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CHAPTER 4

TAIL UNIT

CHAP.

4

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Chapter 4

TAIL UNIT

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Introduction

401. As no conventional tail plane is fitted on this aircraft, the main assemblies in the "tail unit" consist only of a fin and rudder. The elevators and the dorsal fin are dealt with separately in Chap.3. The main assemblies are illustrated from front to rear, each section being broken down into various sub-assemblies. With the exception of a detachable fin tip, which is made from a composite material,

the fin and rudder are made from all metal construction.

NOTE...

Repairs involving the removal of components made from Spec.D.T.D.118 must be renewed with items made from Spec.D.T.D.742.

Protective treatments

402. When any repairs are being carried out, protective treatments as laid down

in Chap.1, para.134 to 138, should be incorporated.

REPAIRS TO RUDDER BALANCE SEALING

403. Refer to Chap.3, para.314 for minor repairs to pre-Mod.1408 rudder balance seals, and for illustrations see fig.406 and 407. For minor repairs to post-Mod.1408 rudder balance seals apply the following procedure. Refer to fig. 406A for additional information.

Materials required

- (1) Bell Asbestos 7F1.S/W/A.F. Silicone rubber coated linen.
- (2) Midland Silicone Adhesive MS.2705 (Ref.No.33H/ 2202147).
- (3) Catalyst N.27 (supplied with MS.2705).

Preparation of adhesive

404. Add 4.5 parts by weight of Catalyst N.27 to 100 parts by weight of MS.2705 adhesive base and stir slowly. It is essential to stir the mixture slowly and carefully to prevent the formation of air bubbles which, if formed, will have a detrimental effect upon the final bond strength. Allow the mixture to stand for 15 min. at room temperature to enable the catalyst to permeate thoroughly. When prepared in the above proportions, the mixture has a "pot-life" of approximately 4 hours, depending upon the ambient temperature. To prevent wastage, a quantity sufficient for the repair only must be mixed.

Method of attachment

405. Damaged seals may be repaired by patching, the patch being attached with prepared MS.2705 adhesive.

Repair limits

406. The extent of the damage will govern the size of the patch required, but an overlap of 1 in. is necessary to give the required results, e.g., a rent 1 in. long should have a patch 3 in. x 2 in. applied. No patch may overlap an adjoining patch.

Repair procedure

407. It is important to ensure that the seal is absolutely dry and free from oil, grease and dust before proceeding as follows:-

- (1) Measure the damage for length and width and cut out the patch to include overlap limit.
- (2) Place the patch over the damage and mark an outline on the seal - remove and check for central positioning.
- (3) Slightly roughen, with fine sandpaper, both the surface of the seal and that of the patch which is to be bonded. Clean off both surfaces with a cloth dampened very sparingly with acetone, and allow to air-dry.
- (4) A uniform film of adhesive, about 0.01 in. thick, should be applied to both bonding surfaces, using a 0.5 in. fitch brush, and then allowed to air-dry for 45 - 60 min. before affixing patch.
- (5) As the adhesive is a high tack type, care must be taken to ensure that the patch is in the correct position before pressing the two bonding surfaces together, as once united, re-positioning of the patch is not possible. Continuous application of pressure is not essential, but where possible, the application of light pressure is recommended for the first hour to ensure maximum bond strength.
- (6) Damage occurring near or up to the fixing strips may be repaired by the same method, except that the patch must extend under the fixing strip by one thickness - see fig.406A.
- (7) Maximum bond strength is obtained after curing at room temperature for 4 to 7 days. The curing time can be reduced to 24 hours by

careful localized heating at 60 degrees Centigrade.

- (8) All implements used in the above operations should be cleaned with acetone immediately after use, provided that the adhesive is still in a fluid state.

NOTE...

Seals removed for repair should be checked to ensure that the form strip is still glued to the seal before replacing.

REPLACEMENT OF RUDDER BALANCE SEALS

408. In the event of a rudder seal having to be changed, proceed as follows:-

- (1) Select the rudder to port.
- (2) Remove the countersunk head bolts from the fin hinged shroud access doors, which are situated on the port side of the fin. The doors will now swing clear, giving access to the rudder balance seals.
- (3) Remove the mushroom bolts attaching the damaged seal to the fin shroud balance chamber.
- (4) Select the rudder to starboard.
- (5) Remove the bolts attaching the seal to the beak of the rudder. The seal can now be removed.
- (6) Check the condition of the doped fabric patches over the protruding bolt heads on both sides of the centre and top hinge rudder arms, which are attached to the rear fin post. If showing signs of deterioration renew before fitting the new seal. The purpose of the patches is to give the seal a

KEY TO FIG. 403

Item	Material		Description	Dents Depth	Negligible Damage			Repair Fig.
	Spec.	S.W.G. or Section			Dents Depth	Holes Diam.	Holes Pitch Ratio	
1	L.65	-	Shear rib boom	0.025	3.0	-	-	-
2	D.T.D.687	8	Joint strip	0.025	3.0	-	-	-
3	L.72	211/SS.1793	Stiffener	0.025	3.0	-	-	112
4	D.T.D.687	8	Shear rib web	0.025	3.0	0.25	20 : 1	-
5	D.T.D.118	20	Rib web	0.05	3.0	0.25	4 : 1	-
6	L.72	528/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
7	L.72	664/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
8	L.72	786/SS.1793	Angle	x0.05	3.0	0.25	6 : 1	-
9	L.72	12a/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
10	L.72	20	Angle	0.05	3.0	0.25	6 : 1	113
11	D.T.D.626	20	Rib web	0.025	3.0	0.25	20 : 1	104
12	L.72	153/SS.1793	Rib boom	0.025	3.0	-	-	-
13	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
14	L.72	18	Stringer brackets	x0.05	3.0	0.25	6 : 1	-
15	S.99	-	Bracket	* -	-	-	-	-
16	L.65	-	Club foot bracket	* -	-	-	-	-
17	L.72	785/SS.1793	Angle	x0.05	3.0	0.25	6 : 1	-
18	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
19	S.514	20	Channel	0.025	3.0	0.25	8 : 1	108
20	L.72	20	Bracket	x0.025	3.0	0.25	6 : 1	-
21	S.99	-	Bracket	* -	-	-	-	-
22	L.72	829/SS.1793	Boom	0.025	3.0	-	-	-
23	L.72	8	Packing	0.025	3.0	0.25	8 : 1	-
24	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
25	L.72	20	Channel	x0.025	3.0	0.25	6 : 1	-
26	L.72	16	Angle	0.05	3.0	0.125	8 : 1	113
27	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
28	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
29	L.72	153/SS.1793	Boom	0.025	3.0	-	-	-
30	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
31	L.72	18	Liner	0.025	3.0	0.25	8 : 1	-
32	L.72	18	Channel	0.025	3.0	0.25	6 : 1	108
33	L.72	528/SS.1793	Boom	0.025	3.0	0.125	8 : 1	113
34	L.72	12a/SS.1793	Angle	0.025	3.0	0.125	8 : 1	113
35	L.72	664/SS.1793	Stiffener	0.025	3.0	0.125	8 : 1	113
36	L.72	18	Angle	0.025	3.0	0.125	8 : 1	113
37	L.72	828/SS.1793	Stringer 'Z' section	0.05	3.0	0.25	6 : 1	111
38	L.65	58/SS.3075	Stringer 'T' section	0.025	3.0	0.25	8 : 1	-
39	S.99	-	Bracket	* -	3.0	-	-	-

* No repairs permitted

x More expedient to renew than repair

All dimensions are quoted in inches

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KEY TO FIG. 403A

Item	Material		Description	Negligible Damage				Repair Fig.
	Spec.	S.W.G. or Section		Dents	Dist. Apart	Holes	Pitch Ratio	
				Depth		Dia.		
1	DTD.626	16	Packing	x0.025	3.0	0.25	6 : 1	-
2	L.72	20	Channel stiffener	0.025	3.0	0.25	6 : 1	107-108
3	L.72	18	Beam	0.025	3.0	0.25	6 : 1	108
4	L.72	887/SS.1793	Beam	0.025	3.0	0.25	6 : 1	108
5	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
6	L.72	18	Beam joint channel	x0.025	3.0	0.25	6 : 1	-
7	L.72	18	Reinforcing plate	0.025	3.0	-	-	-
8	L.65	-	Fitting	*0.025	3.0	-	-	-
9	L.65	-	Fitting	*0.025	3.0	-	-	-
10	L.72	20	Hinges	x0.025	3.0	-	-	-
11	L.72	20	Brackets	0.025	3.0	0.25	6 : 1	115
12	L.72	20	Brackets	0.025	3.0	0.25	6 : 1	115
13	L.72	22	Bracket	x0.025	3.0	-	-	-
14	L.72	18	Angle bracket	x0.025	3.0	-	-	-
15	DTD.626	18	Fairing skin	0.025	3.0	-	-	103-116
16	L.72	18	Torsion box skin	0.025	3.0	-	-	104
17	L.72	890/SS.1793	Beam channel	0.025	3.0	-	-	108
18	L.72	891/SS.1793	Beam channel	0.025	3.0	-	-	108
19	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
20	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
21	L.72	18	Beam	0.025	3.0	-	-	-
22	L.65	-	Fitting plate	*0.025	3.0	-	-	-
23	L.72	18	Beam	0.025	3.0	-	-	108
24	L.72	887/SS.1793	Beam	0.025	3.0	-	-	108
25	S.514	16	Angle plate	* -	-	-	-	-
26	L.65	-	Fitting	*0.025	3.0	-	-	-
27	I.72	20	Angle stiffener	x0.025	3.0	0.25	6 : 1	-
28	S.514	14	Angle plate	* -	-	-	-	-
29	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
30	L.72	18	Beam joint channel	x0.025	3.0	-	-	-
31	L.65	295/SS.3075	Fitting	*0.025	3.0	-	-	-
32	L.72	20	Bracket	0.025	3.0	0.25	6 : 1	115
33	D.T.D.626	18	Fairing skin	0.025	3.0	-	-	103-116
34	L.65	-	Fitting	*0.025	3.0	-	-	-
35	L.65	-	Fitting	*0.025	3.0	-	-	-
36	L.72	22	Vent piece	x0.05	3.0	0.25	6 : 1	-
37	L.72	20	Channel	0.025	3.0	0.25	6 : 1	-
38	L.72	18	Gusset	x0.025	3.0	0.25	6 : 1	-
39	L.72	892/SS.1793	Beam channel	0.025	3.0	-	-	-
40	L.65	-	Plate	*0.025	3.0	-	-	-
41	L.72	528/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
42	L.72	665/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
43	L.72	54/SS.1793	Stiffener	0.025	3.0	0.25	6 : 1	108
44	L.72	522/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
45	L.72	289/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
46	L.65	-	Fitting	*0.025	3.0	0.25	6 : 1	-
47	D.T.D.687	16	Web	0.025	3.0	-	-	103-116
48	D.T.D.687	14	Web	0.025	3.0	-	-	103-116
49	D.T.D.5074	-	Boom	0.025	-	-	-	-
50	S.99	-	Fin post joint fitting	* -	-	-	-	-
51	L.72	20	Angle	0.025	3.0	0.25	6 : 1	-

