Half former	—	—	0-125	4 : 1	—	
2	L.72	12	Joint angle	*	—	—	—	—	
3	L.72	12	Reinforcing angle	†	—	—	—	—	
4	L.65	277/SS.3075	Aft Stiffener	†	—	—	—	—	
5	L.72	10	Joint plate	*	—	—	—	—	
6	L.72	20	Skin Attachment angle	0-05	3-0	0-125	4 : 1	—	
7	L.65	343/SS.3075	Outer angle	0-05	3-0	0-125	4 : 1	—	
8	L.72	18	Web	0-05	3-0	0-25	8 : 1	—	
9	L.65	343/SS.3075	Angle joint plate	*	—	—	—	—	
10	L.72	18	Joint plate	*	—	—	—	—	
11	L.65	365/SS.3075	Stiffener	0-05	3-0	0-125	4 : 1	—	
12	L.65	294/SS.3075	Reinforcing angle	0-05	3-0	0-125	4 : 1	—	
13	L.72	18	Reinforcing angle	†	0-05	3-0	0-125	4 : 1	
14	L.72	20	Strap plate	†	—	—	—	—	
15	L.72	347/SS.1793	Angle	†	0-10	2-5	0-25	4 : 1	
16	L.72	18	Reinforcing angle	†	0-10	2-5	0-25	4 : 1	
17	L.72	18	Angle	0-10	2-5	0-25	4 : 1	—	
18	L.72	14	Packing	0-05	3-0	0-125	8 : 1	—	
19	L.72	14	Packing	0-05	3-0	0-25	4 : 1	—	
20	L.72	211/SS.1793	Stringer, " Top hat "	0-05	3-0	0-125	4 : 1	112	
21	L.65	318/SS.3075	Stringer, " T " section	0-05	3-0	0-125	4 : 1	—	
22	DTD.124A	10	Attachment bracket	*	—	—	—	—	
23	S.3	22	Parachute cable trough	0-20	3-0	—	—	—	
24	L.72	14	Web	0-050	3-0	0-25	8 : 1	—	
25	L.65	222/SS.3075	Top Boom	—	—	—	—	—	
26	DTD.130A	269/SS.3075	Bottom Boom	—	—	—	—	—	
27	L.72	16	Attachment bracket	†	0-10	2-5	—	—	
28	L.65	300/SS.3075	Attachment angle	†	0-10	2-5	—	—	
29	L.72	18	Top former	0-05	3-0	0-25	8 : 1	108	
30	L.72	455/SS.1793	Top former	0-05	3-0	0-25	8 : 1	108	
31	L.72	20	Angle	0-05	3-0	—	—	—	
32	L.72	386/SS.1793	Inner angle	0-05	3-0	—	—	—	
33	DTD.626	17	Web	0-05	3-0	0-25	8 : 1	—	
34	L.72	18	Channel	0-10	2-5	0-25	4 : 1	—	
35	L.72	20	Lipped section	0-05	3-0	0-25	4 : 1	—	
36	L.72	18	Door formers	0-05	2-5	0-25	8 : 1	—	
37	L.72	18	Door aft member	0-10	2-5	0-5	8 : 1	—	
38	L.72	20	Door outer skin	0-15	2-5	—	—	103-104	
39	L.72	22	Door inner skin	0-15	2-5	—	—	103-104	
40	L.72	20	Gusset plate	†	0-05	2-5	0-125	8 : 1	
41	L.72	18	Door member " Z " section	0-05	2-5	0-125	8 : 1	—	
42	L.65	—	Bracket	*	—	—	—	—	
43	L.72	20	Access panel	0-20	2-5	—	—	103-104	
44	L.72	20	Removable base panel	0-20	2-5	—	—	103-104	
45	L.72	18/SS.1793	Stiffener	0-050	2-5	0-125	8 : 1	—	
46	L.72	20	Forward side panel	0-20	2-5	—	—	103-104	
47	L.63	20	Tube	†	—	0-125	8 : 1	—	
48	L.72	18	Plate	†	0-05	2-5	—	—	
49	S.97	—	Jettison hook assembly	*	—	—	—	—	
50	DTD.124A	8	Side plates	*	—	—	—	—	
51	L.72	16	Web	0-10	3-0	0-25	8 : 1	—	
52	L.72	18	Attachment angle	†	—	—	—	—	
53	L.72	16	Attachment angle	†	0-05	3-0	—	—	
54	L.72	18	Beam	0-05	3-0	0-25	12 : 1	—	
55	L.72	16	Attachment bracket	†	—	—	—	—	
56	L.72	20	Container—aft side	0-20	2-5	—	—	103-104	
57	L.72	20	Base angle	0-10	2-5	0-125	8 : 1	—	

All dimensions are quoted in inches.

† More expedient to renew than repair.

* No repairs permitted.

RESTRICTED

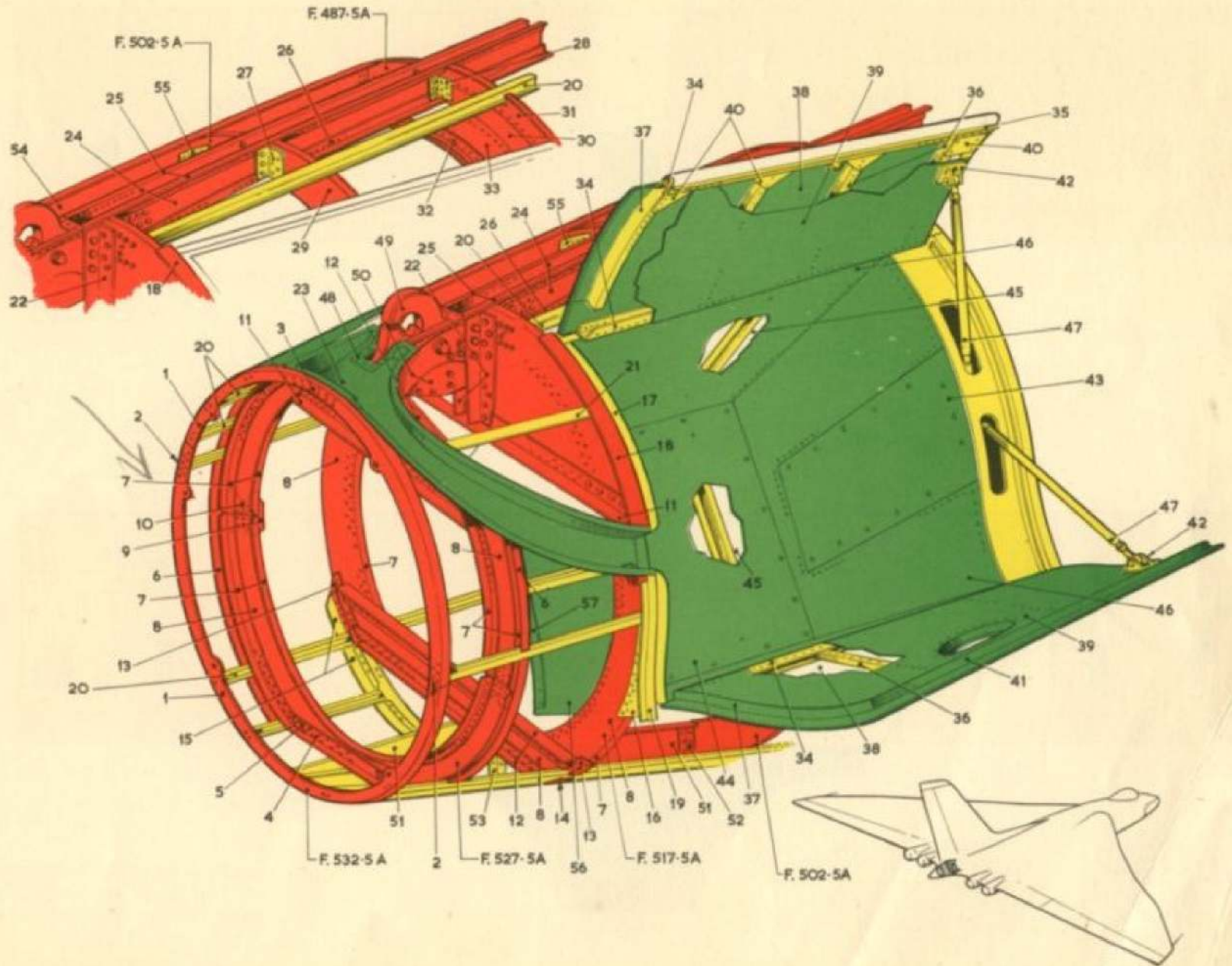
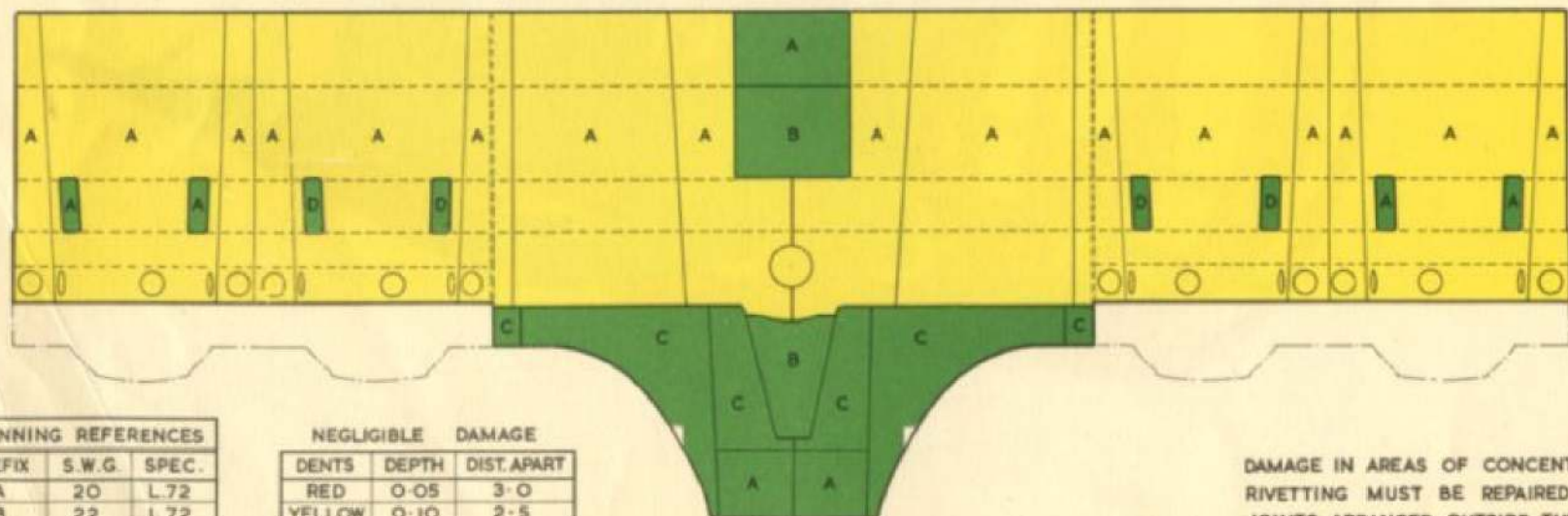
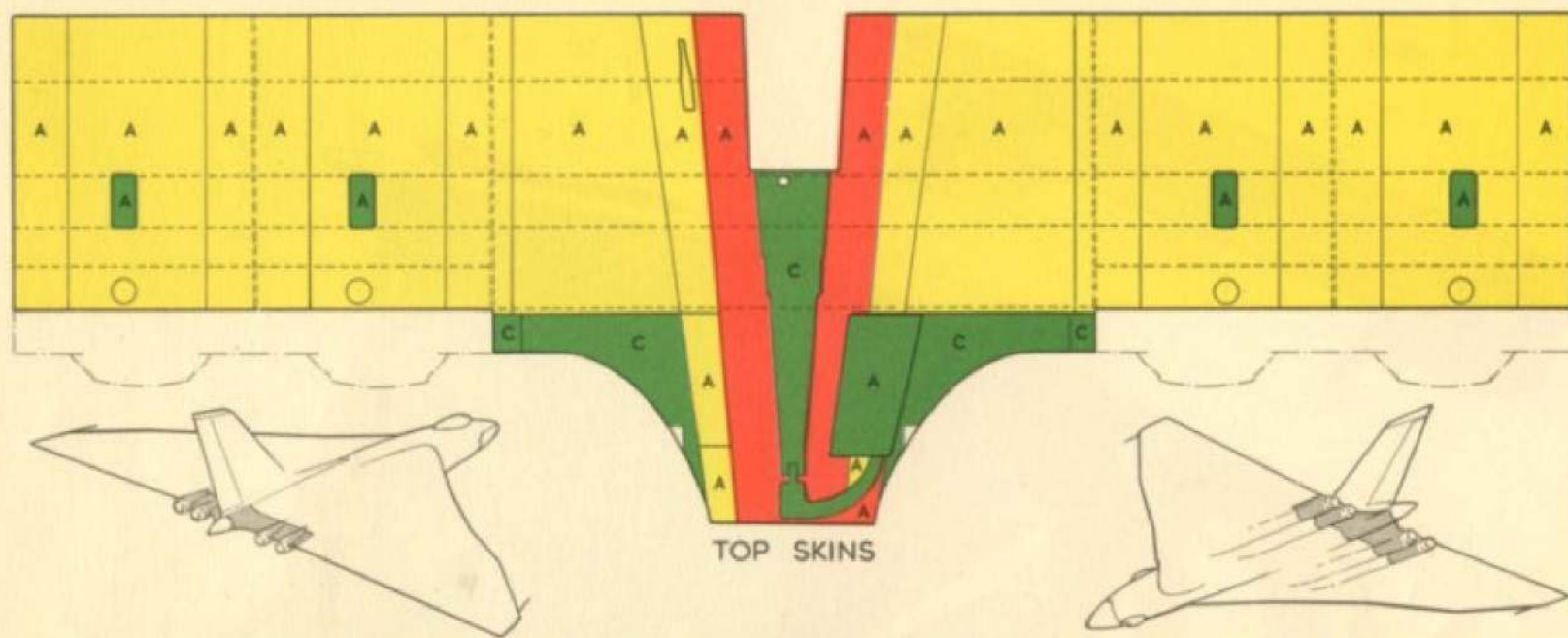


FIG. 216 TAIL PARACHUTE COMPARTMENT - REAR FUSELAGE RESTRICTED



SKINNING REFERENCES		
PREFIX	S.W.G.	SPEC.
A	20	L 72
B	22	L 72
C	24	L 72
D	20	D.T.D. 171.55

NEGLECTIBLE DAMAGE		
DENTS	DEPTH	DIST. APART
RED	0.05	3.0
YELLOW	0.10	2.5
GREEN	0.10	2.5

ALL DIMENSIONS ARE QUOTED IN INCHES

DAMAGE IN AREAS OF CONCENTRATED RIVETTING MUST BE REPAIRED WITH JOINTS ARRANGED OUTSIDE THE AREA

SKIN REPAIRS SEE FIG. 103-104

FIG. 217 REAR SECTION FUSELAGE—SKINNING
RESTRICTED

KEY TO FIG. 218

Item	Material Specification	S.W.G. or Section	Description		Negligible Damage			Repair Figure	
					Dents Depth	Distance Apart	Holes Diameter Pitch Ratio		
1	L72	14	Former 532-5		0-05	4-0	—	—	114
2	L72	14	Reinforcing angle	†	0-05	4-0	—	—	—
3	L72	16	Strap plate		0-05	4-0	—	—	—
4	L72	16	Skin		0-1	4-0	—	—	103
5	L72	20	Former		0-05	4-0	—	—	114
6	L72	20	Joint angle	†	0-05	4-0	—	—	—
7	L72	16	Former		0-05	4-0	—	—	114
8	L72	16	Joint angle	†	0-05	4-0	—	—	—
9	L72	10	Packing	†	—	—	—	—	—
10	L72	20	Gusset	†	0-05	4-0	—	—	—
11	L72	16	Door	†	0-1	4-0	—	—	—
12	L72	20	Reinforcing ring		0-05	4-0	—	—	—
13	L72	16	Door		0-1	4-0	—	—	103
14	L72	22	Reinforcing ring		0-05	4-0	—	—	—

All dimensions are quoted in inches.
 † More expedient to replace than repair.

