

March, 1957

A.P.4505, Vol. 6, Part 1

CHAPTER 4

TAIL UNIT

CHAP.

4

RESTRICTED

## Chapter 4 TAIL UNIT

### LIST OF CONTENTS

	<i>Para.</i>
Introduction ... ..	401
Protective treatments ... ..	402
Repairs to rudder balance sealing ...	403

### LIST OF ILLUSTRATIONS

	<i>Fig.</i>
Tail unit key diagram ... ..	401
Fin L/E—front fin post ... ..	402
Fin intermediate structure ... ..	403
Rear fin post—balance chamber access panels ... ..	403A
Fin balance chamber structure ...	403B

	<i>Fig.</i>
Fin cap—rib 20 ... ..	403C
Fin skinning ... ..	404
◀ Rudder leading edge and mass balance ... ..	405
Rudder leading edge and mass balance ... ..	405A

	<i>Fig.</i>
Rudder structure—aft of front spar	405B
Rudder structure—aft of front spar	405C
Rudder skinning ... ..	405D ▶
Rudder balance seal repairs ...	406
Assembly of rudder balance seal ...	407

### 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.

### PROTECTIVE TREATMENTS

**402.** When any repairs are being carried out, protective treatments as laid down in Chap. 1, paras, 134 to 138, should be incorporated.

### REPAIRS TO RUDDER BALANCE SEALING

**403.** Refer to Chap. 3, para. 314 for minor repairs to balance seals, and for illustrations see figs. 406 and 407. 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-head 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 replace before fitting the new seal. The purpose of the patches is to give the seal a smooth run over the bolt heads when the rudder is operated.

(7) Using the damaged seal as a template, assemble the new balance seal as follows. Remove the fin shroud metal "form" strip from the damaged seal, clean off the old adhesive and inspect for damage. If found to be satisfactory, attach the "form" strip to the new seal in exactly the same position as it was when previously fitted to the damaged seal.

(8) The method of attaching the "form" strip is as follows. Using Dunlop adhesive (*Ref. No. 33C/1361*) apply a coat of solution to both the "form" strip and the balance seal. Allow to dry for about 15 mins., then apply a second coat. When both surfaces are tacky, press the fabric firmly round the "form" strip using finger

pressure, or a hand roller.

(9) After the joint has dried out, punch holes in the balance seal where required to align with the holes in the "form" strip.

(10) Check all bolts for damage, renew where necessary.

(11) Dip all bolts in Celloseal DTD.900/431 before assembly.

(12) Assemble the seal to the rudder, following the instructions stencilled on the seal, i.e., "Top" and "This edge must be fitted to the rudder".

(13) Reassemble all the bolts in the seal at the rudder beak, and in the fixing strip at the fin shroud attachment points.

(14) Check the seal for tension when the rudder is operated for full movement. There should be just enough slack in the seal when the rudder is selected to port, or starboard, to ensure that no interference will take place.

(15) Inspect for "foreign" bodies at hinge points, etc., prior to reassembling the bolts in the fin hinged shroud panels.

### Warning

*Personnel carrying out the above operations should be made aware of the danger involved if the controls are functioned when the repair is being embodied, and all necessary precautions should be taken to avoid accidents.*