* No repairs permitted

x More expedient to renew than repair

All dimensions are quoted in inches

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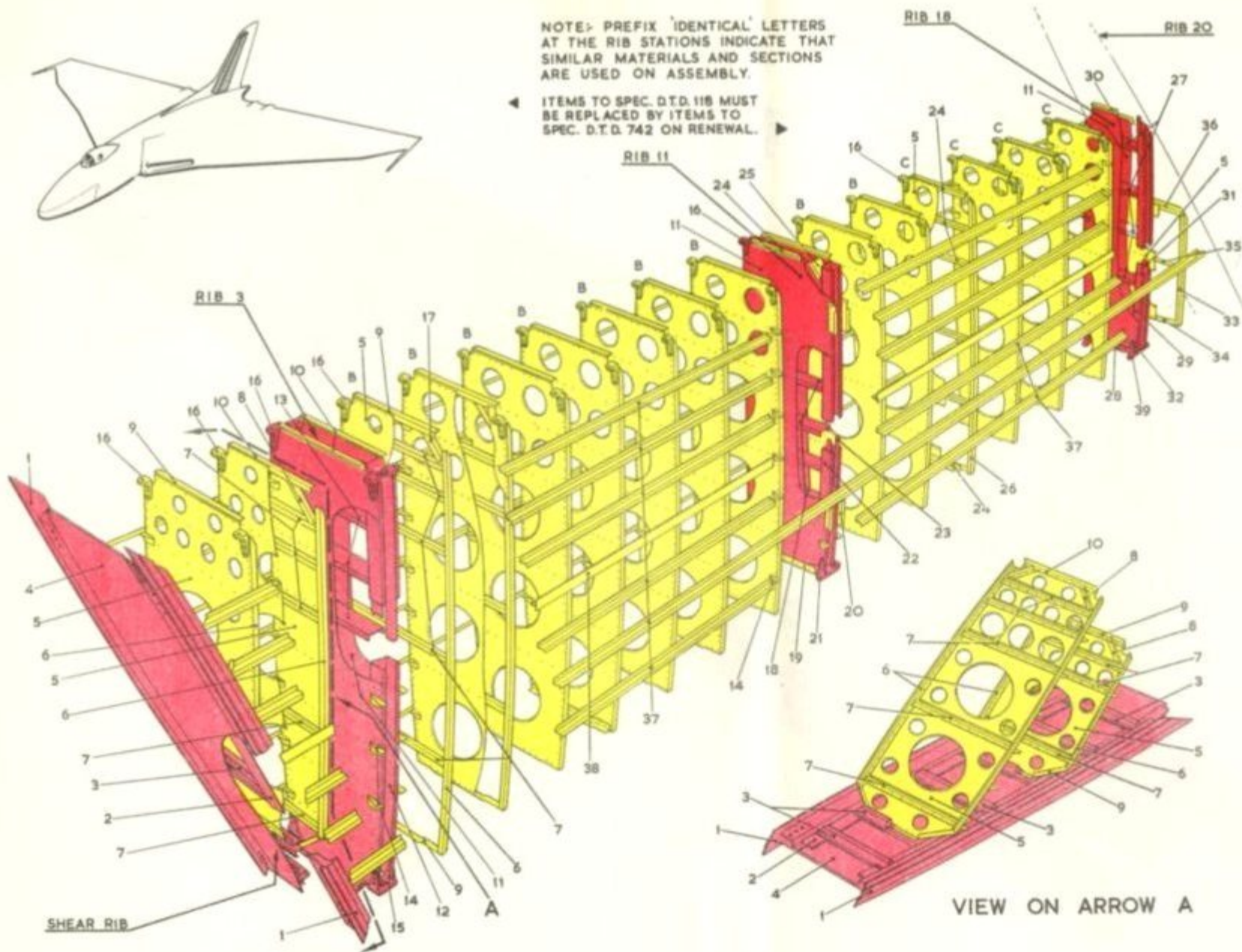


Fig. 403. Fin intermediate structure
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KEY TO FIG. 403

Item	Material		Description	Dents Depth	Negligible Damage			Repair Fig.
	Spec.	S.W.G. or Section			Dist. Apart	Holes Dia.	Pitch Ratio	
1	L.65	-	Shear rib boom	0.025	3.0	-	-	-
2	D.T.D.687	8	Joint strip	0.025	3.0	-	-	-
3	L.72	211/SS.1793	Stiffener	0.025	3.0	-	-	112
4	D.T.D.687	8	Shear rib web	0.025	3.0	0.25	20 : 1	-
5	D.T.D.118	20	Rib web	0.05	3.0	0.25	4 : 1	-
6	L.72	528/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
7	L.72	664/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
8	L.72	786/SS.1793	Angle	x0.05	3.0	0.25	6 : 1	-
9	L.72	12a/SS.1793	Angle	0.05	3.0	0.125	8 : 1	113
10	L.72	20	Angle	0.05	3.0	0.25	6 : 1	113
11	D.T.D.626	20	Rib web	0.025	3.0	0.25	20 : 1	104
12	L.72	153/SS.1793	Rib boom	0.025	3.0	-	-	-
13	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
14	L.72	18	Stringer brackets	x0.05	3.0	0.25	6 : 1	-
15	S.99	-	Bracket	* -	-	-	-	-
16	L.65	-	Club foot bracket	* -	-	-	-	-
17	L.72	785/SS.1793	Angle	x0.05	3.0	0.25	6 : 1	-
18	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
19	S.514	20	Channel	0.025	3.0	0.25	8 : 1	108
20	L.72	20	Bracket	x0.025	3.0	0.25	6 : 1	-
21	S.99	-	Bracket	* -	-	-	-	-
22	L.72	829/SS.1793	Boom	0.025	3.0	-	-	-
23	L.72	8	Packing	0.025	3.0	0.25	8 : 1	-
24	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
25	L.72	20	Channel	x0.025	3.0	0.25	6 : 1	-
26	L.72	16	Angle	0.05	3.0	0.125	8 : 1	113
27	L.72	20	Stiffener	0.025	3.0	0.25	8 : 1	108
28	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
29	L.72	153/SS.1793	Boom	0.025	3.0	-	-	-
30	L.72	20	Angle	0.025	3.0	0.125	8 : 1	113
31	L.72	18	Liner	0.025	3.0	0.25	8 : 1	-
32	L.72	18	Channel	0.025	3.0	0.25	6 : 1	108
33	L.72	528/SS.1793	Boom	0.025	3.0	0.125	8 : 1	113
34	L.72	12a/SS.1793	Angle	0.025	3.0	0.125	8 : 1	113
35	L.72	664/SS.1793	Stiffener	0.025	3.0	0.125	8 : 1	113
36	L.72	18	Angle	0.025	3.0	0.125	8 : 1	113
37	L.72	828/SS.1793	Stringer 'Z' section	0.05	3.0	0.25	6 : 1	111
38	L.65	58/SS.3075	Stringer 'T' section	0.025	3.0	0.25	8 : 1	-
39	S.99	-	Bracket	* -	3.0	-	-	-

* No repairs permitted

x More expedient to renew than repair

All dimensions are quoted in inches

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Item	Material		Description	Negligible Damage			Pitch Ratio	Repair Fig.
	Spec.	S.W.G. or Section		Dents	Dist. Apart	Holes		
				Depth		Dia.		
1	DTD.626	16	Packing	x0.025	3.0	0.25	6 : 1	-
2	L.72	20	Channel stiffener	0.025	3.0	0.25	6 : 1	107-108
3	L.72	18	Beam	0.025	3.0	0.25	6 : 1	108
4	L.72	887/SS.1793	Beam	0.025	3.0	0.25	6 : 1	108
5	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
6	L.72	18	Beam joint channel	x0.025	3.0	0.25	6 : 1	-
7	L.72	18	Reinforcing plate	0.025	3.0	-	-	-
8	L.65	-	Fitting	*0.025	3.0	-	-	-
9	L.65	-	Fitting	*0.025	3.0	-	-	-
10	L.72	20	Hinges	x0.025	3.0	-	-	-
11	L.72	20	Brackets	0.025	3.0	0.25	6 : 1	115
12	L.72	20	Brackets	0.025	3.0	0.25	6 : 1	115
13	L.72	22	Bracket	x0.025	3.0	-	-	-
14	L.72	18	Angle bracket	x0.025	3.0	-	-	-
15	DTD.626	18	Fairing skin	0.025	3.0	-	-	103-116
16	L.72	18	Torsion box skin	0.025	3.0	-	-	104
17	L.72	890/SS.1793	Beam channel	0.025	3.0	-	-	108
18	L.72	891/SS.1793	Beam channel	0.025	3.0	-	-	108
19	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
20	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
21	L.72	18	Beam	0.025	3.0	-	-	-
22	L.65	-	Fitting plate	*0.025	3.0	-	-	-
23	L.72	18	Beam	0.025	3.0	-	-	108
24	L.72	887/SS.1793	Beam	0.025	3.0	-	-	108
25	S.514	16	Angle plate	* -	-	-	-	-
26	L.65	-	Fitting	*0.025	3.0	-	-	-
27	I.72	20	Angle stiffener	x0.025	3.0	0.25	6 : 1	-
28	S.514	14	Angle plate	* -	-	-	-	-
29	L.72	18	Stiffener	0.025	3.0	0.25	6 : 1	-
30	L.72	18	Beam joint channel	x0.025	3.0	-	-	-
31	L.65	295/SS.3075	Fitting	*0.025	3.0	-	-	-
32	L.72	20	Bracket	0.025	3.0	0.25	6 : 1	115
33	D.T.D.626	18	Fairing skin	0.025	3.0	-	-	103-116
34	L.65	-	Fitting	*0.025	3.0	-	-	-
35	L.65	-	Fitting	*0.025	3.0	-	-	-
36	L.72	22	Vent piece	x0.05	3.0	0.25	6 : 1	-
37	L.72	20	Channel	0.025	3.0	0.25	6 : 1	-
38	L.72	18	Gusset	x0.025	3.0	0.25	6 : 1	-
39	L.72	892/SS.1793	Beam channel	0.025	3.0	-	-	-
40	L.65	-	Plate	*0.025	3.0	-	-	-
41	L.72	528/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
42	L.72	665/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
43	L.72	54/SS.1793	Stiffener	0.025	3.0	0.25	6 : 1	108
44	L.72	522/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
45	L.72	289/SS.1793	Stiffener	x0.025	3.0	0.25	6 : 1	-
46	L.65	-	Fitting	*0.025	3.0	0.25	6 : 1	-
47	D.T.D.687	16	Web	0.025	3.0	-	-	103-116
48	D.T.D.687	14	Web	0.025	3.0	-	-	103-116
49	D.T.D.5074	-	Boom	0.025	-	-	-	-
50	S.99	-	Fin post joint fitting	* -	-	-	-	-
51	L.72	20	Angle	0.025	3.0	0.25	6 : 1	-