RESTRICTED

(A.L.9, Mar. 58)

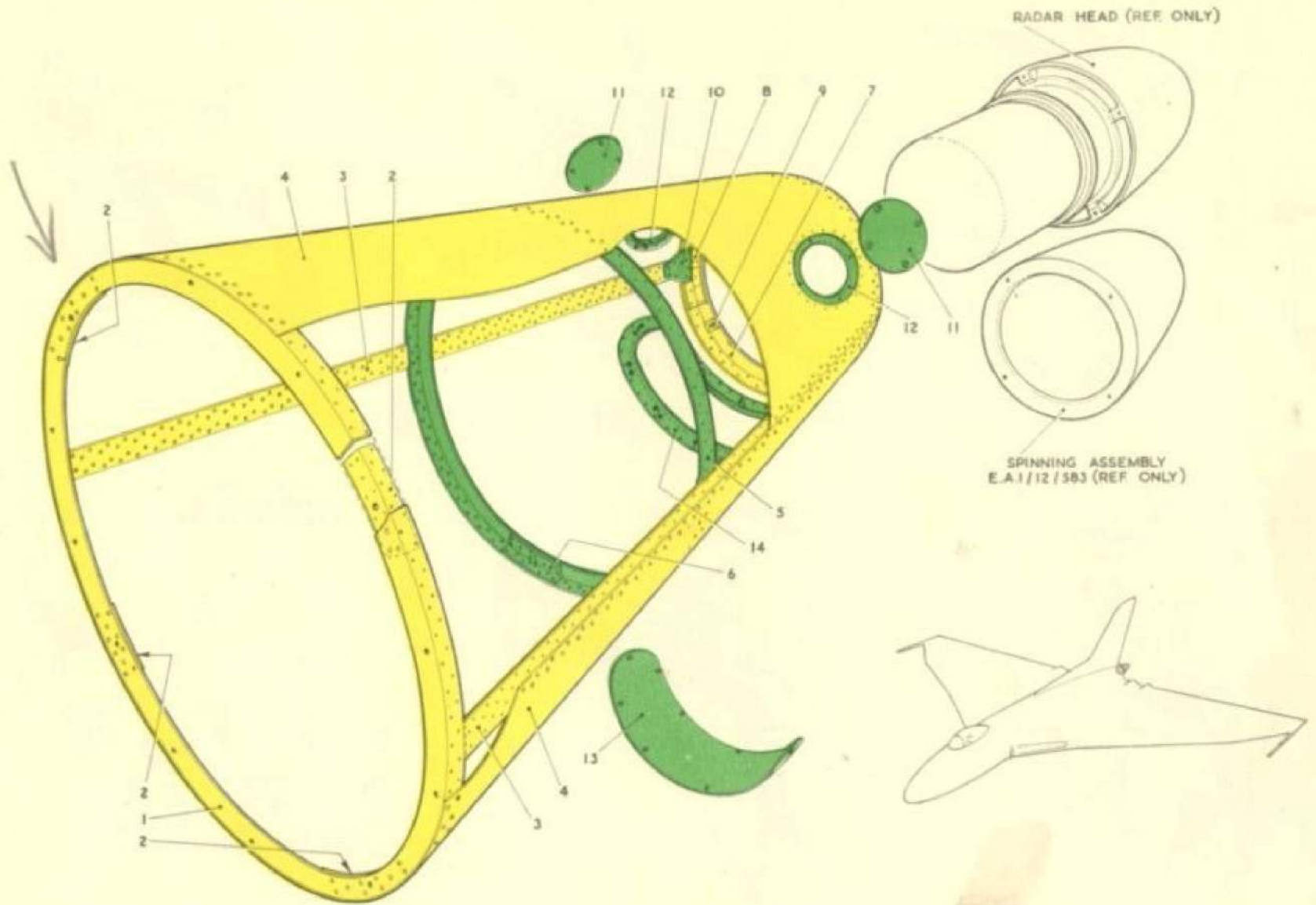


FIG 218. TAIL CONE
RESTRICTED

(AL 9, Mar. 58)

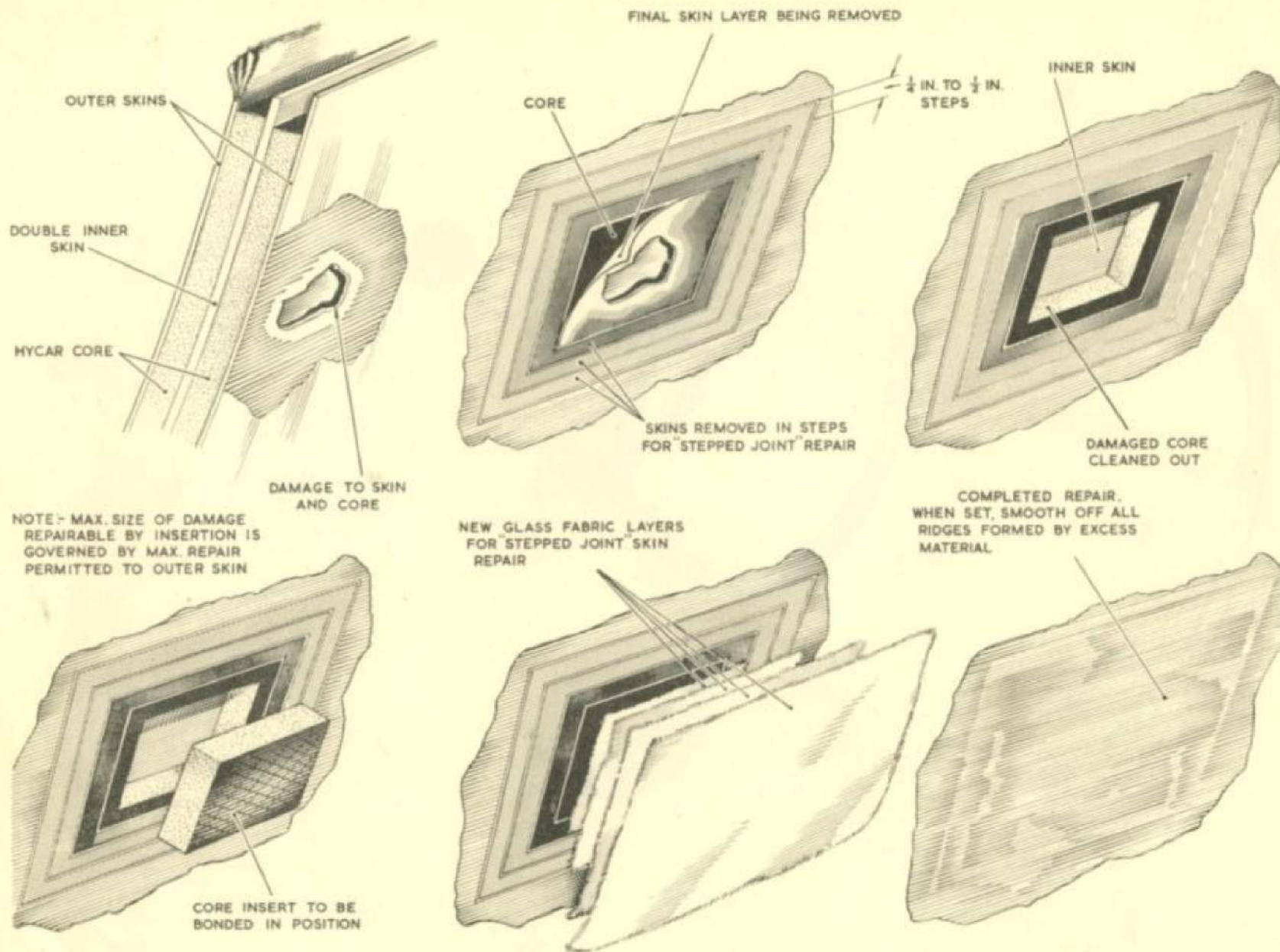


FIG. 219. TYPICAL RADOME REPAIR
RESTRICTED

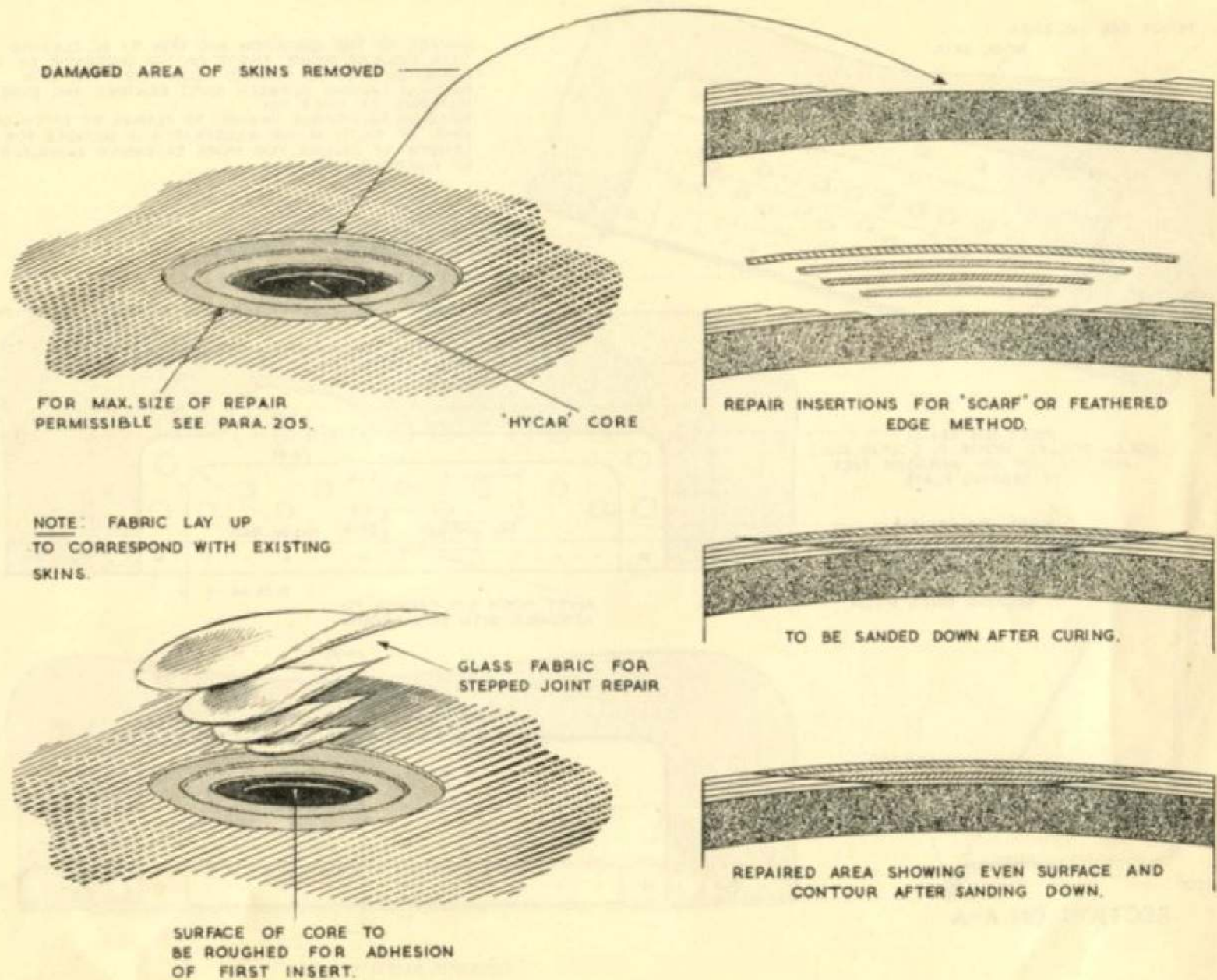


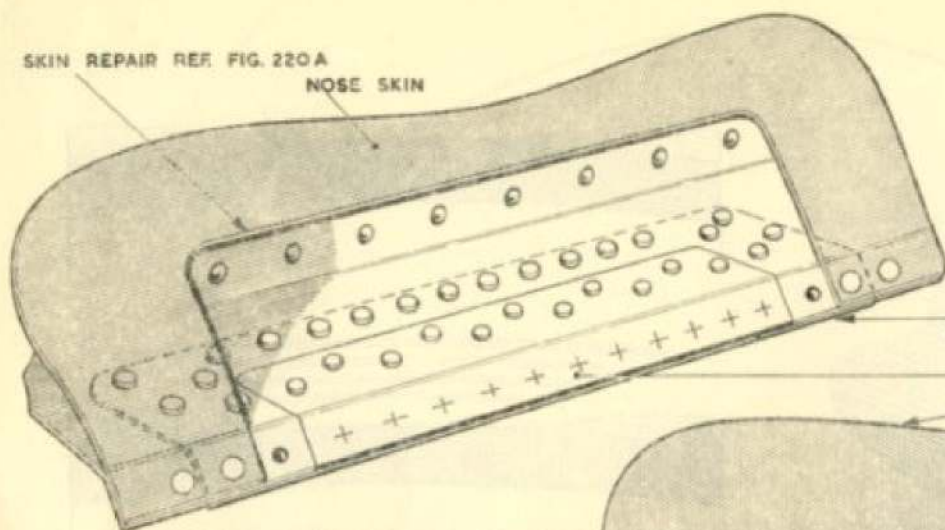
Fig. 219A. Radome repair—inner and outer skins