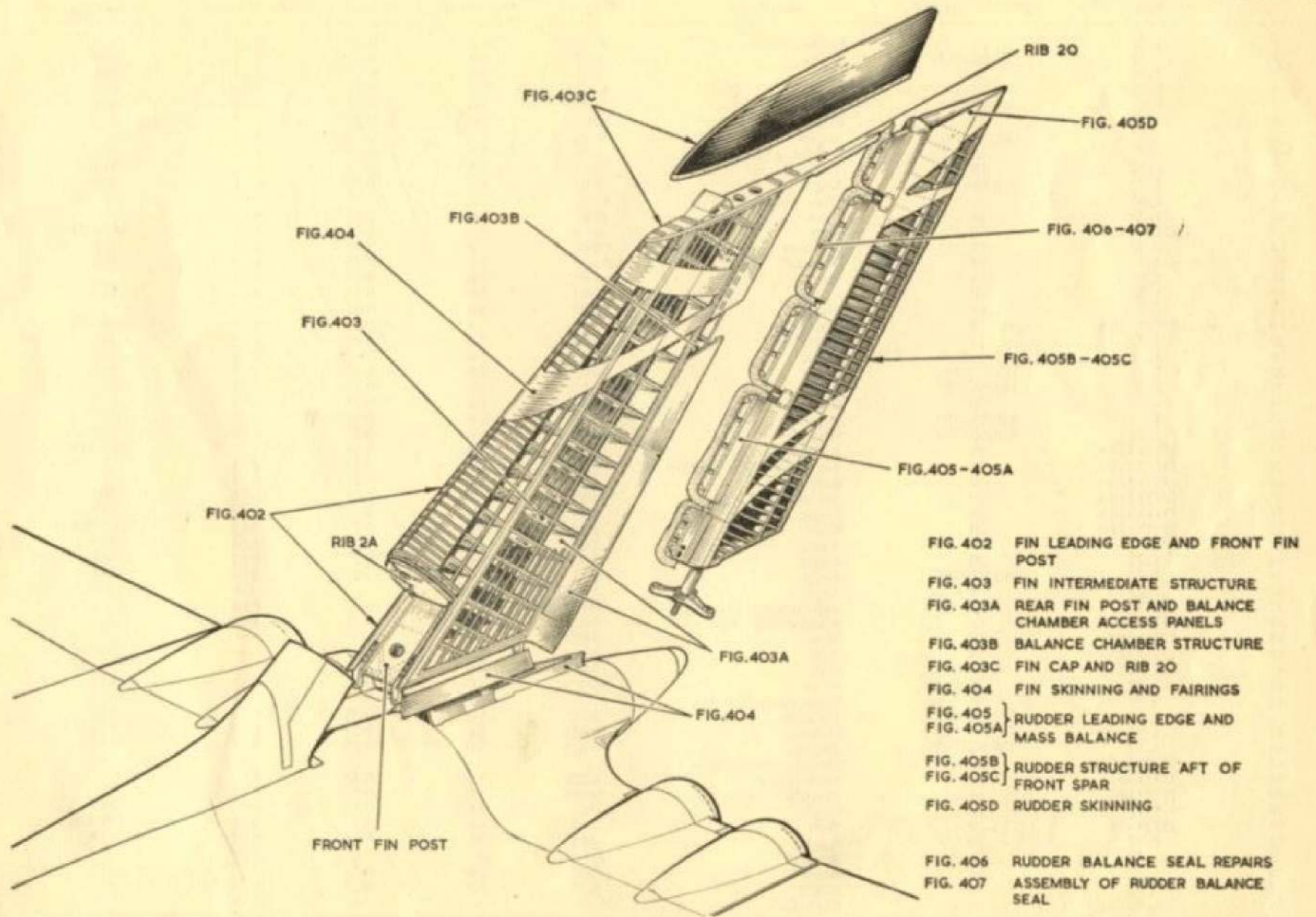


Fig. 401. Tail unit key diagram

RESTRICTED

Key to Fig. 402

Item	Material Spec.	S.W.G. or Section	Description	Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
					Dents	Dist. Apart		
1	L.72	18	Gusset plate	†0-05	3-0	0-25	6:1	—
2	L.72	183/SS1793	Angle	0-025	3-0	0-25	6:1	113
3	L.72	20	Web	0-05	3-0	0-25	10:1	104
4	L.72	60/SS1793	Angle	†0-025	3-0	0-25	6:1	—
5	L.72	60/SS1793	Angle	0-025	3-0	0-25	6:1	113
6	L.72	12	Packing	†0-025	3-0	0-25	8:1	—
7	L.72	12b/SS1793	Angle	†0-05	3-0	0-25	4:1	—
8	L.72	18	Stiffening plate	0-05	3-0	0-25	6:1	—
9	L.72	18	Angle	0-05	3-0	0-25	6:1	114
10	L.72	249/SS1793	Angle	0-05	3-0	0-25	6:1	114
11	L.65	—	Club foot	* —	—	—	—	—
12	L.59	18	Plate	†0-05	3-0	0-25	6:1	—
13	DTD.626	20	Web	0-05	3-0	0-25	8:1	103-104
14	L.72	18	Channel	0-05	3-0	0-25	6:1	108
15	L.72	18	Channel	0-05	3-0	0-25	6:1	108
16	L.72	18	Strip	†0-05	3-0	0-25	6:1	—
17	L.72	20	Angle	0-05	3-0	0-25	6:1	113
18	L.72	18	Plate	0-05	3-0	0-25	6:1	—
19	DTD.118A	18	Web	0-05	3-0	0-25	4:1	103-106
20	L.72	18	Angle	0-05	3-0	0-125	6:1	113
21	L.72	528/SS1793	Angle	0-05	3-0	0-125	6:1	113
22	L.72	12b/SS1793	Angle	0-05	3-0	0-125	8:1	113
23	L.72	183/SS1793	Angle	0-05	3-0	0-125	6:1	113
24	L.72	20	Bracket	†0-05	3-0	0-25	6:1	—
25	L.72	830/SS1793	Stringer	0-05	3-0	0-125	6:1	111
26	L.72	828/SS1793	Stringer	0-05	3-0	0-25	6:1	111