* No repairs permitted

x More expedient to renew than repair

All dimensions are quoted in inches

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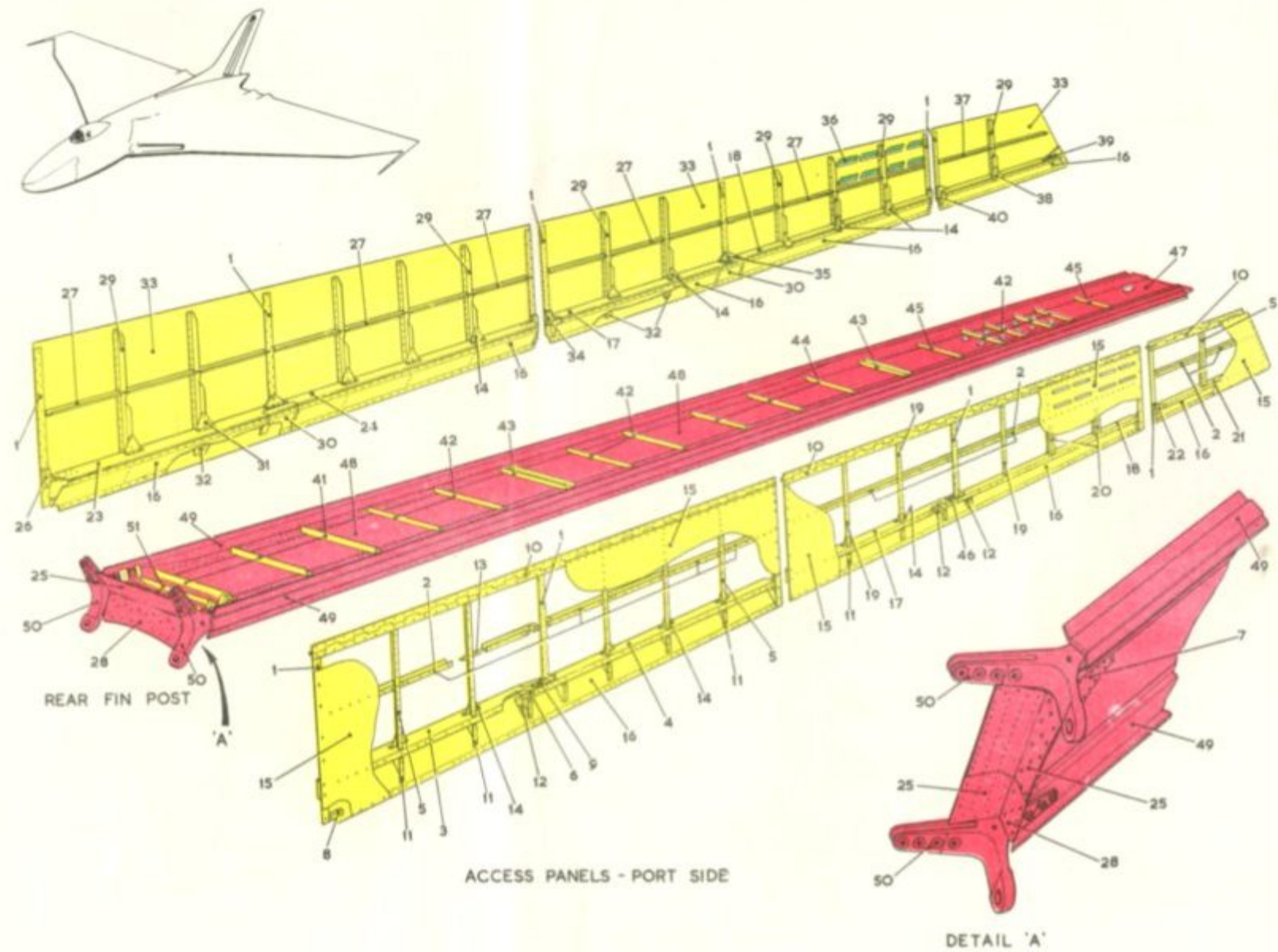


Fig. 403A. Rear fin post - Balance chamber access panels

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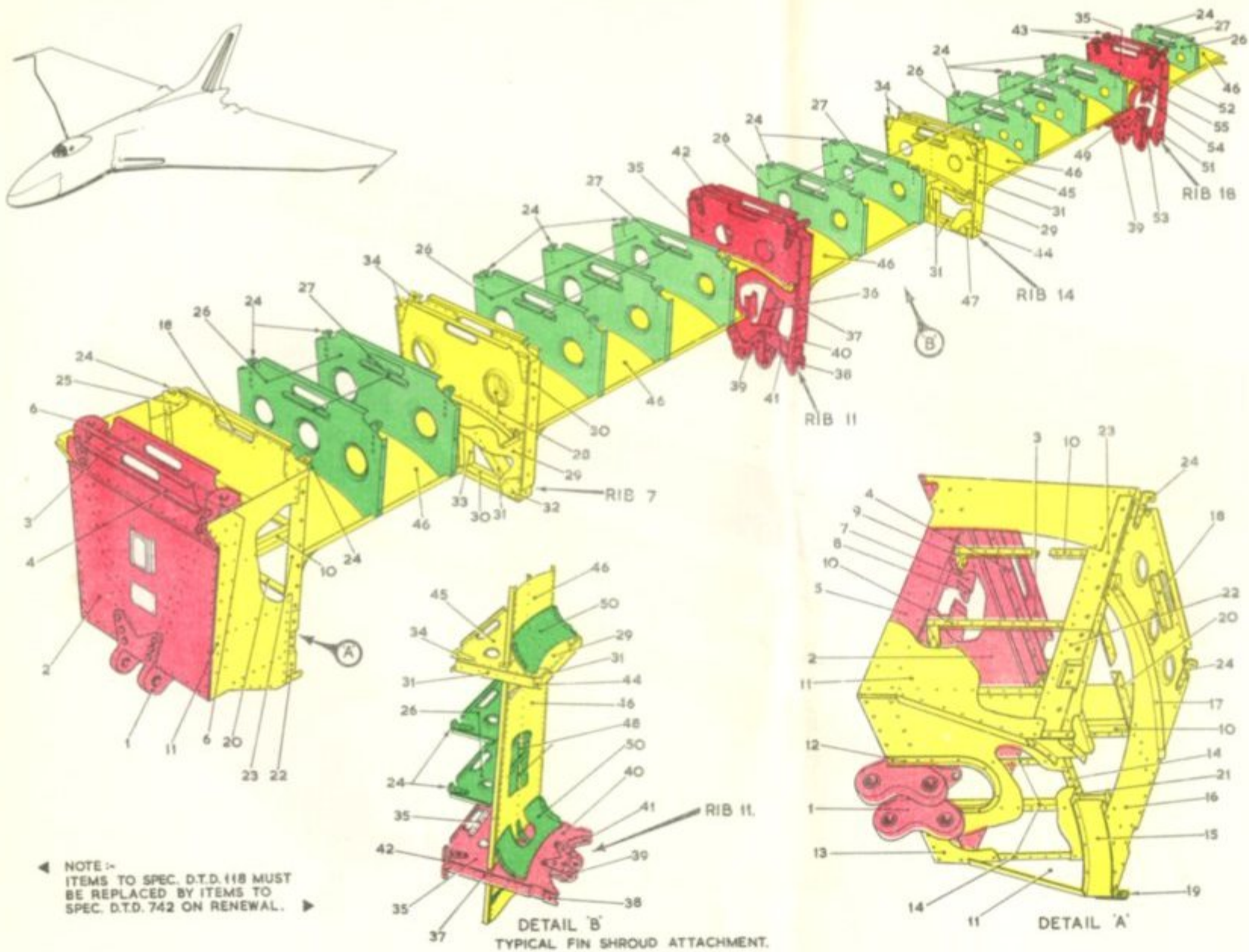


Fig. 403B. Fin balance chamber structure

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KEY TO FIG.403B

Item	Material		Description	Dents		Negligible Damage		Pitch Ratio	Repair Fig.
	Spec.	S.W.G. or Section		Depth	Dist. Apart	Dia.	Holes		
1	D. T. D. 5054 or L. 77	-	Bracket	* -	-	-	-	-	-
2	D. T. D. 626	20	Web	0.025	3.0	-	-	-	103
3	L. 72	18	Bracket	0.025	3.0	-	-	-	108
4	L. 72	788/SS.1793	Angle	0.025	3.0	-	-	-	113
5	L. 72	100/SS.1793	Channel	0.025	3.0	-	-	-	108
6	S. 99	-	Bracket	* -	-	-	-	-	-
7	L. 72	153/SS.1793	Boom	0.025	3.0	-	-	-	108
8	L. 72	12	Packing	x 0.025	3.0	-	-	-	-
9	L. 72	20	Bracket	x 0.05	3.0	0.25	-	6:1	-
10	L. 72	828/SS.1793	Stringer	0.05	3.0	0.25	-	8:1	111
11	D. T. D. 626	18	Skin	0.05	3.0	-	-	-	103-116
12	L. 72	18	Angle	x 0.05	3.0	0.25	-	8:1	-
13	L. 72	20	Diaphragm	0.05	3.0	-	-	-	103-116
14	L. 72	762/SS.1793	Angle	0.05	3.0	0.25	-	8:1	113
15	L. 72	20	Channel	0.05	3.0	0.25	-	6:1	108
16	D. T. D. 626	20	Web	0.05	3.0	0.25	-	8:1	103-116
17	L. 72	20	Diaphragm	0.05	3.0	0.25	-	8:1	115
18	L. 72	20	Angle	x 0.05	3.0	0.25	-	6:1	-
19	S. 510	16	Bracket	x 0.025	3.0	-	-	-	-
20	L. 72	863/SS.1793	Angle	0.05	3.0	0.25	-	8:1	-
21	D. T. D. 626	20	Bottom web	x 0.05	3.0	0.25	-	8:1	-
22	S. 510	18	Channel	x 0.025	3.0	0.25	-	8:1	-
23	L. 72	20	Angle	0.05	3.0	0.25	-	8:1	108
24	L. 72	18	Bracket	x 0.025	3.0	-	-	-	-
25	L. 72	20	Sealing plate	x 0.05	3.0	0.25	-	4:1	-
26	L. 72	20	Pressing	0.1	3.0	0.5	-	6:1	115
27	L. 72	20	Angle bracket	x 0.05	3.0	0.25	-	6:1	-
28	L. 72	22	Doubling plate	0.1	3.0	0.25	-	6:1	115
29	D. T. D. 118	22	Web	0.1	3.0	0.25	-	6:1	103
30	L. 72	20	Channel	0.05	3.0	0.25	-	8:1	108
31	L. 72	508/SS.1793	Channel	0.05	3.0	0.25	-	8:1	107-108
32	L. 72	20	Gusset plate	x 0.05	3.0	0.25	-	8:1	-
33	L. 72	22	Channel	x 0.05	3.0	0.25	-	8:1	-
34	L. 72	20	Angle bracket	x 0.05	3.0	-	-	-	-
35	L. 72	20	Doubling plate	x 0.05	3.0	0.25	-	8:1	-
36	S. 514	16	Channel	0.05	3.0	-	-	-	-
37	L. 72	100/SS.1793	Channel	0.05	3.0	0.25	-	8:1	108
38	S. 510	20	Channel	x 0.05	3.0	0.25	-	8:1	-
39	T. D. 5054 or L. 77	-	Bracket	* -	-	-	-	-	-
40	D. T. D. 626	20	Web	0.025	3.0	-	-	-	103
41	L. 72	100/SS.1793	Channel	0.05	3.0	-	-	-	108
42	S. 99	-	Bracket	* -	-	-	-	-	-
43	S. 99	-	Bracket	* -	-	-	-	-	-
44	L. 72	22	Channel	0.05	3.0	0.25	-	8:1	-
45	L. 72	22	Doubling plate	0.1	3.0	0.25	-	6:1	-
46	L. 72	22	Diaphragm shroud skins	0.025	3.0	-	-	-	104
47	L. 72	20	Gusset plate	x 0.05	3.0	0.25	-	8:1	-
48	L. 72	20	Angle	0.05	3.0	0.25	-	8:1	113