RESTRICTED

SKIN REPAIR REF. FIG. 220A

NOSE SKIN

DAMAGE TO THE LONGERON AND SKIN TO BE CLEANED OUT TO A REGULAR SHAPE. RIVETS ON THE UNDERSIDE OF THE LONGERON MUST BE FINISHED FLUSH WITH THE SKIN. MINIMUM LANDING BETWEEN RIVET CENTRES AND EDGE OF MATERIAL 2X RIVET DIA. MAXIMUM REPAIRABLE DAMAGE TO FLANGE BY PATCH UP TO 50% OF WIDTH. REPAIR ILLUSTRATED IS SUITABLE FOR ANY LENGTH OF DAMAGE. FOR MORE EXTENSIVE DAMAGE, REPAIR BY INSERTION FIG. 220B



SEATING PLATE 18 SWG SPEC. L72
FITTED ON UNDERSIDE OF LONGERON

FILLER PLATE 18 SWG SPEC. L72

NOSE SKIN

RIVET PITCH -6 IN. APPROX.

0.3 IN. RAD.

RIVET 304 554141
HOLES DRILLED MORSE 21 (.159 IN. DIA.)
AND CSK. 120° ON UNDERSIDE FACE
OF SEATING PLATE

RIVET 404 554141
HOLES DRILLED MORSE 30 (.1285 IN. DIA.)
AND CSK. 120° ON UNDERSIDE FACE
OF SEATING PLATE

EXISTING RIVET PITCH

RIVET PITCH .5 IN. APPROX. TO
ASSEMBLE WITH SKIN REPAIR

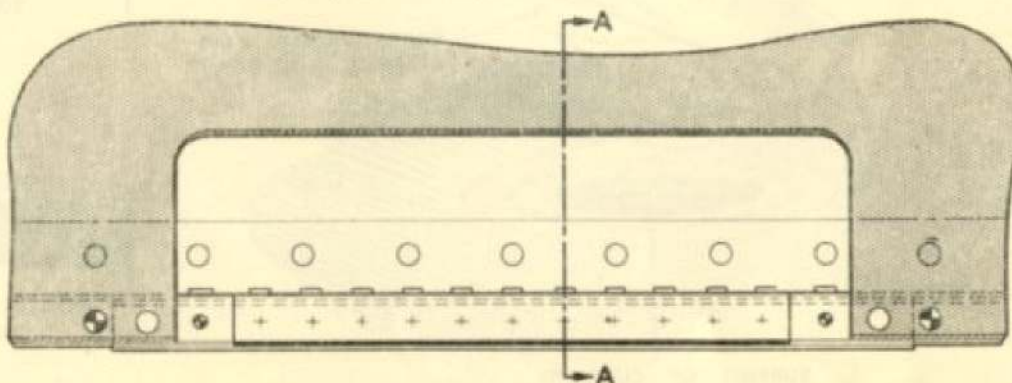
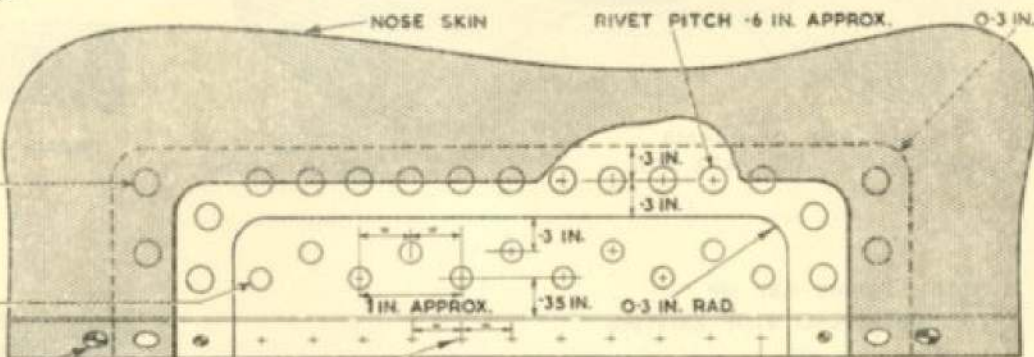
0.25 IN.

CSK 90°-RIVETS
TO BE FINISHED
FLUSH WITH SKIN

CSK. 60°

CSK. 120°

SECTION ON A-A



FINISHED PATCH REPAIR

Fig. 220. Repair to nose longeron flange

RESTRICTED

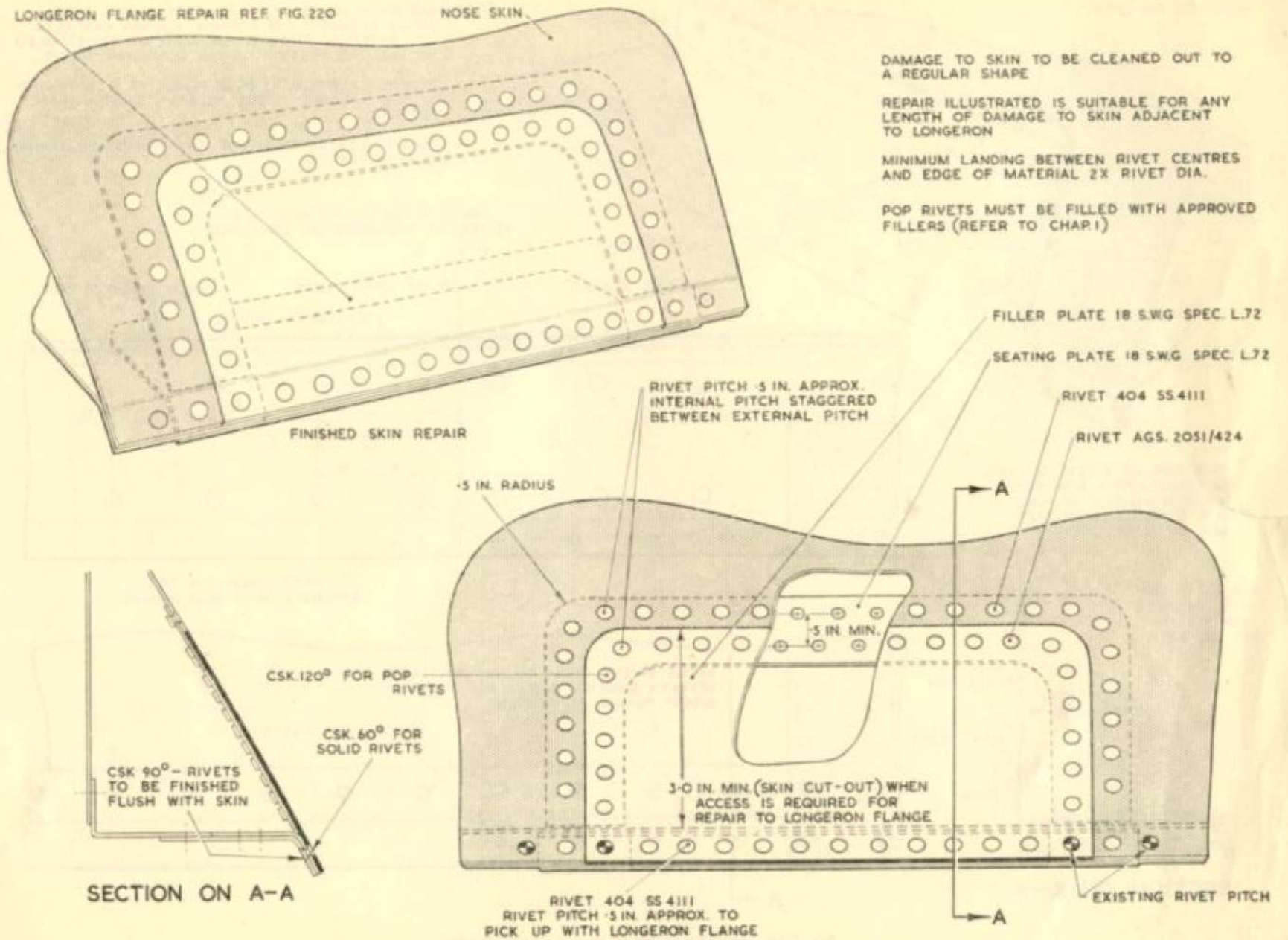
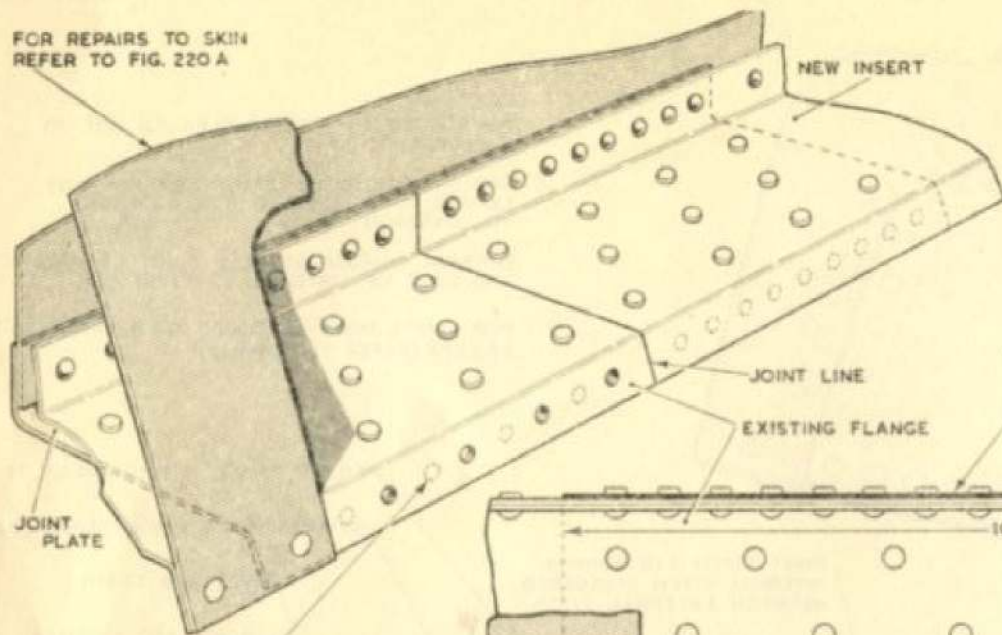


Fig. 220A. Repair to nose longeron skin

RESTRICTED

FOR REPAIRS TO SKIN
REFER TO FIG. 220A



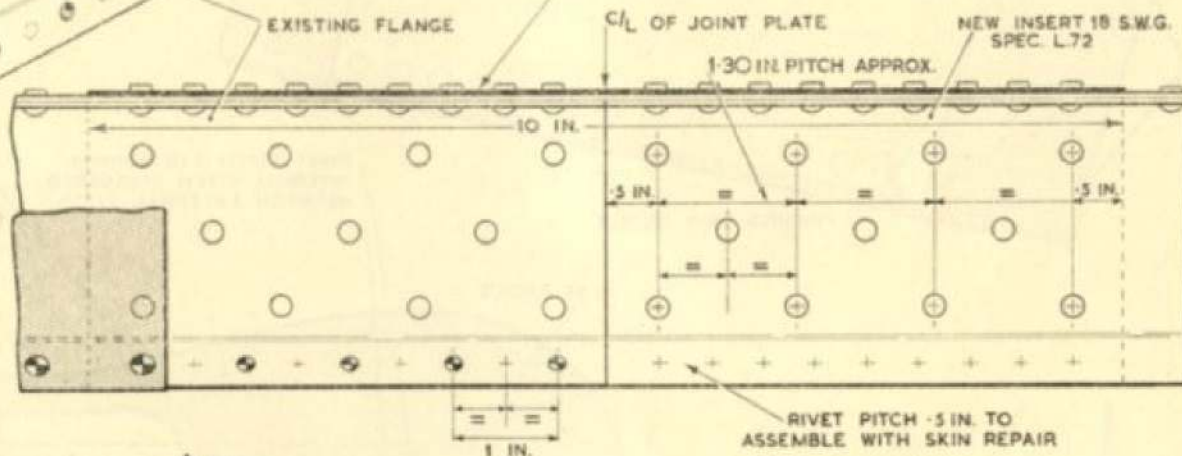
NOTE:- INSERTION JOINTS MUST BE MADE IN THE FREE AREAS BETWEEN THE FORMER STATION BRACKETS. ALL BRACKETS, FITTINGS, ETC., MUST BE REASSEMBLED ON THE NEW PORTION OF THE LONGERON INSERT.

DAMAGED PORTION TO BE REMOVED AS ILLUSTRATED AT C/L OF JOINT I.E. CUT BETWEEN EXISTING RIVET PITCHES.

REPAIR ILLUSTRATED IS FOR ANY DAMAGE EXCEEDING 10 IN. IN LENGTH

THIS ROW OF RIVETS DRILLED IN CONJUNCTION WITH SKIN. MINIMUM NUMBER OF NINE RIVETS REQUIRED AT EACH SIDE OF JOINT LINE

JOINT PLATE 18 S.W.G. SPEC. L72
FITTED ON UNDERSIDE OF LONGERON



CSK. 60° IN SKIN
FOR RIVETS
404 SS4111
REF FIG. 220A

CSK 120° FOR
RIVETS 404 SS4111

RIVETS
AS 2227/405

JOINT PLATE

.8 IN.