27	DTD.118A	20	Air ducting wall	0-05	3-0	0-25	10:1	103-116
28	DTD.118A	20	Air ducting corrugation	0-05	3-0	0-25	10:1	—
29	DTD.118A	20	Butt strap	0-05	3-0	0-25	6:1	—
30	DTD.118A	20	Air ducting wall	0-05	3-0	0-25	10:1	103
31	DTD.118A	20	Angle	0-05	3-0	0-125	6:1	113
32	DTD.118A	20	Web	0-05	3-0	0-25	4:1	103-106
33	L.72	16	Angle	0-05	3-0	0-25	6:1	113
34	L.72	20	Angle	0-05	3-0	0-25	6:1	113
35	L.72	762/SS1793	Angle	0-05	3-0	0-25	6:1	113
36	L.72	8	Angle	0-025	3-0	—	—	—
37	DTD.687	14	Reinforcing plate	0-025	3-0	0-25	8:1	—
38	DTD.687	18	Reinforcing plate	0-025	3-0	0-25	8:1	—
39	DTD.687	12	Web	0-025	3-0	—	—	103-116
40	DTD.687	14	Web	0-025	3-0	—	—	103-116
41	DTD.687	16	Web	0-025	3-0	—	—	113
42	L.72	18	Angle	0-025	3-0	0-25	8:1	—
43	S.99	—	Front fin post fitting	* —	—	—	—	—
44	L.72	219/SS1793	Stiffener	0-025	3-0	0-25	8:1	112
45	L.72	213/SS1793	Stiffener	0-025	3-0	0-25	8:1	113
46	L.72	528/SS1793	Stiffener	0-025	3-0	0-25	8:1	113
47	DTD.363A	—	Front fin post boom	* —	—	—	—	—
48	DTD.687	14	Joint plate	0-025	3-0	0-25	8:1	—
49	DTD.687	14	Doubling plate	0-025	3-0	0-25	8:1	—
50	L.72	16	Angle	0-05	3-0	0-25	6:1	113
51	DTD.118	20	Web	0-05	3-0	0-25	4:1	103-106
52	L.72	20	Angle	0-05	3-0	0-25	6:1	113
53	L.72	20	Bracket	†0-05	3-0	0-25	6:1	—
54	L.72	18	Angle	0-05	3-0	0-25	6:1	113
55	L.72	18	Angle	0-05	3-0	0-25	6:1	113
56	L.65	—	Club foot	* —	—	—	—	—