*No repairs permitted

xMore expedient to renew than repair

All dimensions are quoted in inches

RESTRICTED

KEY TO FIG.403B (continued)

Item	Material		Description	Negligible Damage			Repair Fig.
	Spec.	S. W. G. or Section		Dents Depth	Holes Dist. Apart	Holes Dia.	
49	D. T. D. 626	20	Web	0.025	3.0	-	-
50	S. 510	24	Corner bracket	0.1	3.0	-	104
51	S. 510	22	Channel	x 0.05	3.0	0.25	8:1
52	L. 72	100/SS.1793	Channel	0.05	3.0	0.25	8:1
53	L. 72	20	Channel	0.05	3.0	-	108
54	L. 72	16	Packing	x 0.025	3.0	-	-
55	L. 72	153/SS.1793	Boom	0.025	3.0	-	108

*No repairs permitted

xMore expedient to renew than repair

All dimensions are quoted in inches

KEY TO FIG.403C

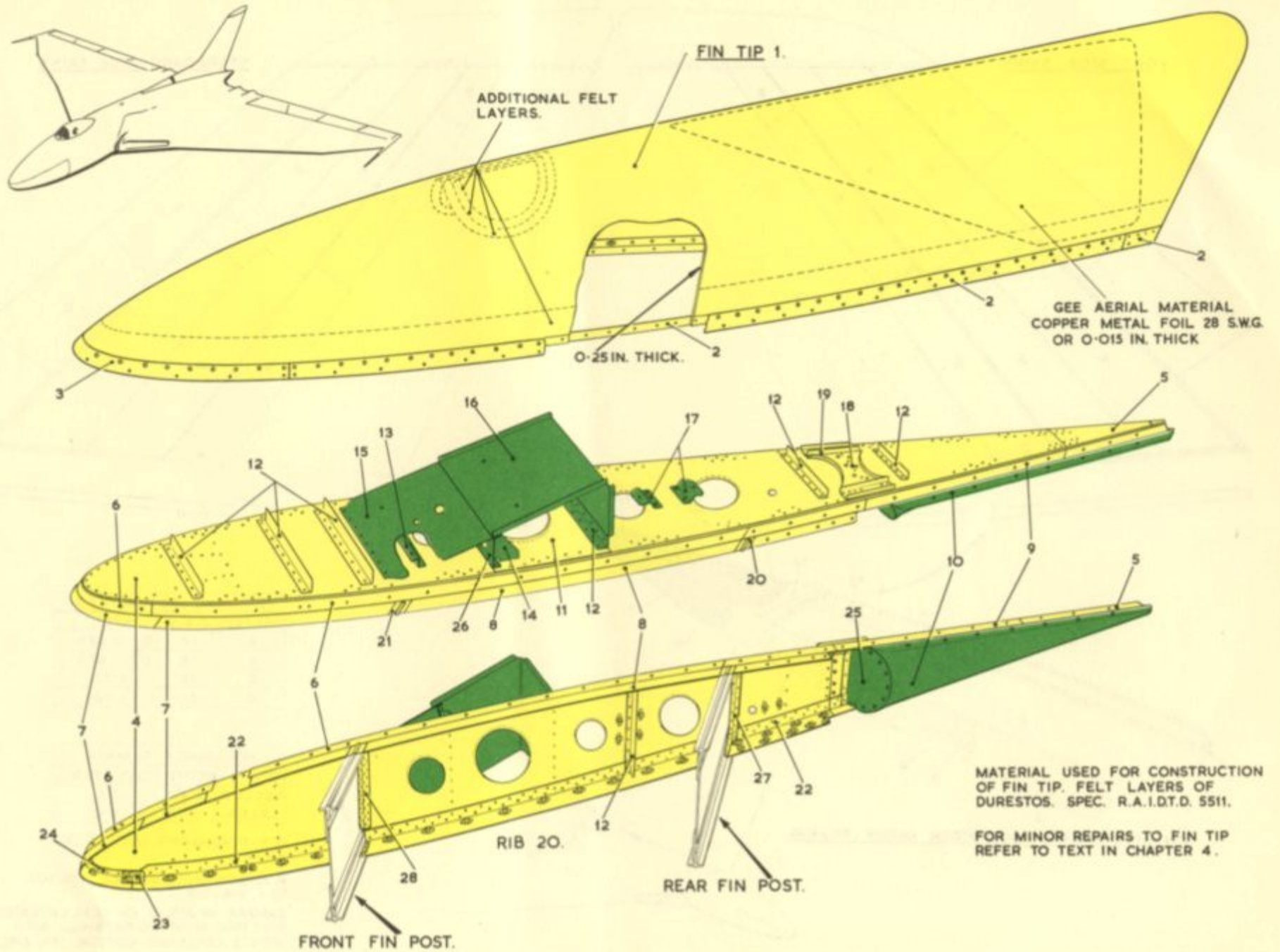
Item	Material		Description	Negligible Damage			Repair Fig.
	Spec.	S. W. G. or Section		Dents Depth	Holes Dist. Apart	Holes Dia.	
1	D. T. D. 5511	Felt layers of Dureston	Fin tip	0.05	10.0	-	-
2	L. 72	16	Attachment plates	x 0.025	3.0	-	-
3	B. S. 1470 or L. 59	16	Nose attachment plate	x 0.025	3.0	-	-
4	L. 72	18	Web	0.05	3.0	0.25	6:1
5	L. 72	18	Tail piece	x 0.05	3.0	0.25	6:1
6	L. 72	18	Packings	x 0.05	3.0	-	-
7	L. 72	14	Packing strips	x 0.05	3.0	-	-
8	L. 72	22	Packing strip	x 0.05	3.0	-	-
9	L. 72	18	Packing strip	x 0.05	3.0	-	-
10	L. 59	16	Top rib fairing	0.1	3.0	-	-
11	L. 59	18	Doubling plate	0.05	3.0	0.25	6:1
12	L. 72	183/SS.1793	Stiffener	0.05	3.0	0.25	6:1
13	L. 72	16	Bracket	0.05	3.0	0.25	6:1
14	L. 72	18	Bracket	0.05	3.0	0.25	6:1
15	L. 72	16	Plate	0.1	3.0	0.25	6:1
16	L. 72	24	Bracket	x 0.1	3.0	0.25	4:1
17	L. 72	16	Bracket	x 0.05	3.0	0.25	6:1
18	L. 72	18	Joint plate	x 0.05	3.0	0.25	6:1
19	L. 72	16	Lipped angle	x 0.05	3.0	0.25	8:1
20	L. 72	11	Packing	x 0.05	3.0	-	-
21	L. 72	12	Packing	x 0.05	3.0	-	-
22	L. 72	18	Boom	0.025	3.0	0.25	8:1
23	L. 72	18	Angle strap	x 0.025	3.0	0.25	6:1
24	L. 72	18	Cap	x 0.05	3.0	0.25	6:1
25	L. 72	16	Plate	0.1	3.0	-	-
26	L. 72	16	Channel	0.05	3.0	0.25	6:1
27	L. 72	18	Bracket	0.05	3.0	0.25	6:1
28	L. 72	16	Angle	0.05	3.0	0.25	6:1

*No repairs permitted

xMore expedient to renew than repair

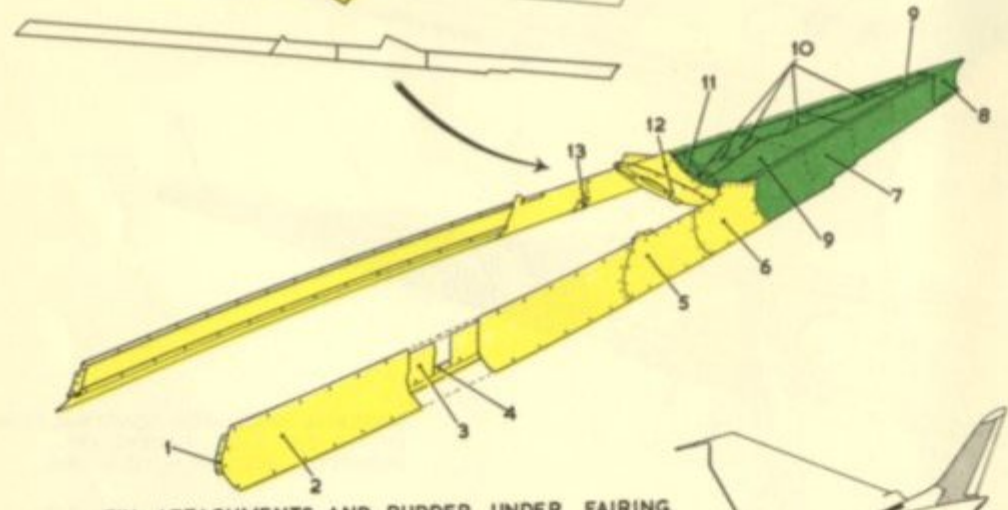
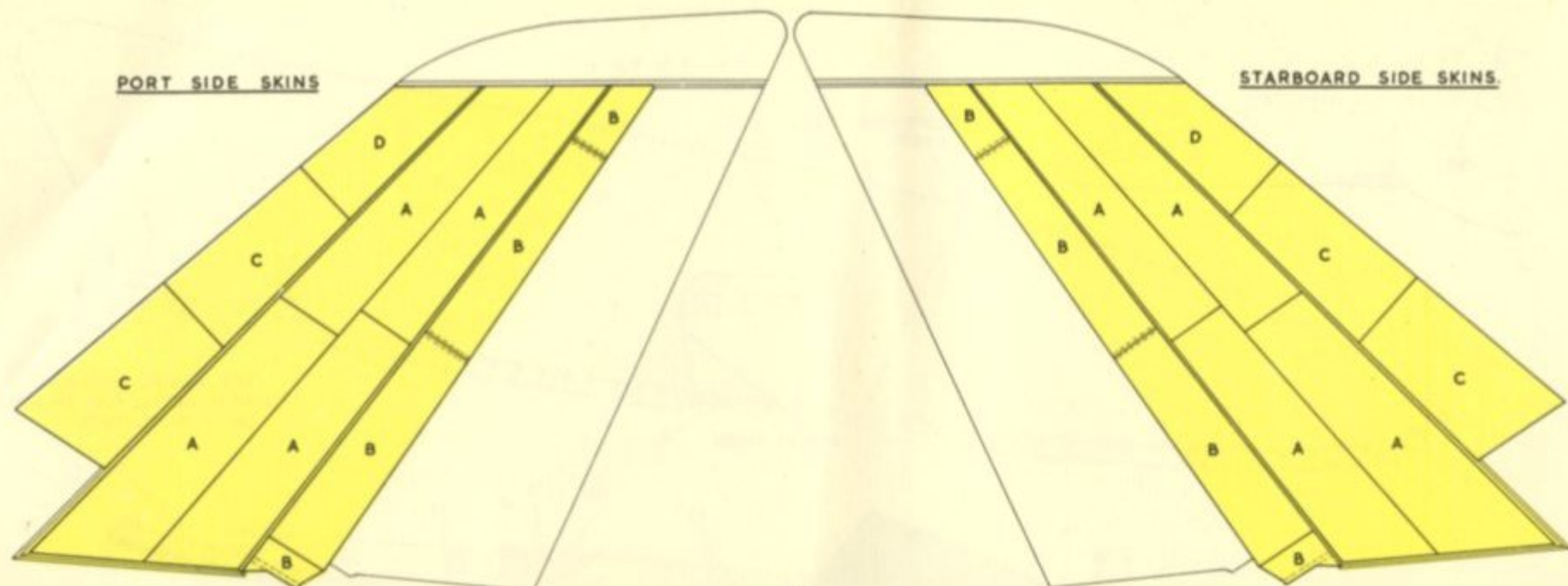
All dimensions are quoted in inches

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MATERIAL USED FOR CONSTRUCTION OF FIN TIP. FELT LAYERS OF DURESTOS. SPEC. R.A.I.D.T.D. 5511.
 FOR MINOR REPAIRS TO FIN TIP REFER TO TEXT IN CHAPTER 4.