.75 IN. .75 IN. .62 IN.

CSK. 90°

SECTION ON A-A

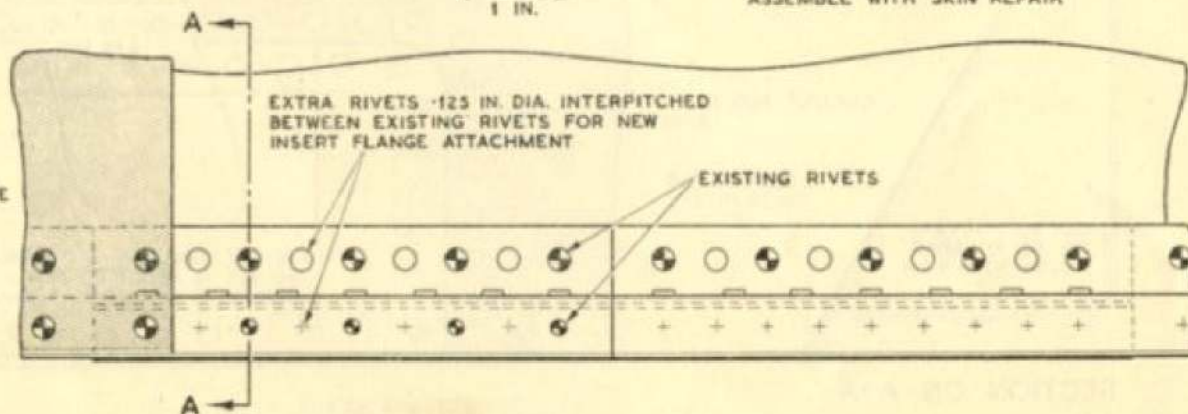


Fig. 220B. Insertion joint to nose longeron flange

RESTRICTED

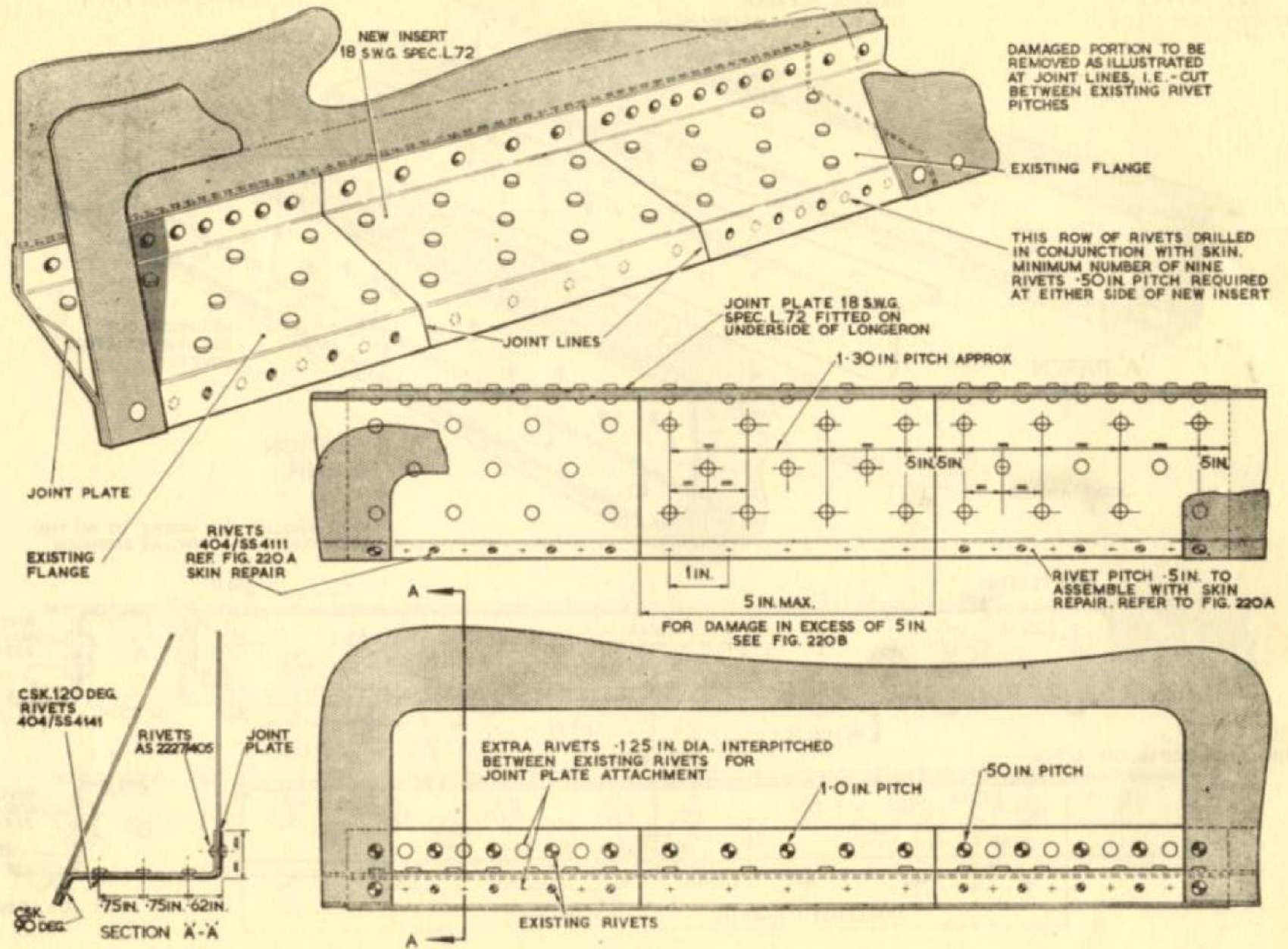


Fig. 220C. Patch insertion repair — nose longeron

RESTRICTED

582 551793
20 S.W.G. ALUM ALLOY
SPEC. D.T.D.687

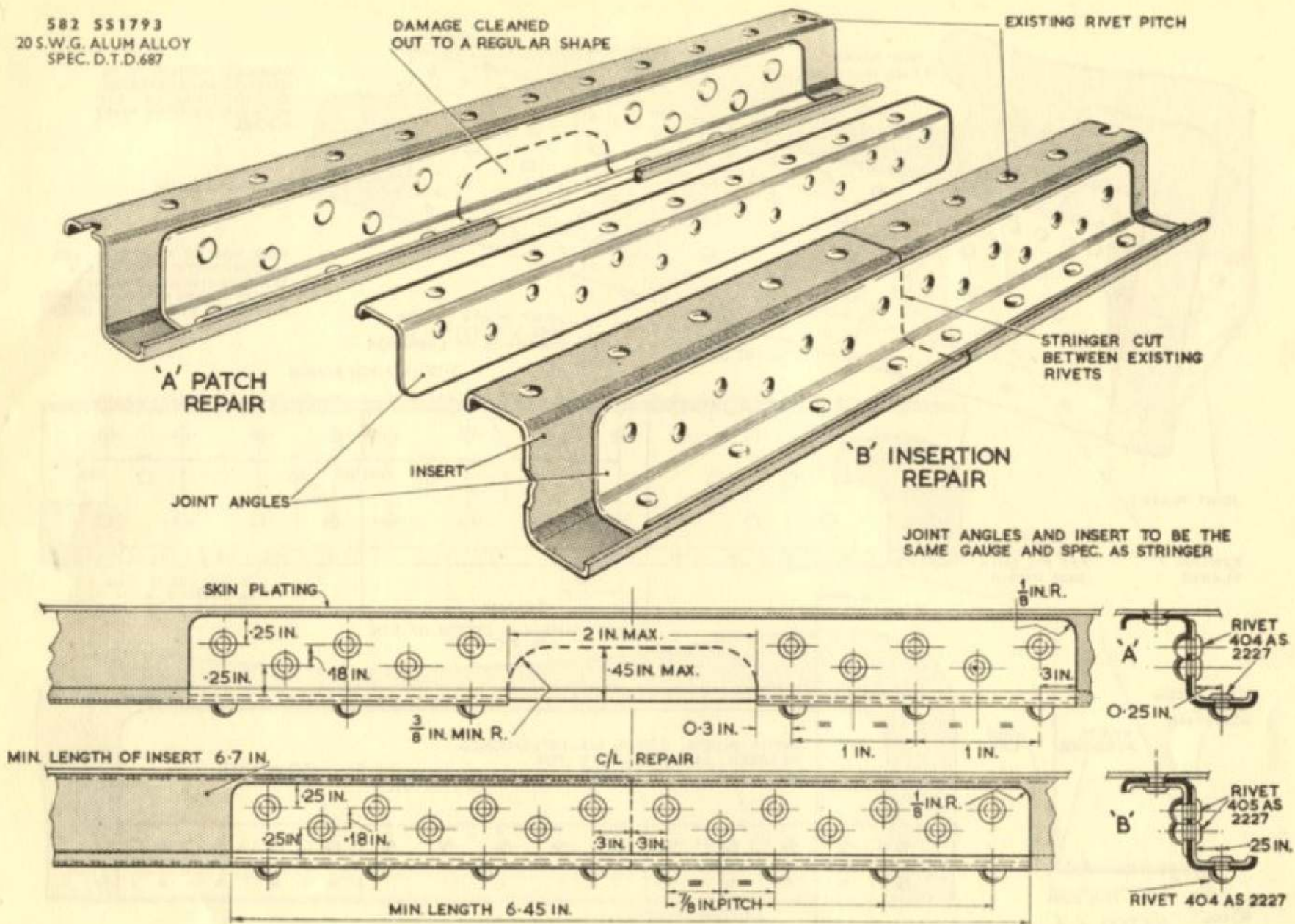


Fig. 221. Patch and insertion repairs to 'Z' section stringers

RESTRICTED

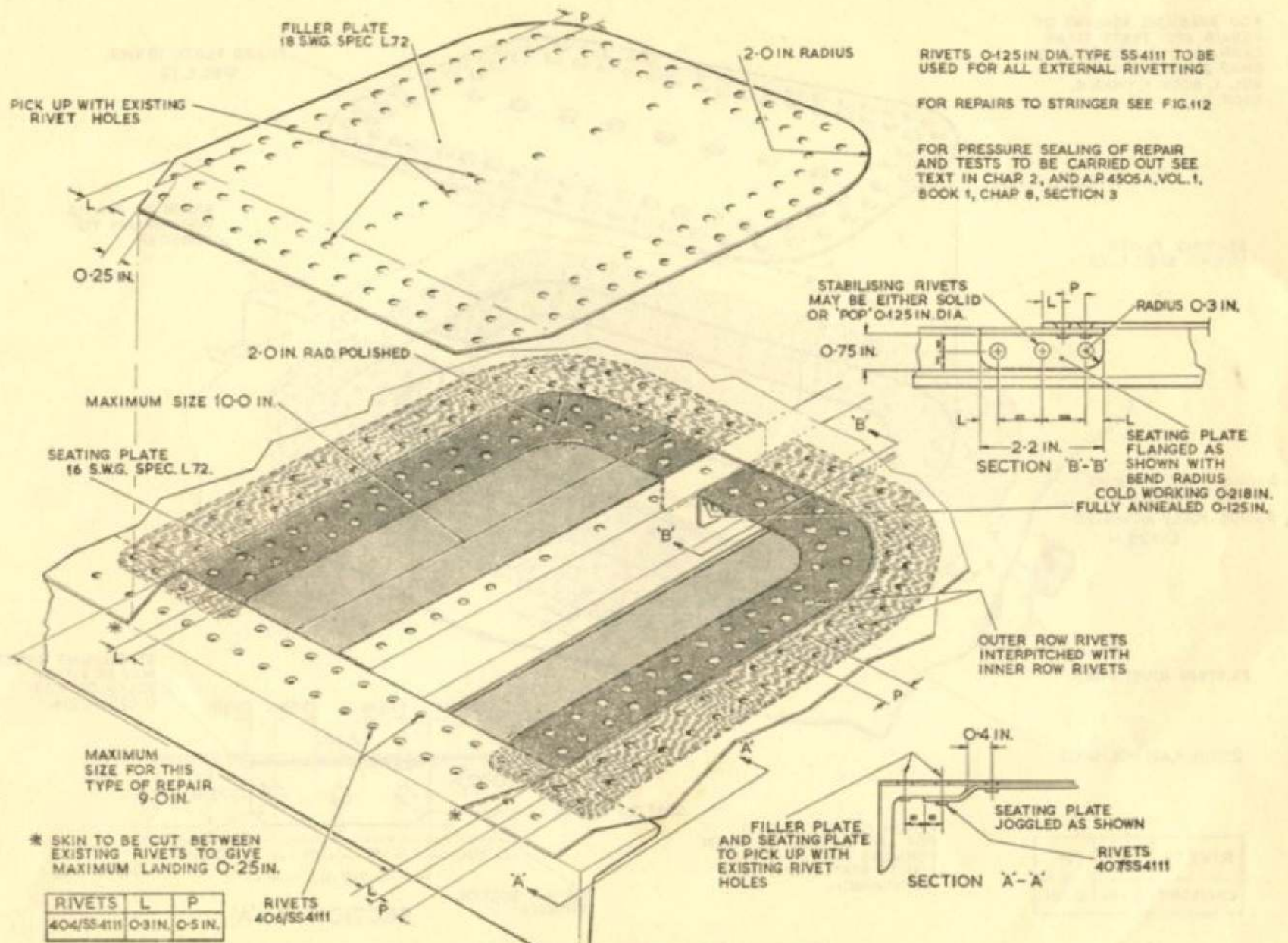
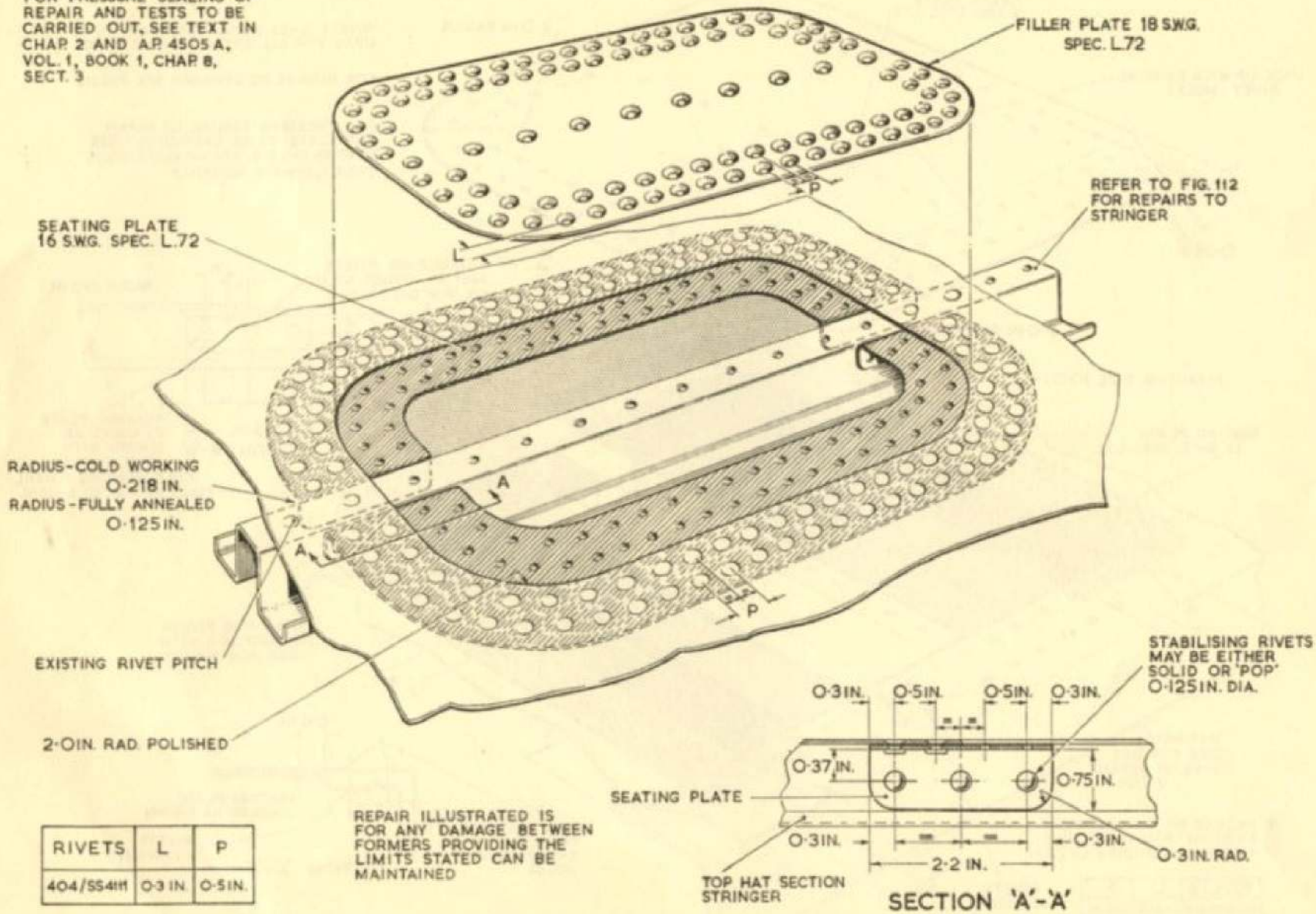


Fig. 222. Skin repair—pressurised fuselage—transport joint

RESTRICTED

FOR PRESSURE SEALING OF
REPAIR AND TESTS TO BE
CARRIED OUT, SEE TEXT IN
CHAP 2 AND AP 4505 A,
VOL. 1, BOOK 1, CHAP 8,
SECT. 3



RIVETS	L	P
404/SS4H	O.3 IN.	O.5 IN.

REPAIR ILLUSTRATED IS
FOR ANY DAMAGE BETWEEN
FORMERS PROVIDING THE
LIMITS STATED CAN BE
MAINTAINED

Fig. 222A. Skin repairs—pressurised fuselage

RESTRICTED

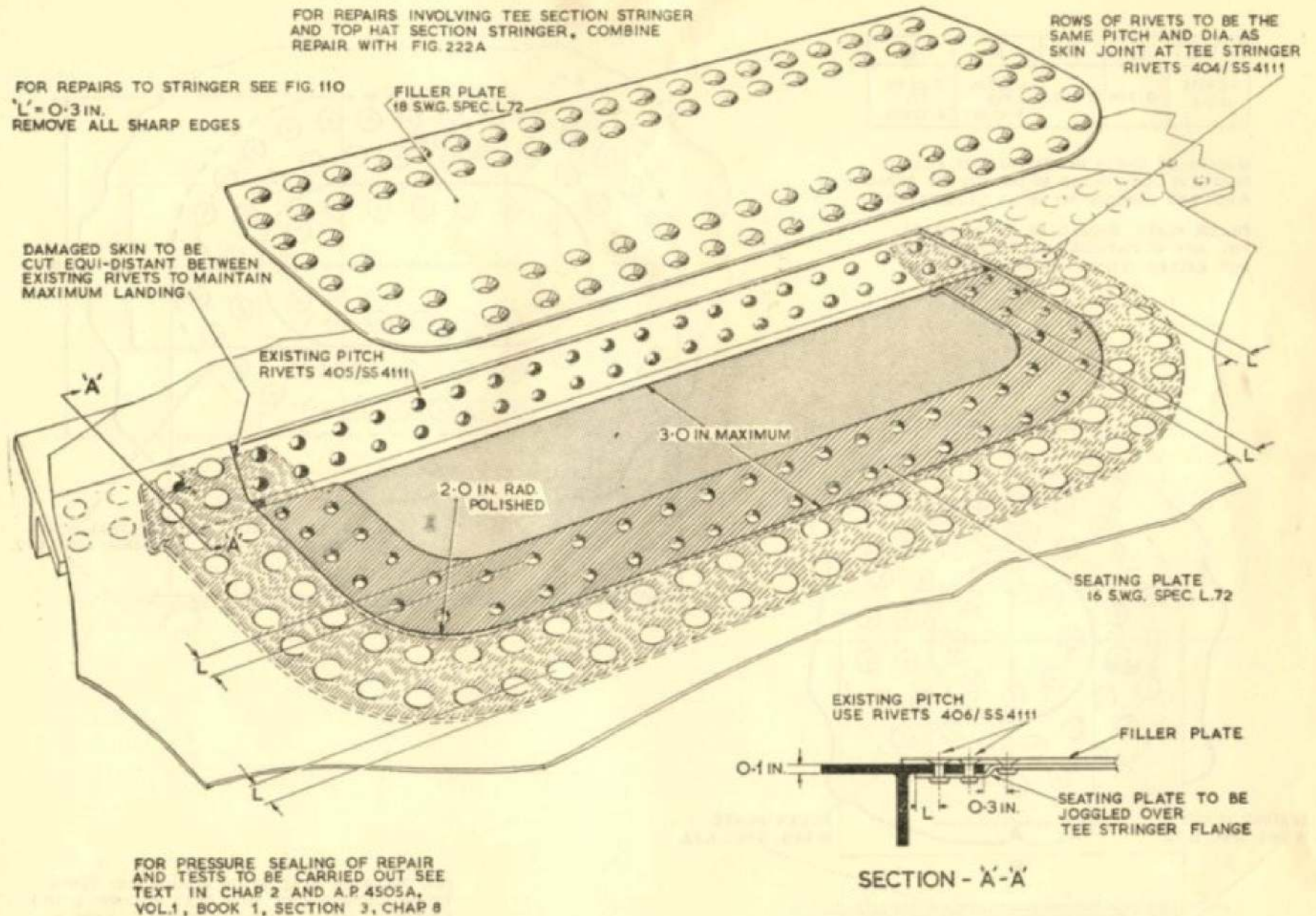
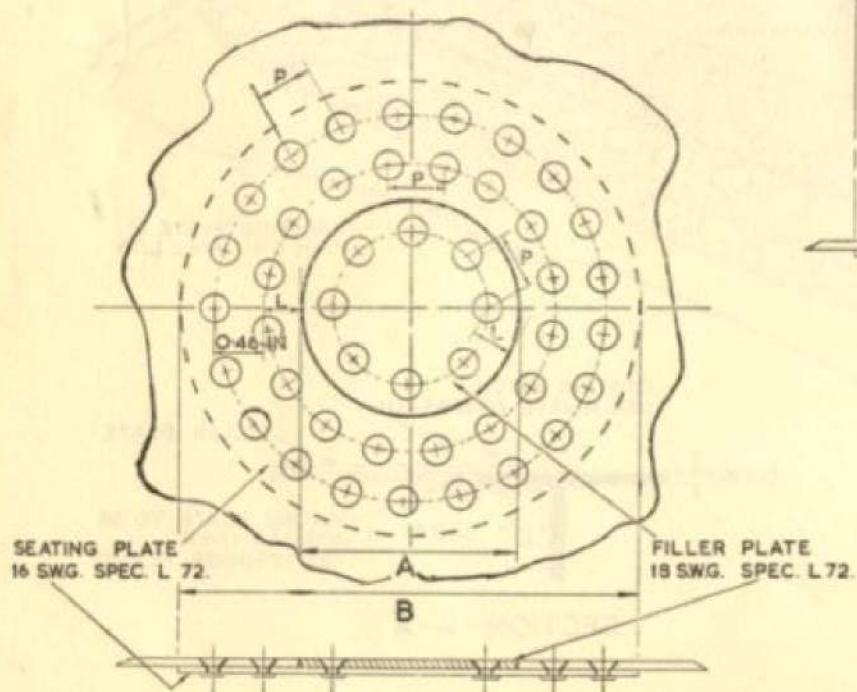
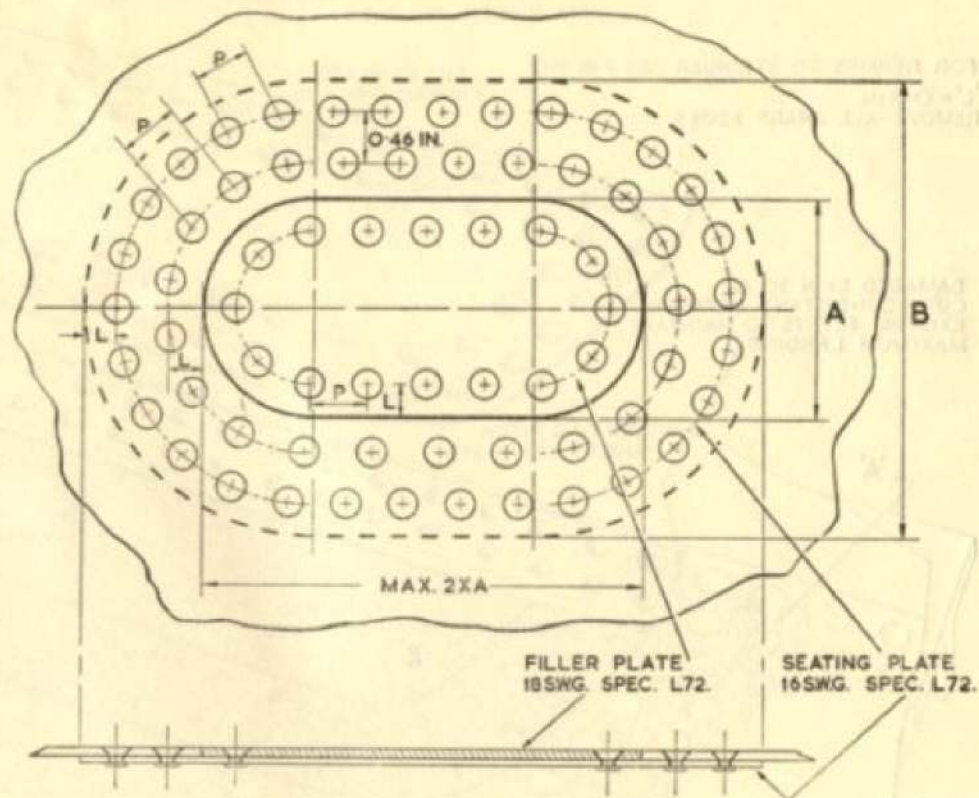


Fig. 222B. Skin repair at 'T' stringer—pressurised fuselage

RIVET	L	P	A	B
SS4111 404	0.3 IN	0.5 IN	1.125 IN. TO 2.0 IN.	3.25 IN. TO 4.125 IN.

NUMBER OF RIVETS IN SEATING AND FILLER PLATES IS CONTROLLED BY THE SIZE OF REPAIR. PITCH AND LANDING TO BE AS ILLUSTRATED.

FILLER PLATE SHOULD BE AN ACCURATE FIT. ANY DEVIATIONS IN CONTOUR SHOULD NOT EXCEED 0.03 IN. AT ANY ONE POINT.



FOR PRESSURE SEALING OF REPAIR AND TESTS TO BE CARRIED OUT SEE TEXT IN CHAP 2 AND A.P. 4505A, VOL. I, BOOK I, SECTION 3, CHAP 8.