Fig.403C - Fin cap - Rib 20 RESTRICTED



FIN ATTACHMENTS AND RUDDER UNDER FAIRING.

SKINNING REFERENCES		
PREFIX.	S.W.G.	SPEC.
A	14	D.T.D. 626.
B	18	D.T.D. 626.
C	18	L.72.
D	20	L.72.

NEGLIGIBLE DAMAGE.		
DENTS.	DEPTH.	DIST. APART.
YELLOW.	0.05	5.0
GREEN.	0.10	4.0

ALL DIMENSIONS QUOTED IN INCHES.

FOR SKIN REPAIRS SEE FIG.103, 104, 116, 117.

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

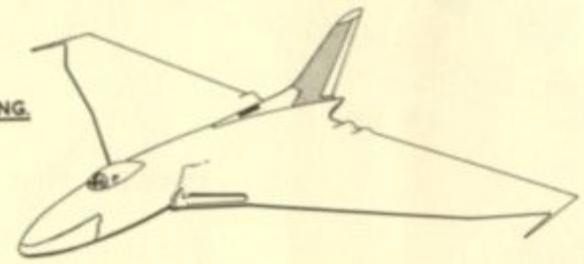


Fig.404 - Fin skinning RESTRICTED

KEY TO FIG.404

Item	Material		Description	Dents Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
	Spec.	S.W.G. or Section			Dist. Aport	Dia.		
1	L.72	18	Strap plate	x 0.05	3.0	-	-	-
2	L.72	20	Fillet	0.05	3.0	-	-	103-104
3	L.72	20	Plate	0.05	3.0	0.25	6:1	
4	L.72	18	Angle	0.05	3.0	0.25	6:1	113
5	L.72	20	Forward panel	0.05	3.0	-	-	103
6	L.72	20	Rear panel	0.05	3.0	-	-	103-104
7	L.72	24	Forward fairing	0.05	3.0	-	-	104
8	L.59	24	Rear fairing	0.05	3.0	-	-	
9	L.72	24	Fairing top	0.05	3.0	-	-	103-104
10	L.72	24	Diaphragm	0.05	3.0	0.25	4:1	115
11	L.72	18	Strap plate	0.05	3.0	-	-	
12	L.59	20	Inside fairing	0.05	3.0	0.25	6:1	103
13	L.72	20	Strap plate	x 0.05	3.0	-	-	-

*No repairs permitted

xMore expedient to renew than repair

All dimensions are quoted in inches

RESTRICTED

KEY TO FIG.405

Item	Material		Description	Negligible Damage				Repair Fig.
	Spec.	S.W.G. or Section		Dents	Dist. Apart	Holes	Pitch Ratio	
1	L.72	22	Seal form strip	x 0.05	3.0	0.125	8:1	
2	L.34	D.R.B.59	Seal fixing strip	x 0.05	3.0	0.125	8:1	
3	L.72	22	Balance weight support skin	0.05	3.0	0.125	8:1	
4	LEAD	-	Balance weight	0.1	3.0	-	-	
5	L.65	-	Balance support member	x 0.05	3.0	0.125	8:1	
6	L.72	18	Plate	x 0.05	6.0	0.125	10:1	
7	L.72	206/SS.1793	Channel	0.05	6.0	0.125	10:1	
8	L.72	18	Top and bottom former	0.05	3.0	0.125	8:1	108
9	L.72	10	Reinforcing plate	x 0.025	3.0	0.125	10:1	
10	L.65	-	Block	* -	-	-	-	
11	L.65	-	Bracket	* -	-	-	-	
12	L.72	12	Strip	x 0.025	3.0	0.125	10:1	
13	L.72	18	Plate	x 0.05	6.0	0.25	6:1	
14	L.72	183/SS.1793	Angle	0.05	6.0	0.125	10:1	113
15	L.72	24	Former pressing	0.05	3.0	0.25	6:1	108
16	L.72	183/SS.1793	Angle	0.05	6.0	0.125	10:1	113
17	L.72	18	Plate	0.05	6.0	0.125	10:1	
18	L.72	24	Former pressing	0.05	3.0	0.25	4:1	108
19	D.T.D.5054 or L.77	-	Bracket	* -	-	-	-	
20	S.96 or S.94	Bar	Shaft	-	-	-	-	
21	S.96	-	Housing	* -	-	-	-	
22	S.99	-	Lever	* -	-	-	-	
23	L.72	24	Former pressing	0.05	3.0	0.25	4:1	108
24	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6:1	108
25	L.72	22	Plate	0.05	6.0	0.25	6:1	
26	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6:1	108
27	L.72	22	Former pressing	0.05	3.0	0.25	6:1	108
28	L.72	22	Gusset	x 0.05	3.0	0.125	6:1	
29	L.72	14	Foot bracket	* 0.025	6.0	-	-	
30	L.72	24	Former pressing	0.05	3.0	0.25	6:1	108
31	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6:1	108
32	L.72	22	Plate	x 0.05	6.0	0.25	6:1	
33	L.72	20	Frame plate	x 0.05	6.0	0.25	6:1	
34	S.96	Bar	Housing	* -	-	-	-	
35	L.77	-	Hinge fitting	* -	-	-	-	
36	L.72	18	Channel	0.025	6.0	0.25	10:1	
37	L.72	18	Angle bracket	x 0.025	6.0	0.125	10:1	
38	L.72	20	Angle	0.05	6.0	0.125	6:1	
39	L.72	797/SS.1793	Angle	x 0.05	6.0	0.125	6:1	113
40	L.72	24	Angle	x 0.05	6.0	0.125	6:1	113
41	D.T.D.687	16	Web	0.1	6.0	0.25	10:1	
42	D.T.D.687	18	Web	0.1	6.0	0.25	10:1	
43	D.T.D.5074	415/SS.3075	Spar boom	-	-	-	-	
44	L.72	18	Plate	x 0.05	6.0	0.25	8:1	
45	L.72	10	Plate	x -	-	-	-	
46	L.72	20	Angle	x --	-	-	-	
47	L.72	18	Strap plate	x 0.05	6.0	0.125	6:1	

*No repairs permitted

xMore expedient to renew than repair

All dimensions are quoted in inches

RESTRICTED

Key to Fig. 405A

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	22	Balance weight support skin	0.05	3.0	0.125	8 : 1	
2	LEAD	—	Balance weight	0.10	3.0	—	—	
3	L.65	—	Balance support member	0.05	3.0	0.125	8 : 1	
4	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6 : 1	108
5	L.72	24	Former pressing	0.05	3.0	0.25	4 : 1	108
6	L.72	22	Plate	†0.05	6.0	0.25	6 : 1	
7	L.72	20	Balance channel	0.05	6.0	0.25	6 : 1	108
8	L.72	24	Former pressing	0.05	3.0	0.25	4 : 1	108
9	L.72	20	Strap plate	†0.05	6.0	0.125	6 : 1	
10	L.72	24	Former pressing	0.05	3.0	0.25	4 : 1	108
11	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6 : 1	108
12	L.72	22	Plate	0.05	6.0	0.25	6 : 1	
13	L.72	20	Door frame	0.05	6.0	0.25	6 : 1	
14	L.77	—	Hinge fitting	* —	—	—	—	
15	S.96	Bar	Housing	* —	—	—	—	
16	L.59	20	Cap	0.05	6.0	—	—	
17	L.72	24	Former pressing	0.05	3.0	0.25	4 : 1	108
18	L.72	20	Strap plate	†0.05	3.0	0.125	6 : 1	
19	L.72	775/SS.1793	Balance channel	0.05	6.0	0.25	6 : 1	
20	L.72	22	Inner channel	0.05	6.0	0.25	6 : 1	
21	L.72	24	Angle	†0.05	6.0	0.125	6 : 1	113
22	L.72	797/SS.1793	Angle	†0.05	6.0	0.125	6 : 1	113
23	DTD.687	18	Strap	†0.05	6.0	0.125	6 : 1	
24	L.72	18	Plate	†0.05	6.0	0.25	6 : 1	
25	DTD.687	18	Web	0.10	6.0	0.25	10 : 1	
26	DTD.5074	415/SS.3075	Spar boom	—	—	—	—	
27	L.72	20	Angle	† —	—	—	—	

All dimensions are quoted in inches

†More expedient to replace than repair

*No repairs permitted

RESTRICTED

Key to Fig. 405B

Item	Spec.	Material S.W.G. or Section	Description	Dents		Negligible Damage		Holes Pitch Ratio	Repair Fig. No.
				Depth	Dist. Apart	Dia.			
1	DTD.118	24	Web	0.05	6.0	0.25	8 : 1	106, 108	
2	L.72	24	Rib angle	0.05	6.0	0.125	10 : 1	113	
3	L.72	24	Stiffening angles	†0.05	6.0	0.125	10 : 1		
4	L.72	22	Angle	†0.05	4.0	0.125	10 : 1		
5	DTD.118	18	Packing	†0.025	4.0	—	—		
6	DTD.118	18	Strip	†0.025	4.0	0.125	10 : 1		
7	L.72	14	Foot bracket	—	—	—	—		
8	L.72	16	Reinforcing plate	0.025	4.0	0.125	10 : 1		
9	DTD.118	24	Angles	0.05	6.0	0.125	10 : 1	113	
10	DTD.118	24	Stiffening angles	†0.05	6.0	0.25	8 : 1		
11	DTD.626	20	Skin reinforcing plate	†0.025	6.0	0.125	10 : 1		
12	L.72	24	Angle	0.05	6.0	0.125	10 : 1	113	
13	DTD.118	18	Packing	†0.05	6.0	0.25	8 : 1		
14	DTD.626	18	Packing	†0.05	6.0	0.25	8 : 1		
15	L.72	24	Web	0.05	6.0	0.25	8 : 1	106, 108	
16	L.72	20	Angle	0.05	6.0	0.125	10 : 1	113	
17	L.72	18	Packing	†0.05	6.0	0.25	8 : 1		
18	L.72	22	Stiffening angles	†0.05	6.0	0.25	8 : 1		
19	L.72	20	Web	0.05	6.0	0.25	8 : 1	106	
20	L.72	249/SS.1793	Angles	0.05	6.0	0.125	10 : 1	113	
21	L.72	18	Packing	†0.025	4.0	0.125	10 : 1		
22	DTD.118	22	Angle	0.025	6.0	0.125	10 : 1		
23	L.59	20	Fairing	0.025	6.0	—	—	103	
24	L.72	22	Stiffener	0.05	6.0	0.25	8 : 1		
25	L.59	20	End plate	0.05	6.0	—	—		
26	L.72	22	Angle	†0.05	6.0	0.125	10 : 1		
27	L.72	18	Channel	0.05	6.0	0.25	8 : 1		
28	DTD.118	20	Web	0.025	8.0	0.125	16 : 1	106, 108	
29	L.72	8	Plate	†0.025	6.0	0.125	16 : 1		
30	DTD.626	20	Stiffener	0.025	6.0	0.125	16 : 1		
31	DTD.118	22	Channel	0.05	6.0	0.25	8 : 1		
32	DTD.118	22	Joint channel	†0.05	6.0	0.125	16 : 1		
33	DTD.118	22	Angle	†0.05	6.0	0.125	16 : 1		
34	DTD.118	24	Angle	†0.05	6.0	0.125	16 : 1		
35	DTD.118	24	Riblet	0.05	4.0	0.125	10 : 1	120	
36	DTD.118	22	Strips	†0.025	4.0	0.125	10 : 1		
37	DTD.118	22	Plate strip	†0.025	4.0	—	—		
38	DTD.118	10	Wedge strip	†0.025	6.0	0.125	20 : 1		
39	DTD.118	12	Wedge strip	†0.025	6.0	0.125	20 : 1		
40	DTD.259	—	Block	†0.025	6.0	—	—		
41	DTD.118	24	Angle	†0.05	6.0	0.125	16 : 1		