Fig. 222C. Skin repairs—pressurised fuselage—free areas

RESTRICTED

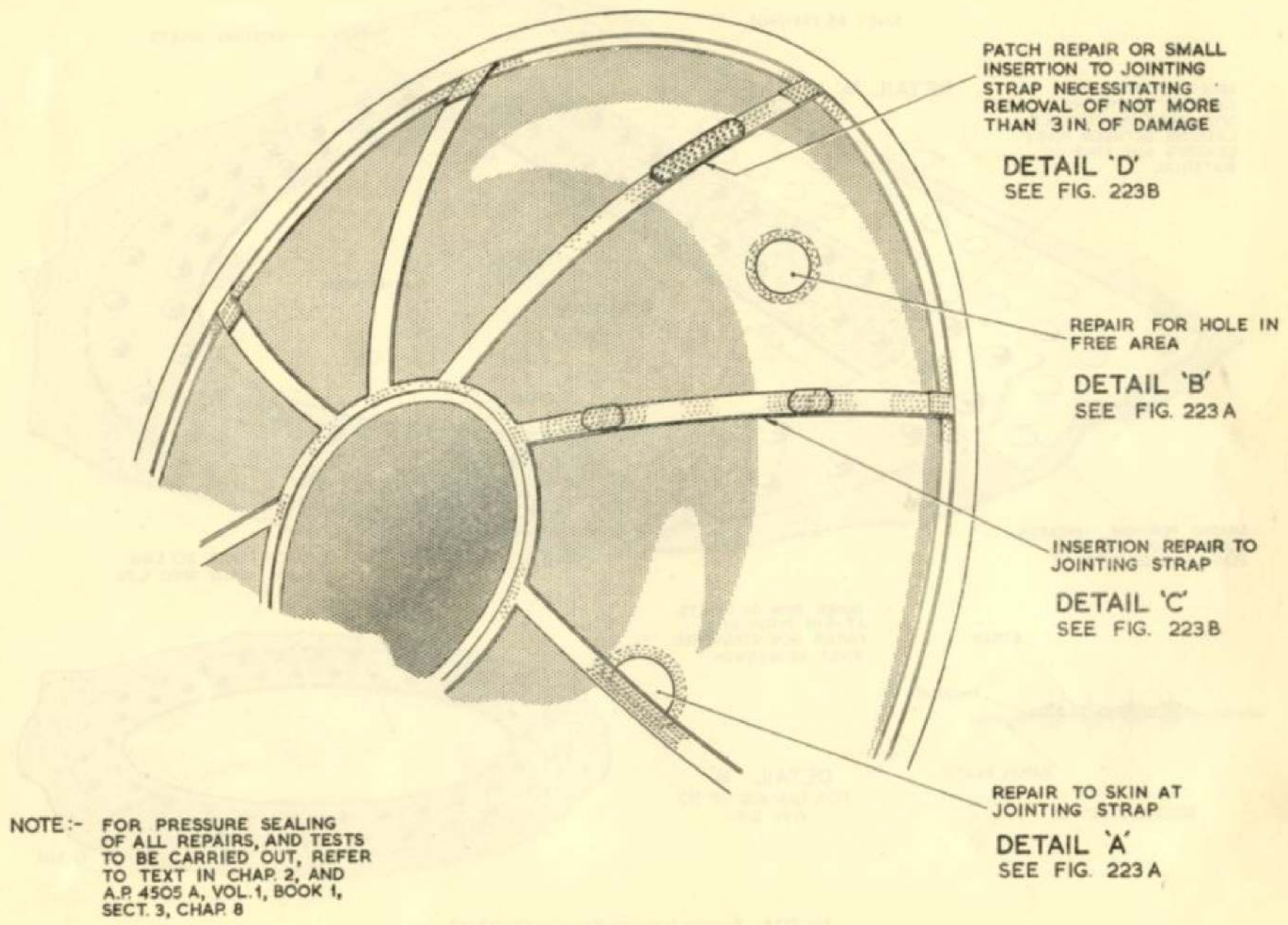


Fig. 223. Repairs to forward pressure bulkhead

RESTRICTED

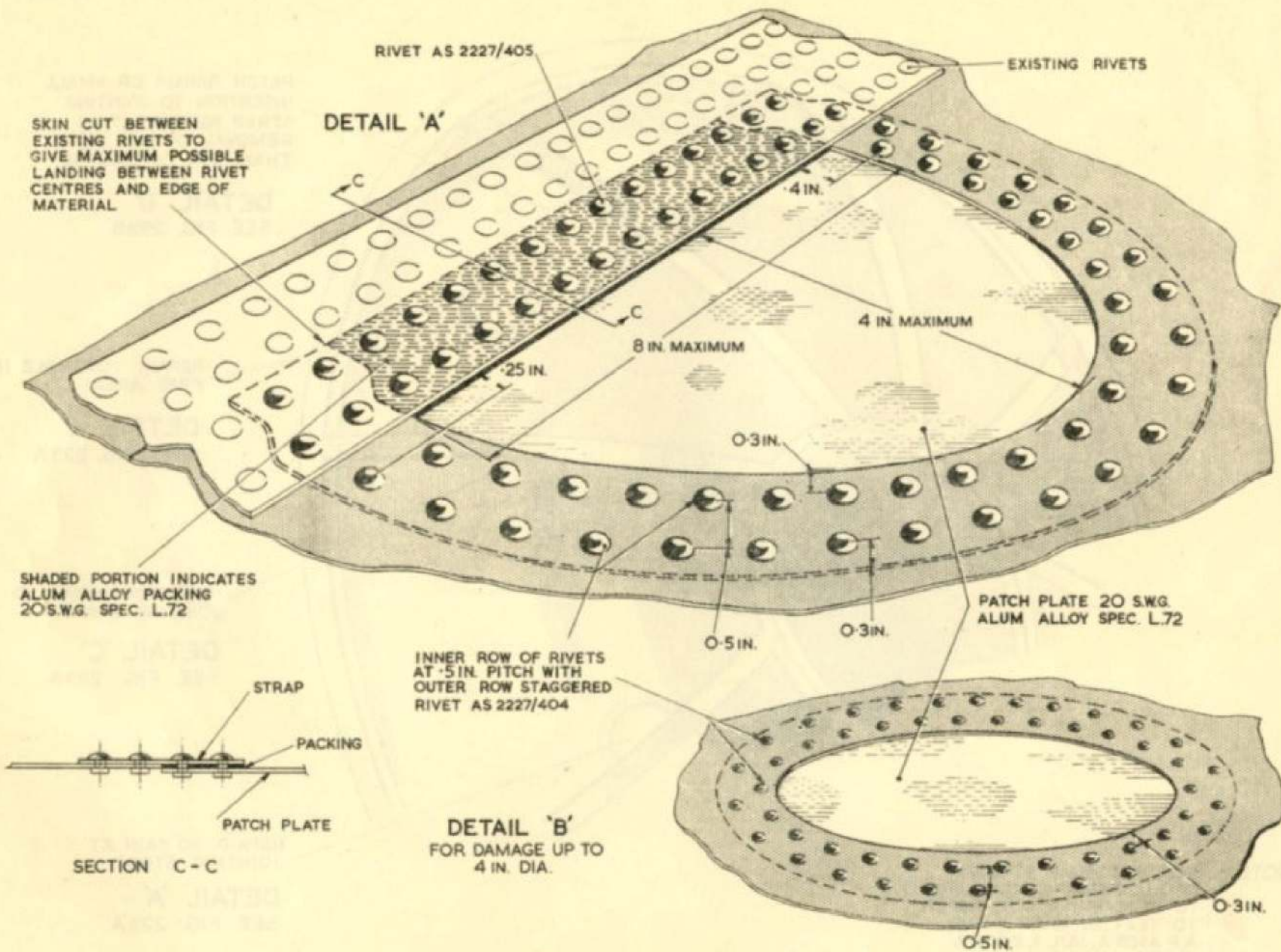


Fig. 223A. Repairs to forward pressure bulkhead

RESTRICTED

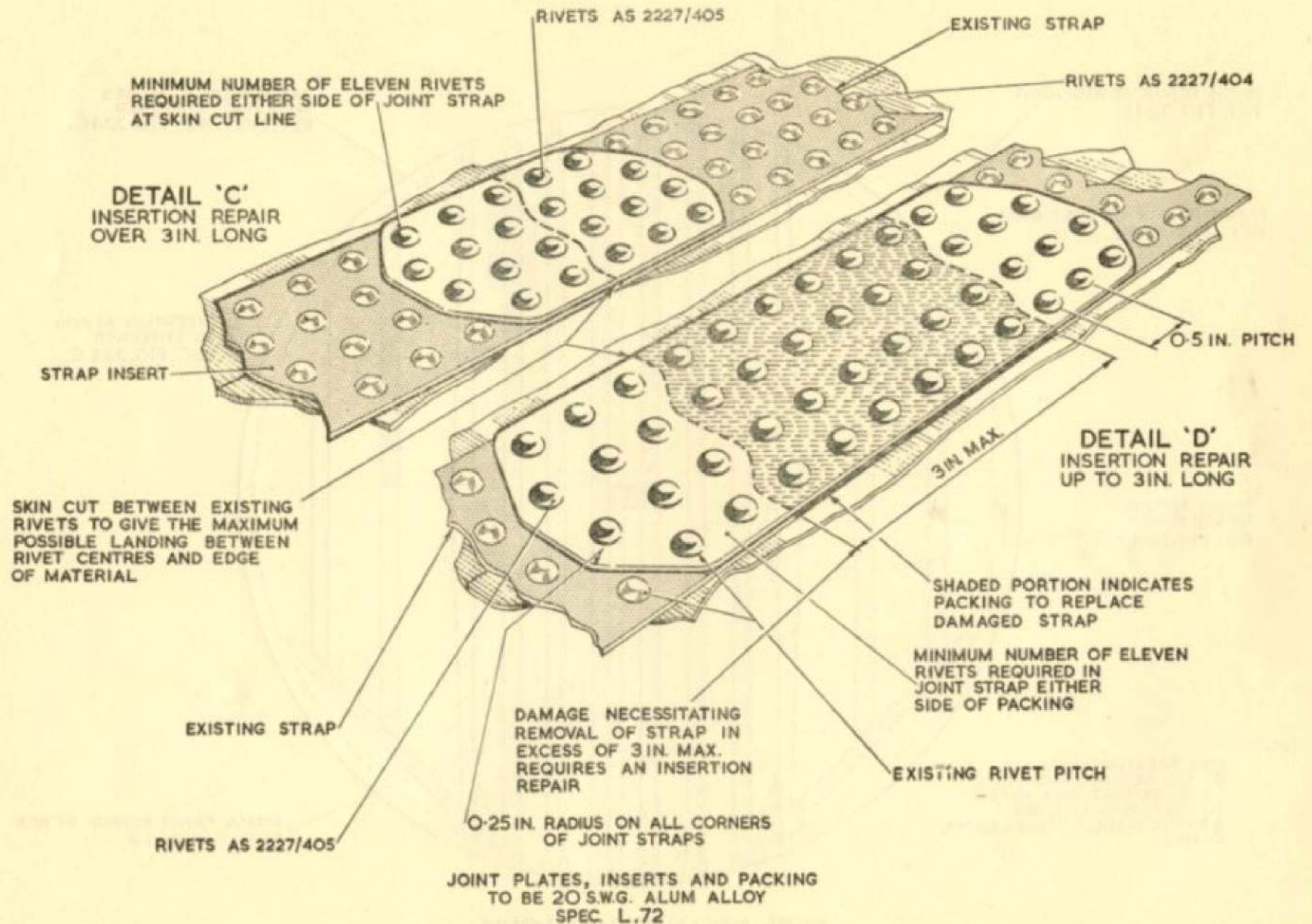


Fig. 223B. Repairs to forward pressure bulkhead

RESTRICTED

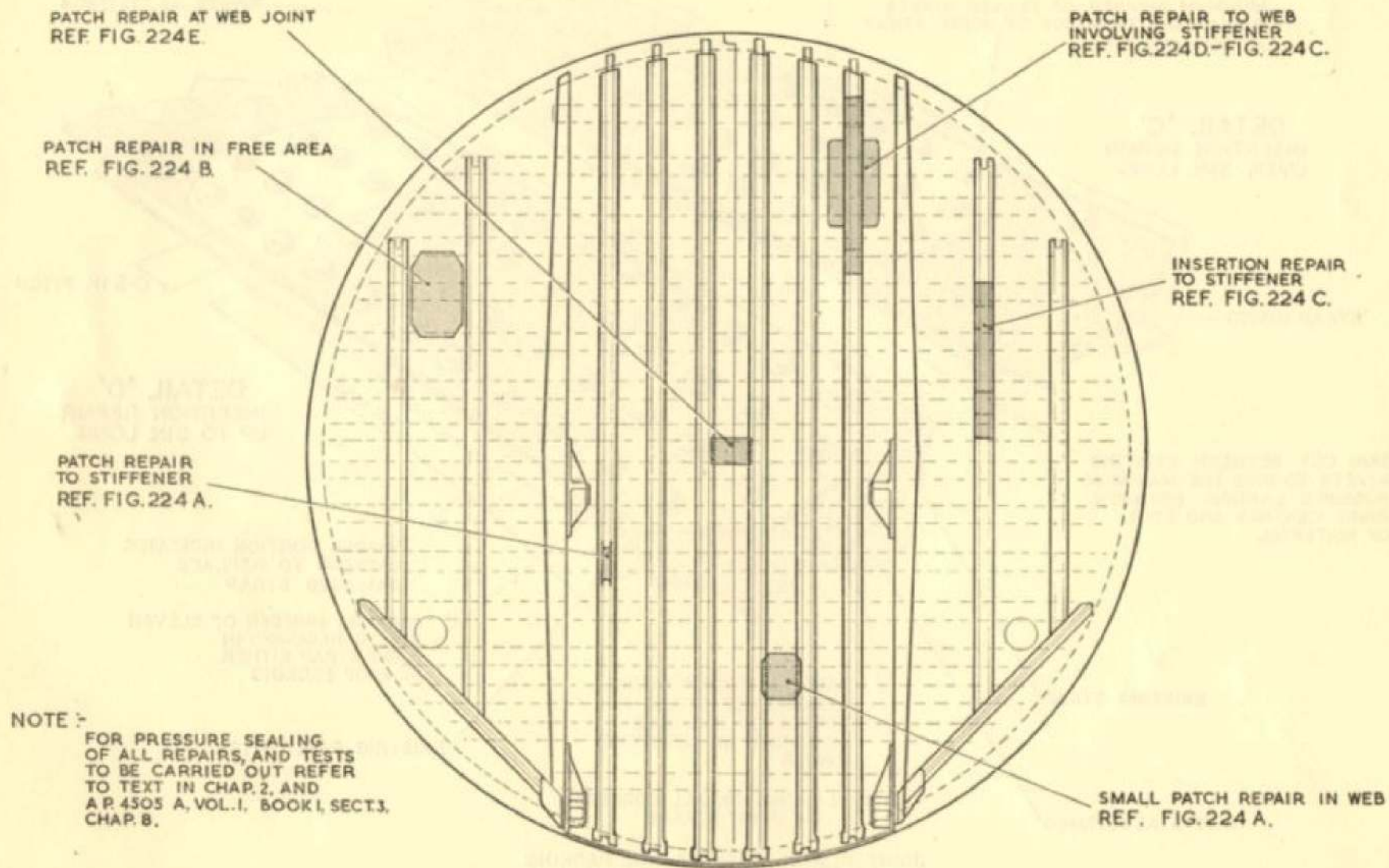


Fig. 224. Repairs to rear pressure bulkhead

CLEAN OUT DAMAGE TO GIVE THE LARGEST POSSIBLE CORNER RADIUS. ALL RIVETS ARE 0.187 IN. DIA. APPROX. 1.0 IN. PITCH. DRILL PACKING AND PATCH PLATE TO PICK-UP WITH EXISTING STIFFENERS. ADDITIONAL RIVETS TO BE STAGGERED. MINIMUM LANDING BETWEEN RIVET CENTRES AND EDGE OF MATERIAL 0.37 IN.