All dimensions are quoted in inches

†More expedient to replace than repair

*No repairs permitted

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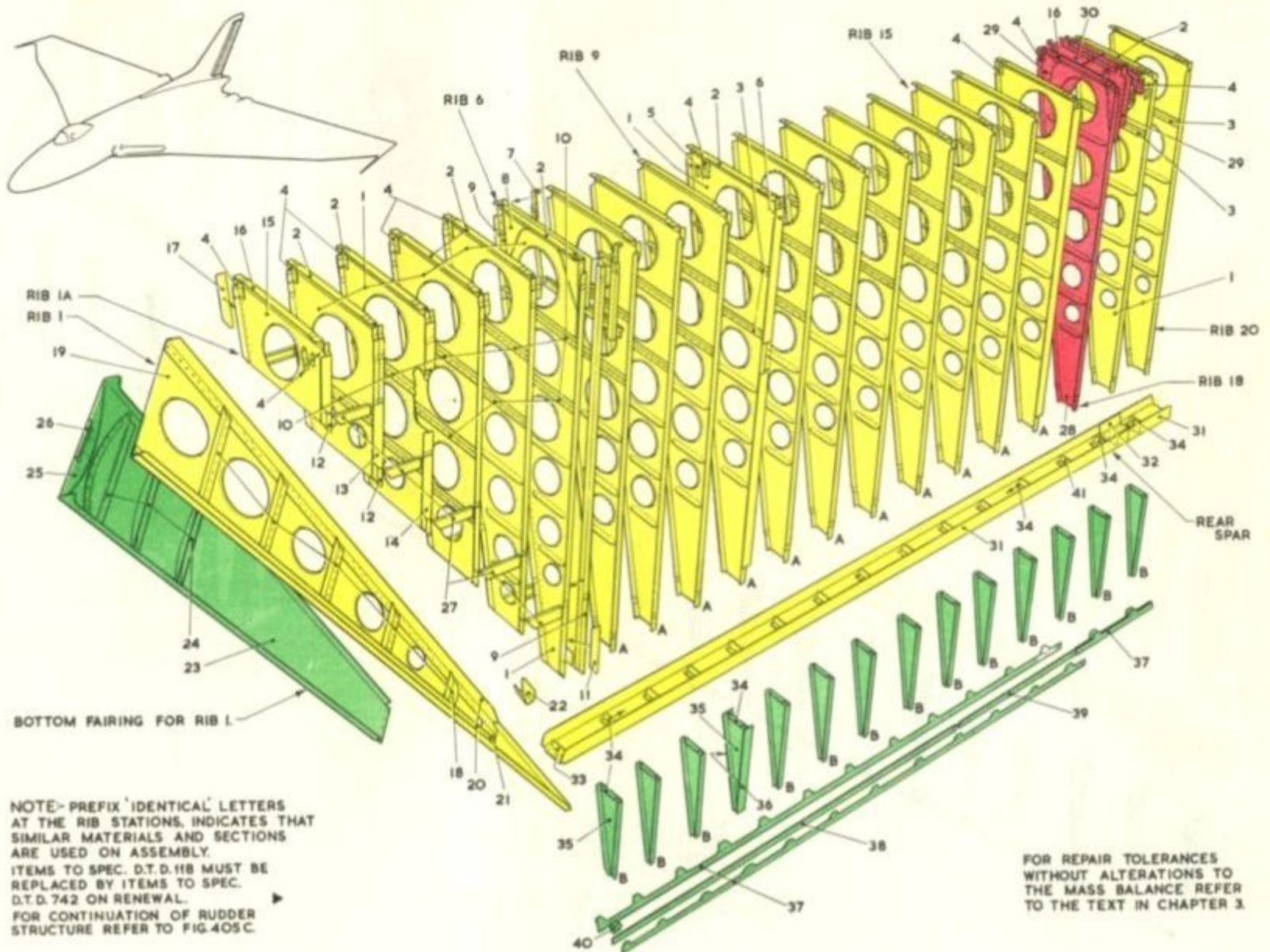


Fig. 405 B. Rudder structure -aft of front spar

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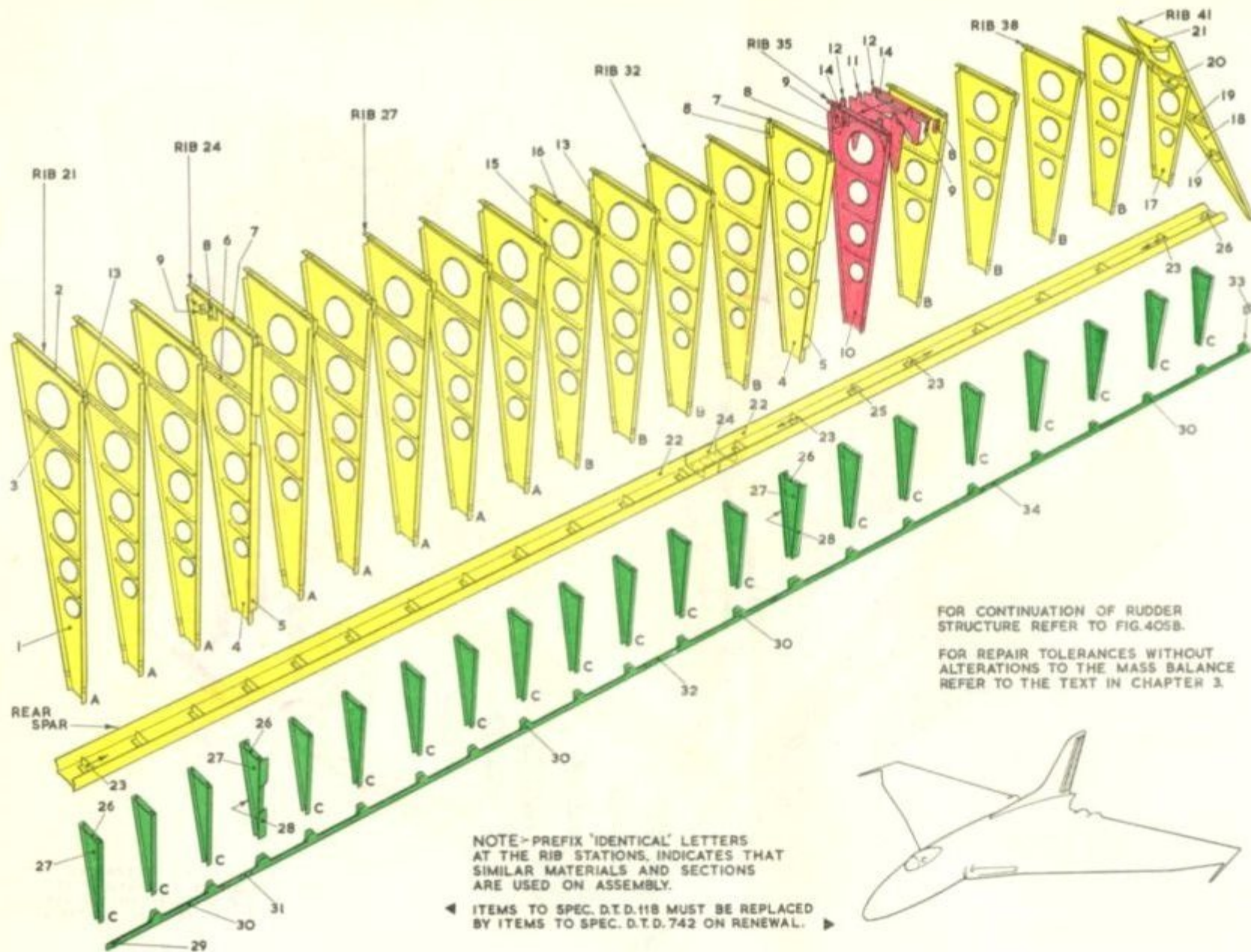


Fig. 405C. Rudder structure -aft of front spar

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Key to Fig. 405C

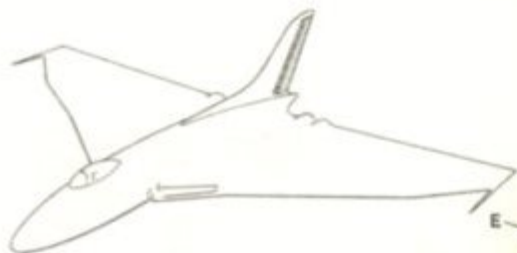
Item	Spec.	Material S.W.G. or Section	Description	Negligible Damage			Holes Pitch Ratio	Repair Fig. No.
				Dents Depth	Dist. Apart	Dia.		
1	DTD.118	24	Web	0-05	6-0	0-25	8 : 1	106, 108
2	L.72	24	Attachment angle	0-05	6-0	0-125	12 : 1	113
3	L.72	24	Lipped angle	†0-05	6-0	0-125	12 : 1	
4	DTD.118	24	Web	0-05	6-0	0-25	8 : 1	106, 108
5	DTD.118	18	Strip	†0-025	4-0	0-125	10 : 1	
6	L.72	24	Lipped angle	†0-05	6-0	0-125	12 : 1	
7	L.72	24	Attachment angle	0-05	6-0	0-125	10 : 1	113
8	L.72	22	Angle bracket	†0-05	4-0	0-125	10 : 1	
9	L.72	—	Packing when required	†0-025	6-0	—	—	
10	DTD.118	20	Web	0-025	8-0	0-125	16 : 1	106, 108
11	DTD.626	20	Stiffener plate	†0-025	6-0	0-125	16 : 1	
12	L.72	8	Plate	†0-025	6-0	0-125	16 : 1	
13	L.72	22	Angle bracket	†0-05	4-0	0-125	10 : 1	
14	L.72	20	Attachment angle	†0-05	6-0	0-125	10 : 1	113
15	DTD.118	24	Web	0-05	6-0	0-25	8 : 1	106, 108
16	L.72	24	Attachment angle	†0-05	6-0	0-125	10 : 1	113
17	DTD.118	24	Web	0-05	6-0	0-25	8 : 1	106, 108
18	L.72	24	Rib web	0-05	6-0	0-25	8 : 1	106, 108
19	DTD.118	22	Angle	†0-05	6-0	0-125	12 : 1	113
20	L.72	22	Bracket	0-05	6-0	0-25	8 : 1	
21	L.72	20	Diaphragm	0-05	8-0	—	—	
22	DTD.118	22	Channel	0-05	6-0	0-25	8 : 1	
23	DTD.118	22	Angle	†0-05	6-0	0-125	12 : 1	
24	DTD.118	22	Channel	†0-05	6-0	0-125	12 : 1	
25	DTD.118	20	Angle	†0-05	6-0	0-125	12 : 1	
26	DTD.118	24	Angle	†0-05	6-0	0-125	12 : 1	
27	DTD.118	24	Riblets	0-05	4-0	0-125	10 : 1	120
28	DTD.118	22	Strips	†0-025	4-0	0-125	10 : 1	
29	DTD.118	12	Wedge strip	†0-025	6-0	0-125	20 : 1	
30	DTD.118	22	Plate	†0-025	6-0	—	—	
31	DTD.118	14	Wedge strip	†0-025	6-0	0-125	20 : 1	
32	DTD.118	16	Wedge strip	†0-025	6-0	0-125	20 : 1	
33	DTD.259	—	Block	†0-025	6-0	—	—	
34	DTD.118	18	Wedge strip	†0-025	6-0	0-125	20 : 1	