PATCH PLATE 14 SWG. SPEC. L.72 RADIUS ON ALL CORNERS 0.37 IN.

PACKING PLATE 16 SWG. SPEC. L.72 RADIUS ON ALL CORNERS 0.37 IN.

RIVETS AG.S.2050/639

RIVETS AS.2227/608

RIVETS AS.2227/607

MIN. 0.5 IN RADIUS POLISHED

REPAIR ILLUSTRATED IS SUITABLE FOR ANY LENGTH OF DAMAGE

MAX DEPTH ALLOWED 1.0 IN.

MINIMUM NUMBER OF 18 RIVETS TO BE FITTED IN EITHER END OF REPAIR PATCH

ALL RIVETS 0.187 IN. DIA. TYPE AG.S.2050/624 FITTED AT APPROX. 0.75 IN. PITCH

MIN. LANDING BETWEEN RIVET CENTRES AND EDGE OF MATERIAL 0.37 IN.

REPAIR PATCH 16 S.W.G. SPEC L72

0.25 IN. RAD.

ALL CORNERS 0.37 IN. RADIUS

REPAIR ILLUSTRATED IS TO BE USED FOR ANY SIZE OF SMALL DAMAGE IN THE WEB BETWEEN TWO STIFFENERS. PROVIDING THE LIMITS STATED CAN BE MAINTAINED

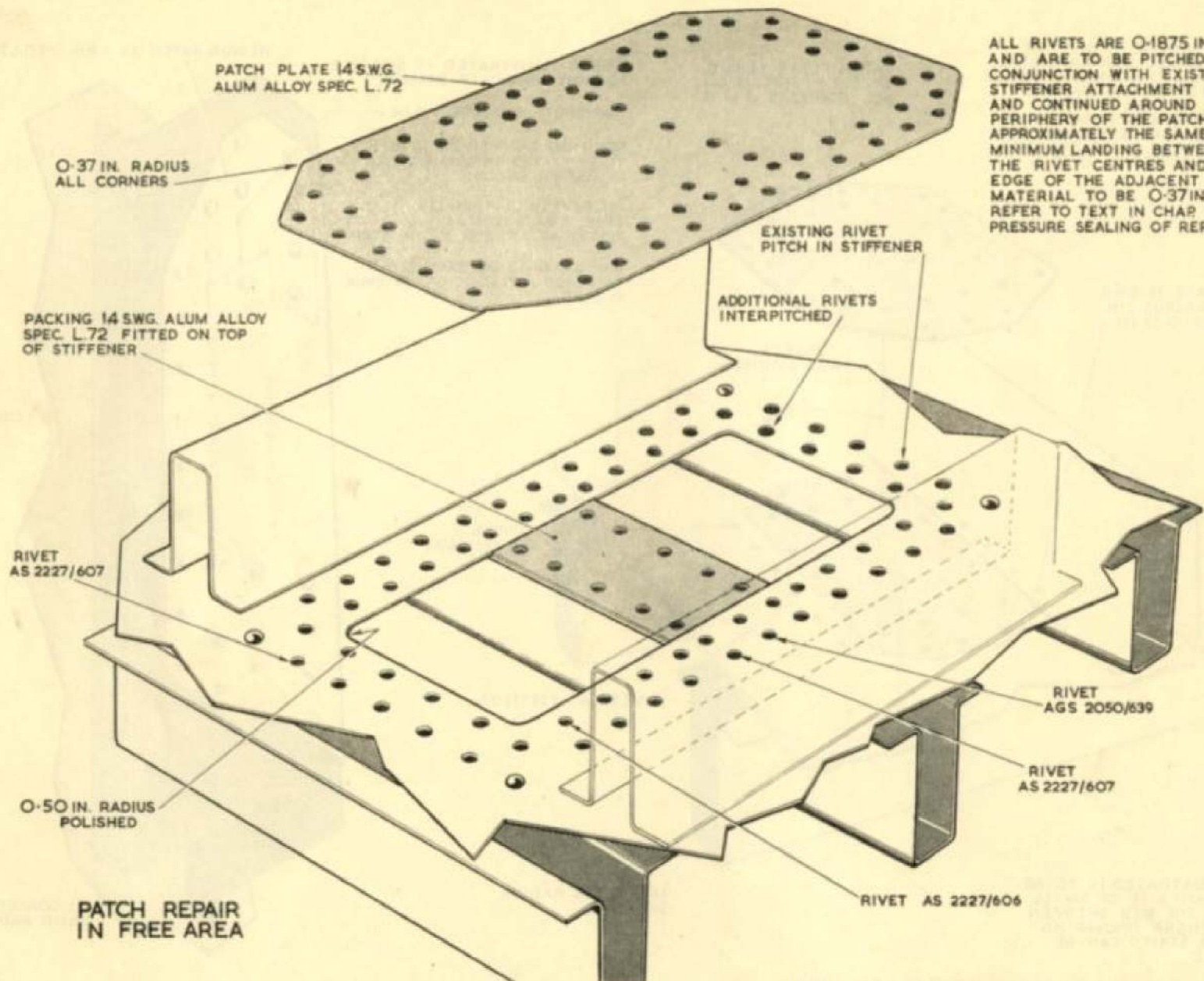
SMALL PATCH REPAIR ON WEB

PATCH REPAIR TO STIFFENER

Fig. 224A. Rear pressure bulkhead repairs

RESTRICTED

(A.L.3, Aug. 57)



ALL RIVETS ARE 0.1875 IN DIA AND ARE TO BE PITCHED IN CONJUNCTION WITH EXISTING STIFFENER ATTACHMENT RIVETS, AND CONTINUED AROUND THE PERIPHERY OF THE PATCH AT APPROXIMATELY THE SAME PITCH. MINIMUM LANDING BETWEEN THE RIVET CENTRES AND THE EDGE OF THE ADJACENT MATERIAL TO BE 0.37 IN. REFER TO TEXT IN CHAP 2 FOR PRESSURE SEALING OF REPAIR

Fig. 224B. Repairs to rear pressure bulkhead

RESTRICTED

NOTE - MINIMUM NUMBER OF RIVETS FITTED IN JOINT CHANNELS AT INSERTION JOINT TO BE AS ILLUSTRATED

REFER TO TEXT IN CHAP.2 FOR PRESSURE SEALING OF REPAIR

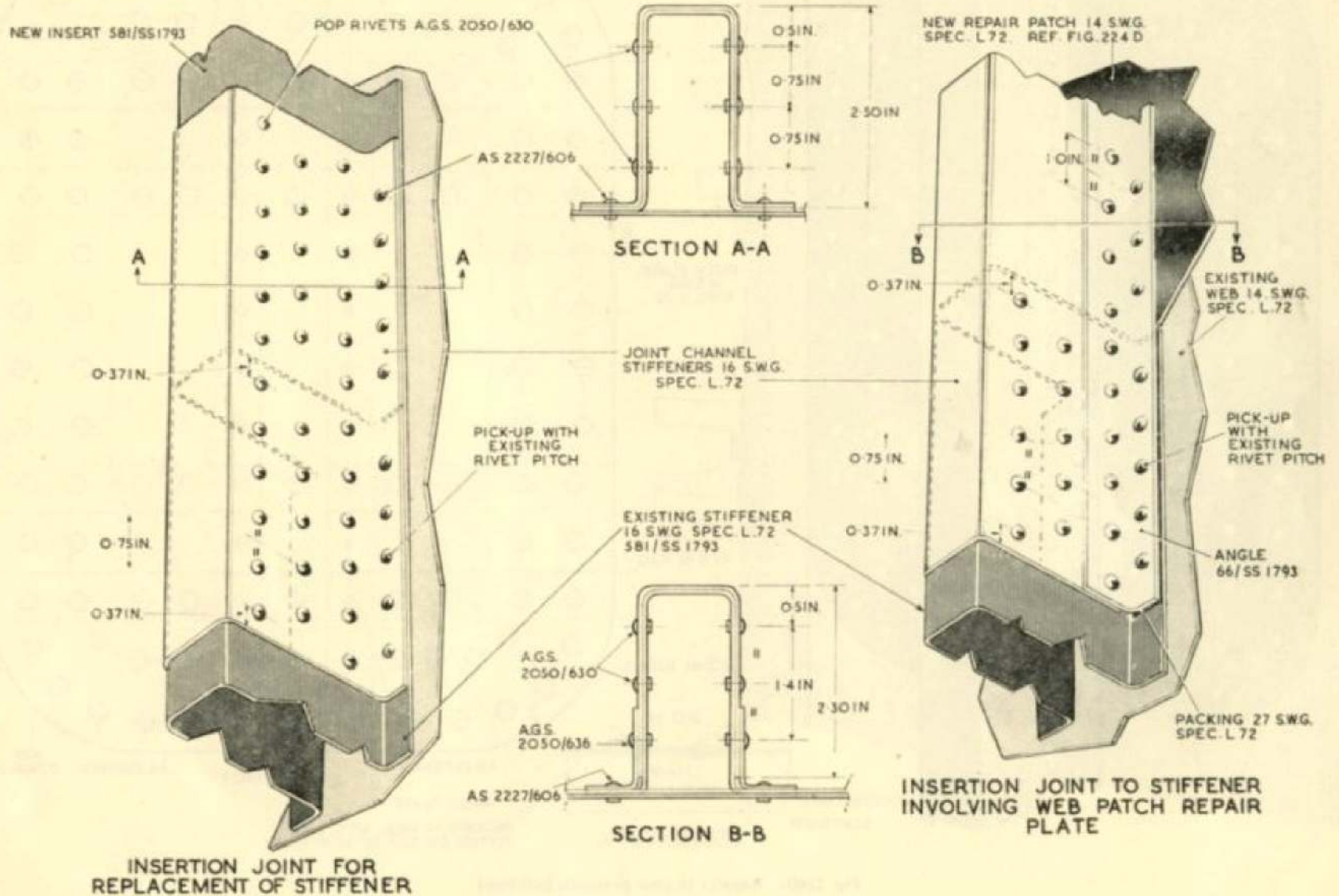


Fig. 224C. Repairs to rear pressure bulkhead

RESTRICTED

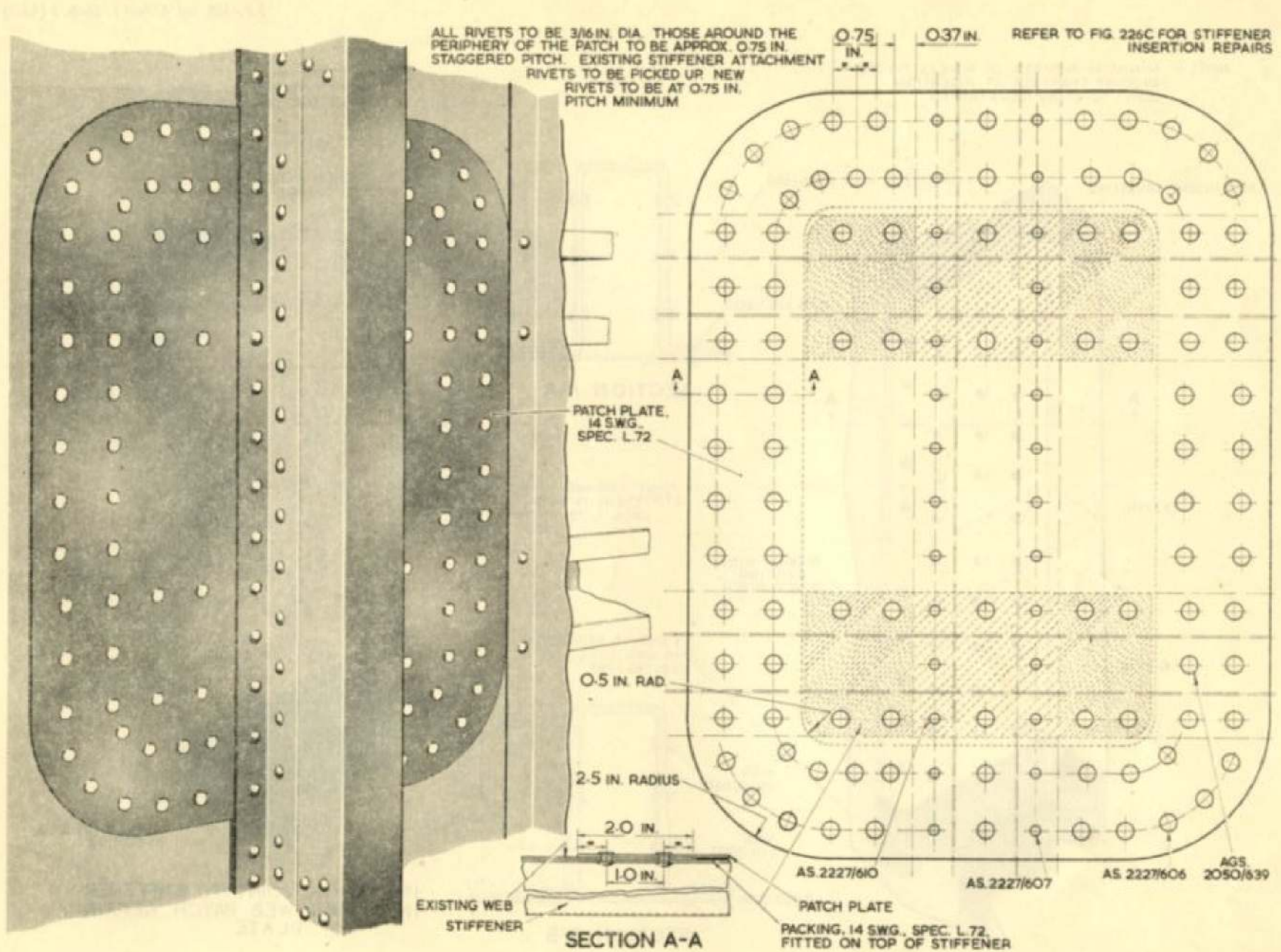


Fig. 224D. Repairs to rear pressure bulkhead

RESTRICTED

REPAIR INSTRUCTIONS

CLEAN OUT DAMAGE TO GIVE THE LARGEST POSSIBLE CORNER RADIUS. ALL RIVETS ARE 0.187 IN. DIA. MINIMUM PITCH 0.7 IN. DRILL OUT SPOT WELDS WHERE REPAIR PLATES ARE TO BE FITTED. DRILL PACKING AND PATCH PLATE TO PICK UP WITH EXISTING STIFFENERS. ADDITIONAL RIVETS TO BE STAGGERED. MINIMUM LANDING BETWEEN RIVET CENTRES AND EDGE OF MATERIAL $L = 0.37$ IN.

ALL SHARP EDGES TO BE REMOVED AND DAMAGED PORTION OF WEB TO BE POLISHED AFTER CLEANING OUT DAMAGE

FOR PRESSURE SEALING OF REPAIR AND TESTS TO BE CARRIED OUT SEE TEXT IN CHAP. 1 AND 2, AND A.P.4505A, VOL. 1, BOOK 1, SECT. 3, CHAP. 8.

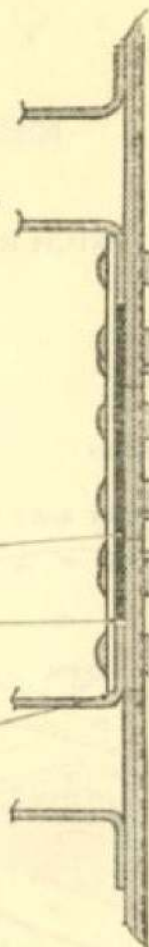
PACKING PLATE

PATCH PLATE

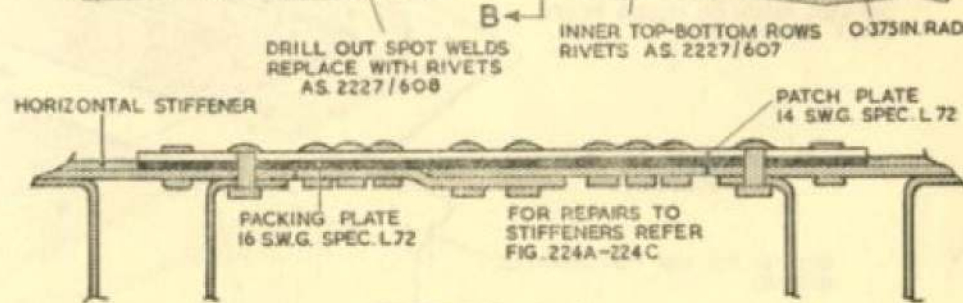
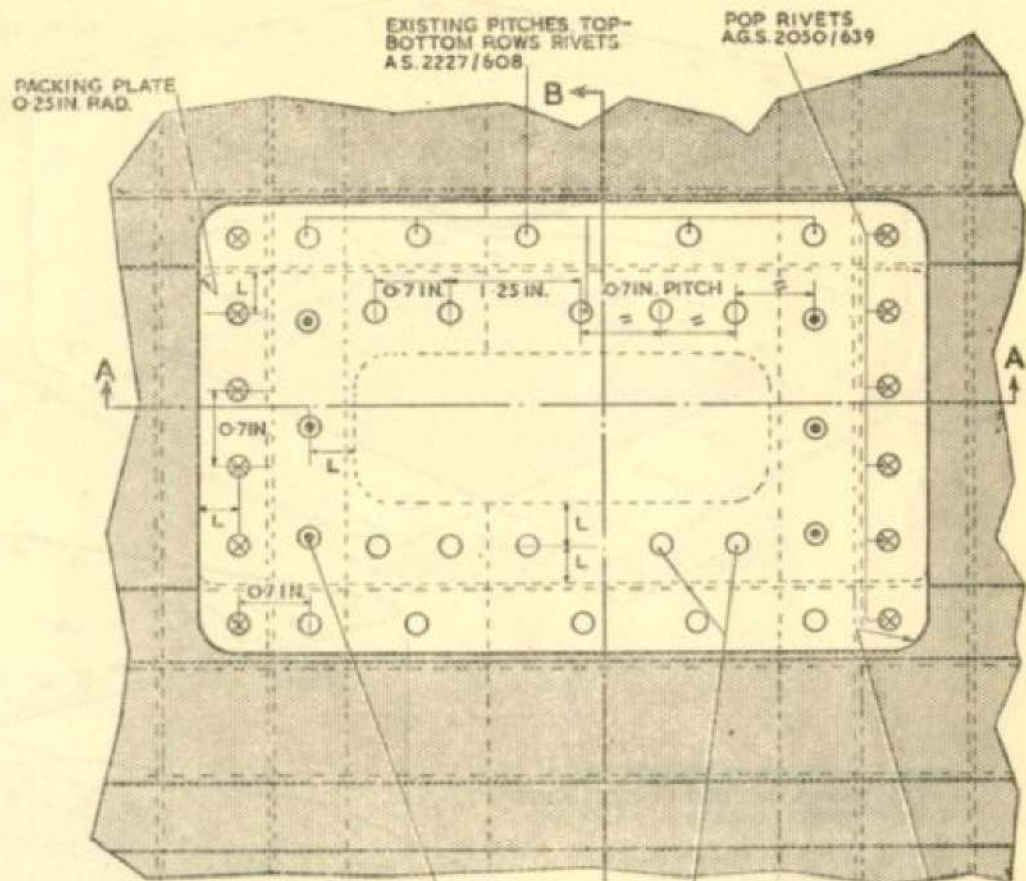
RADIUS CORNERS OF PATCH PLATE

- ⊙ - SPOT WELDS
- ⊗ - POP RIVETS
- - SOLID RIVETS

REPAIR ILLUSTRATED IS TO BE USED FOR ANY SIZE OF SMALL DAMAGE THROUGH THE WEB BETWEEN TWO STIFFENERS, PROVIDING THE LIMITS STATED CAN BE MAINTAINED



SECTION B-B



SECTION A-A

Fig. 224E. Repairs to rear pressure bulkhead—web joint

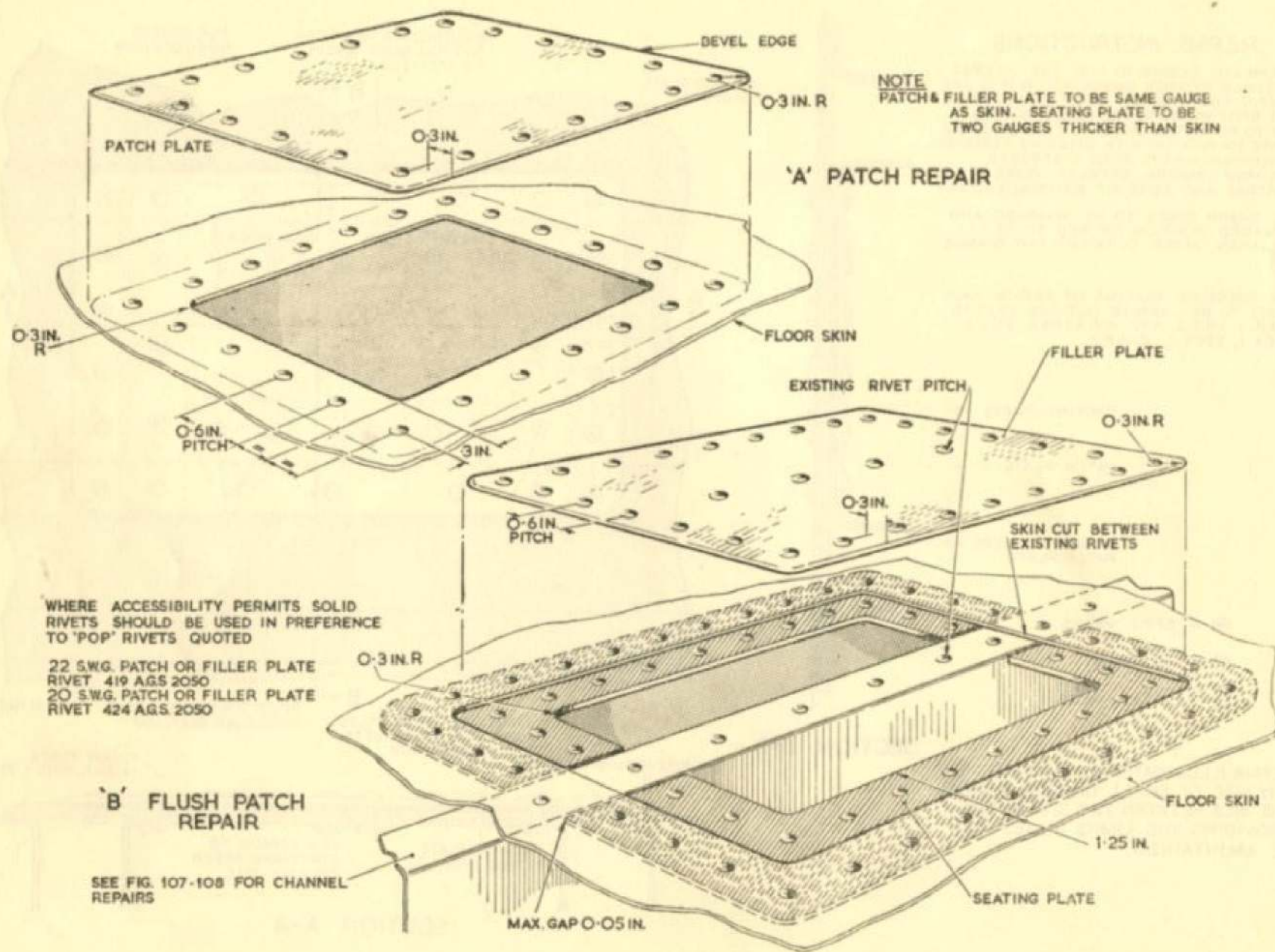


Fig. 5225. Floor skin repairs

RESTRICTED

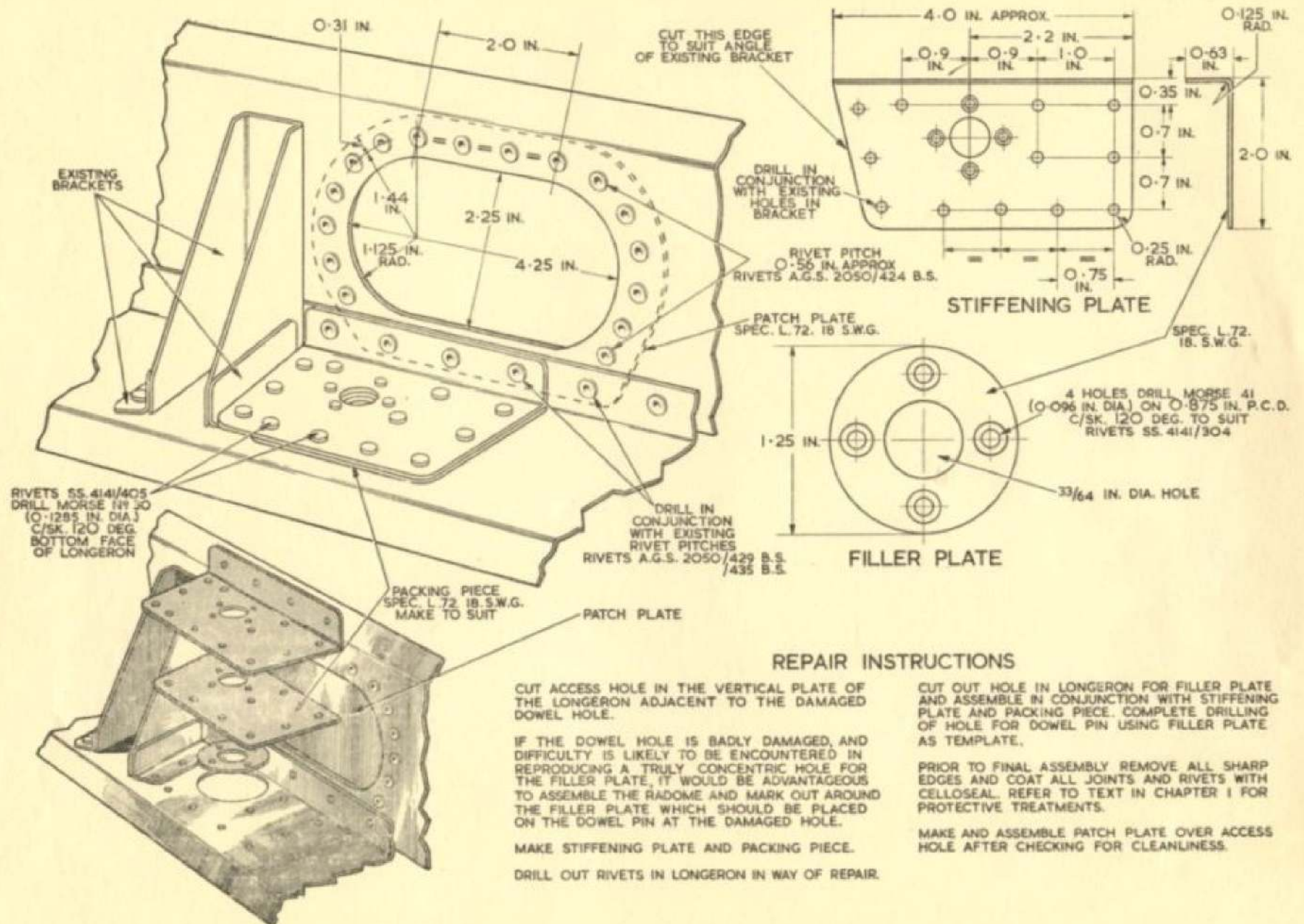


Fig. 226 Repair to damaged dowel holes in nose longeron

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