All dimensions are quoted in inches

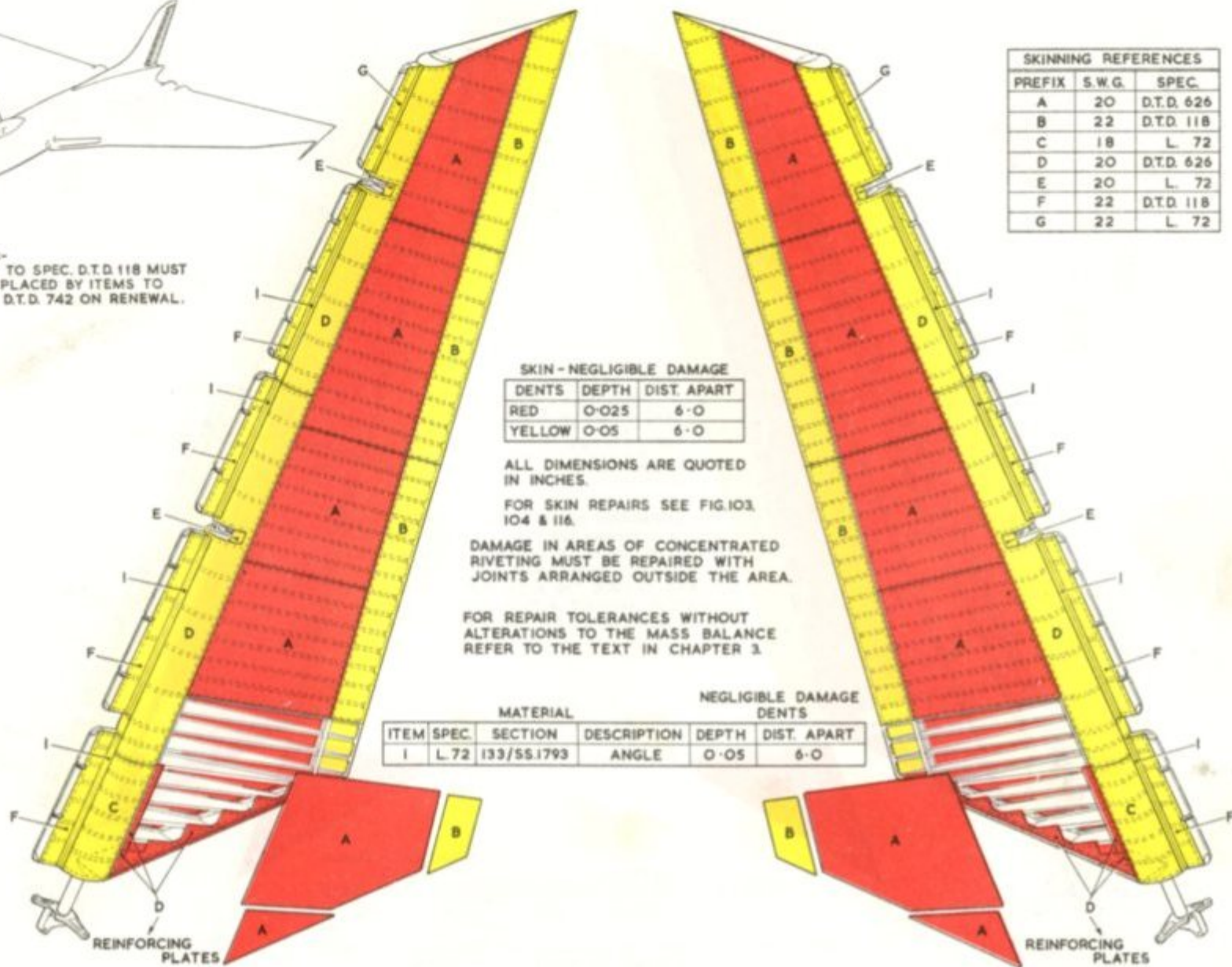
†More expedient to replace than repair

*No repairs permitted

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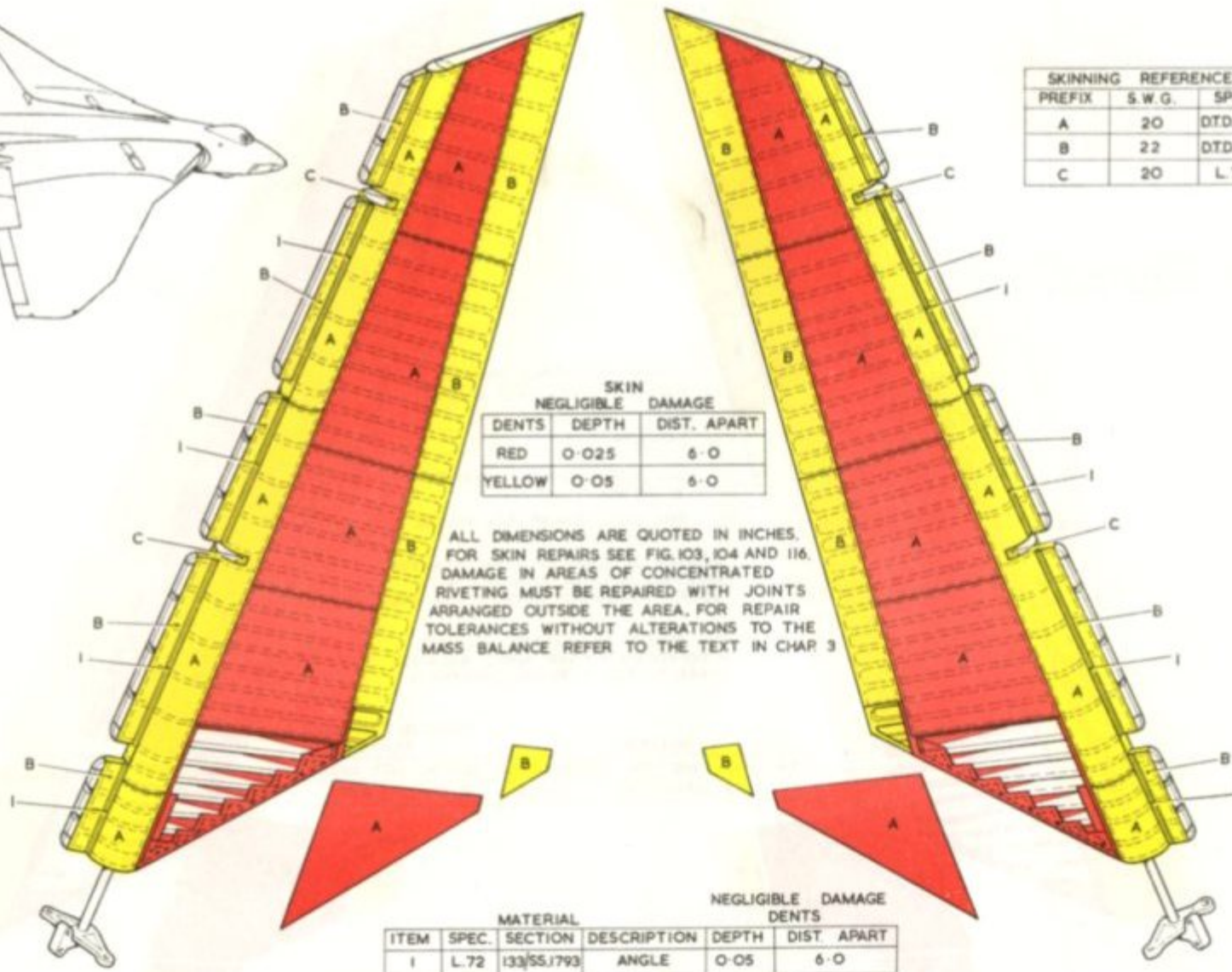
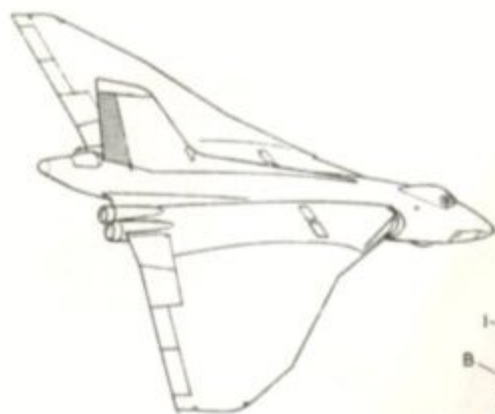
NOTE :-
ITEMS TO SPEC. D.T.D. 118 MUST
BE REPLACED BY ITEMS TO
SPEC. D.T.D. 742 ON RENEWAL.



SKINNING REFERENCES		
PREFIX	S.W.G.	SPEC.
A	20	D.T.D. 626
B	22	D.T.D. 118
C	18	L. 72
D	20	D.T.D. 626
E	20	L. 72
F	22	D.T.D. 118
G	22	L. 72

Fig. 405D Rudder skinning

RESTRICTED



NOTE:--ITEMS TO SPEC. D.T.D. 118 MUST BE REPLACED BY ITEMS TO SPEC. D.T.D. 742 ON RENEWAL OR REPAIR

Fig. 405E Rudder skinning (Post Mod.613)

RESTRICTED

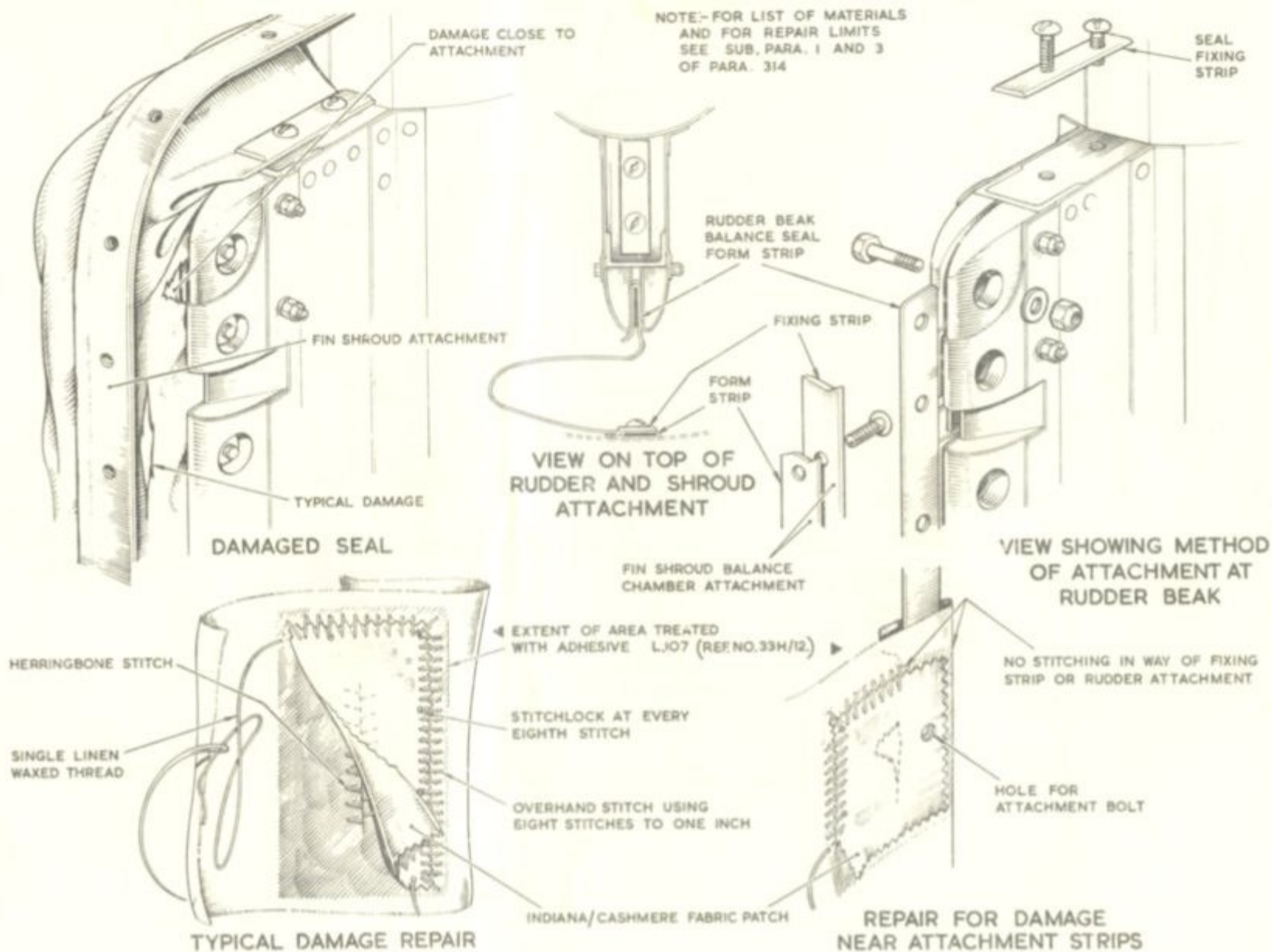


Fig. 406. Rudder balance seal repairs. (Pre Mod. 1408.)

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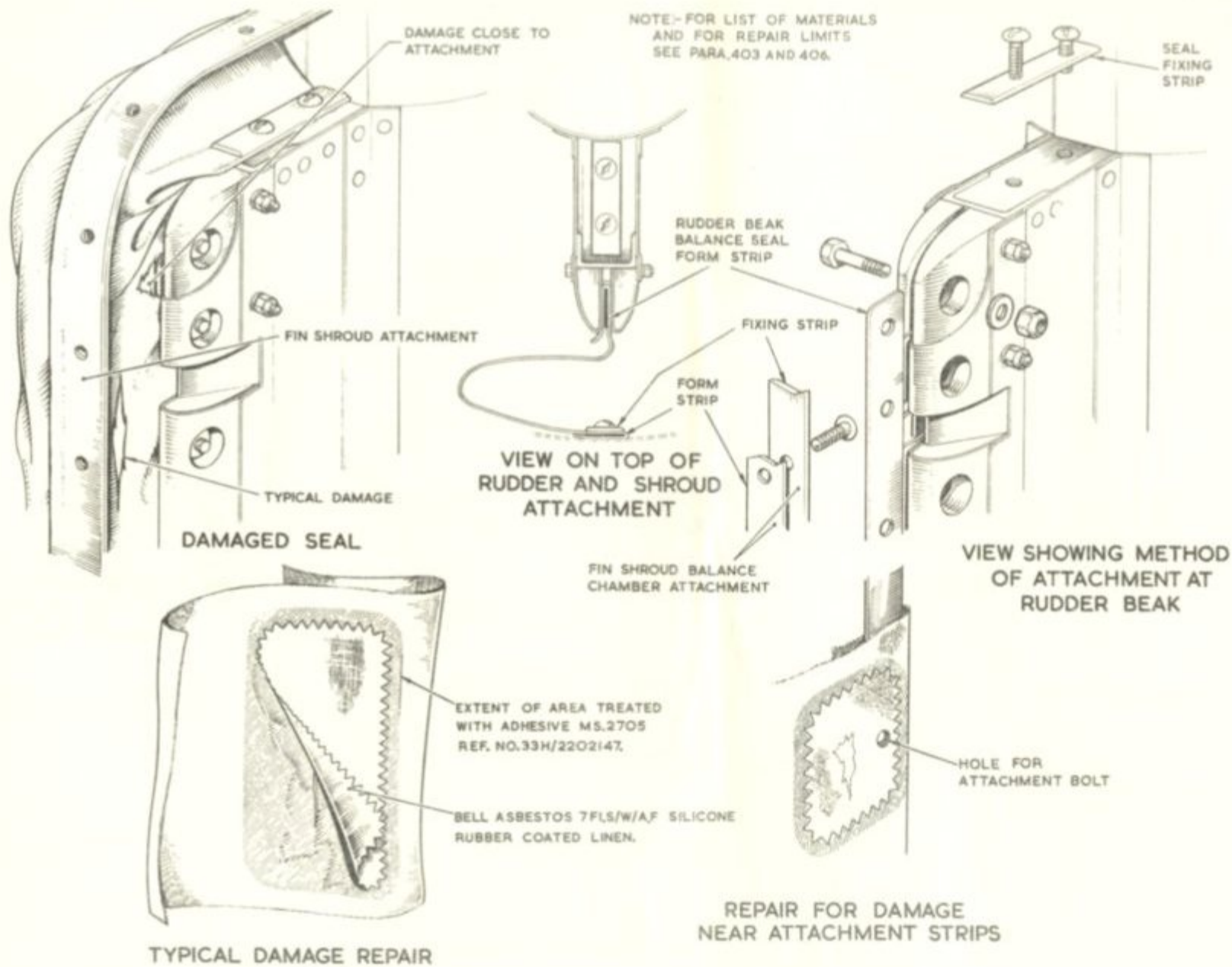


Fig. 406A. Rudder balance seal repairs. (Post Mod. 1408)

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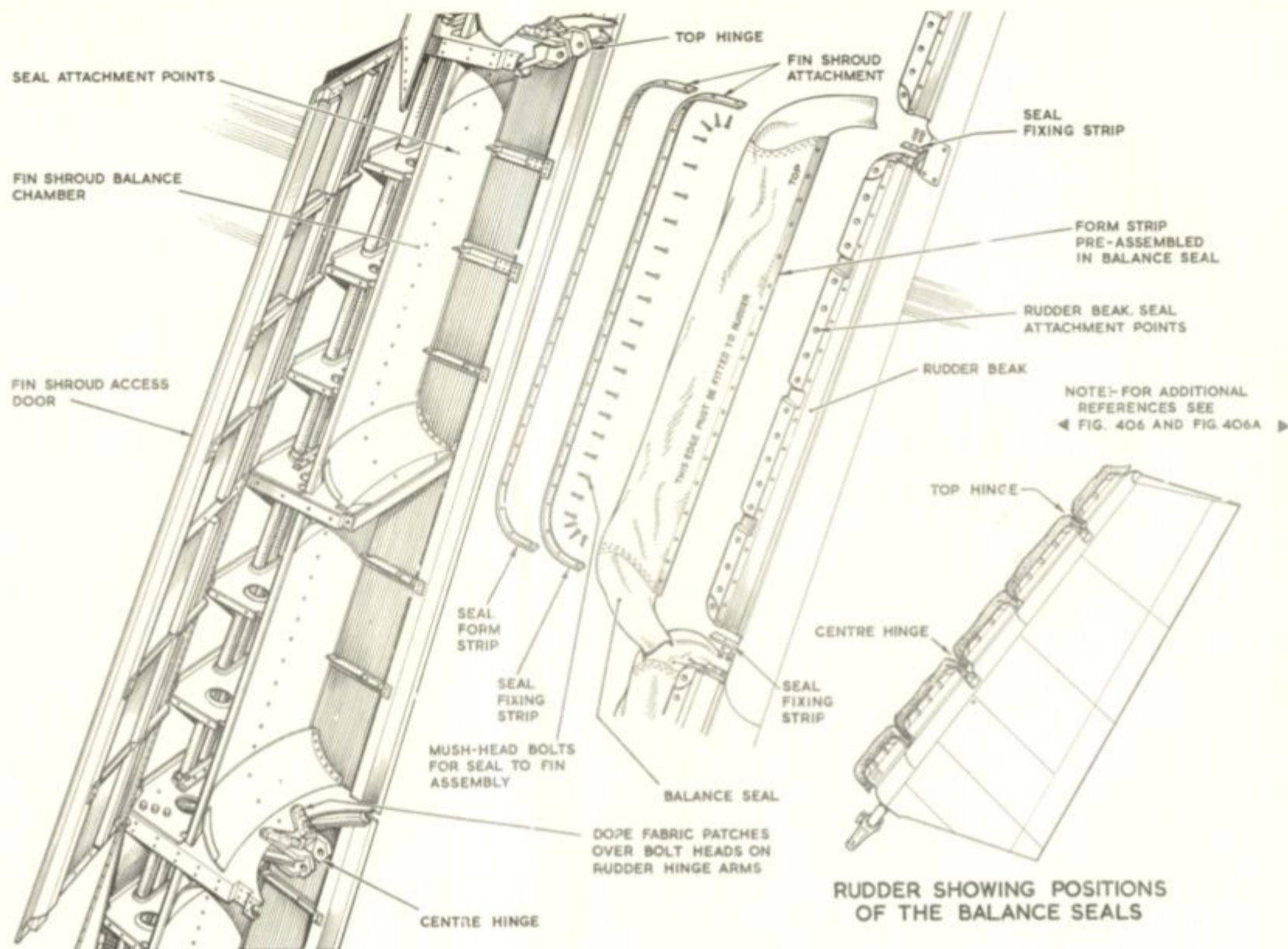


Fig.407. Assembly of rudder balance seal.

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