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

RESTRICTED

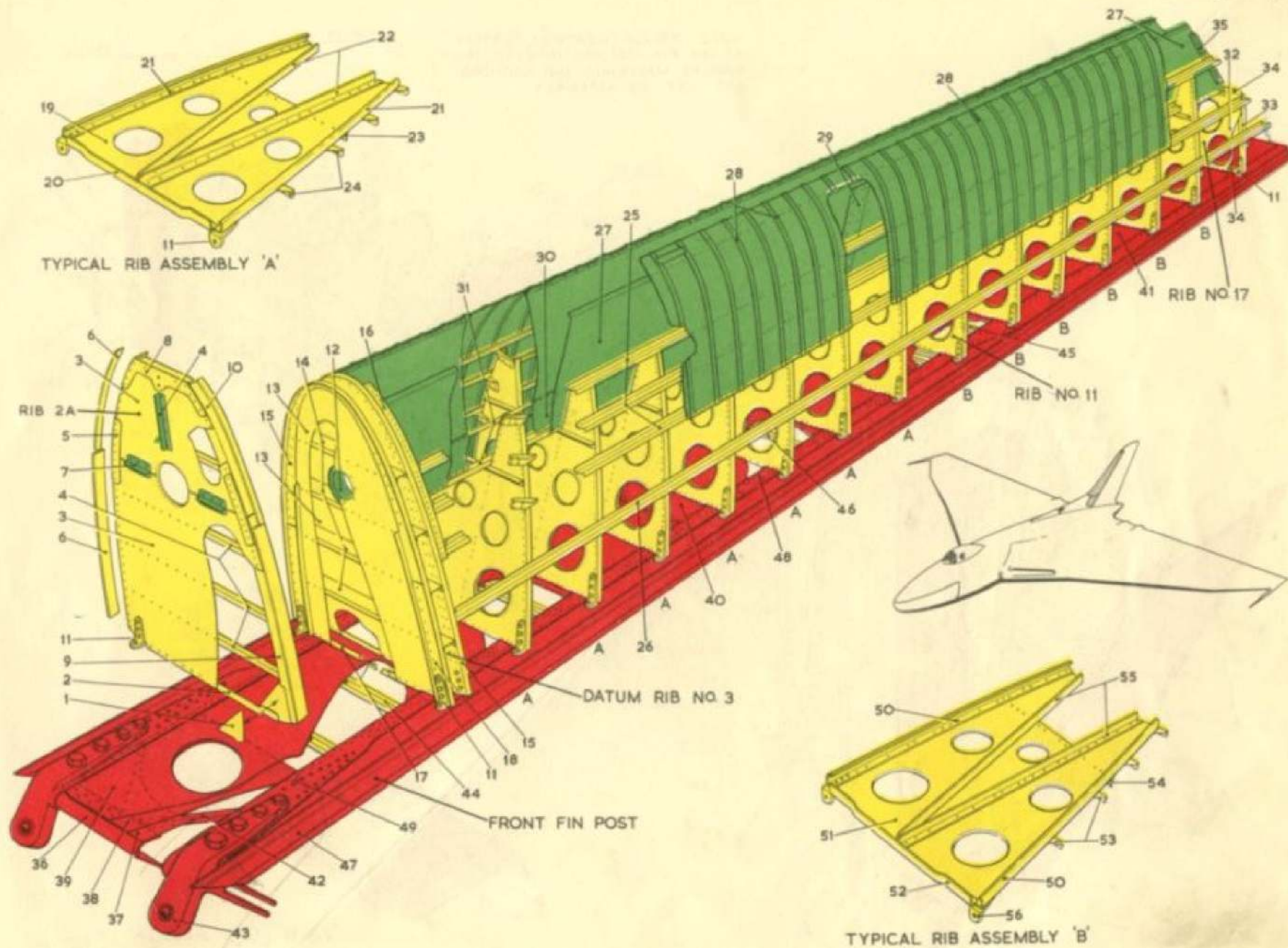


Fig.402 - Fin L/Edge - Front fin post RESTRICTED

(A.L.14, Sept. 58)



NOTE: PREFIX 'IDENTICAL' LETTERS AT THE RIB STATIONS INDICATE THAT SIMILAR MATERIALS AND SECTIONS ARE USED ON ASSEMBLY.

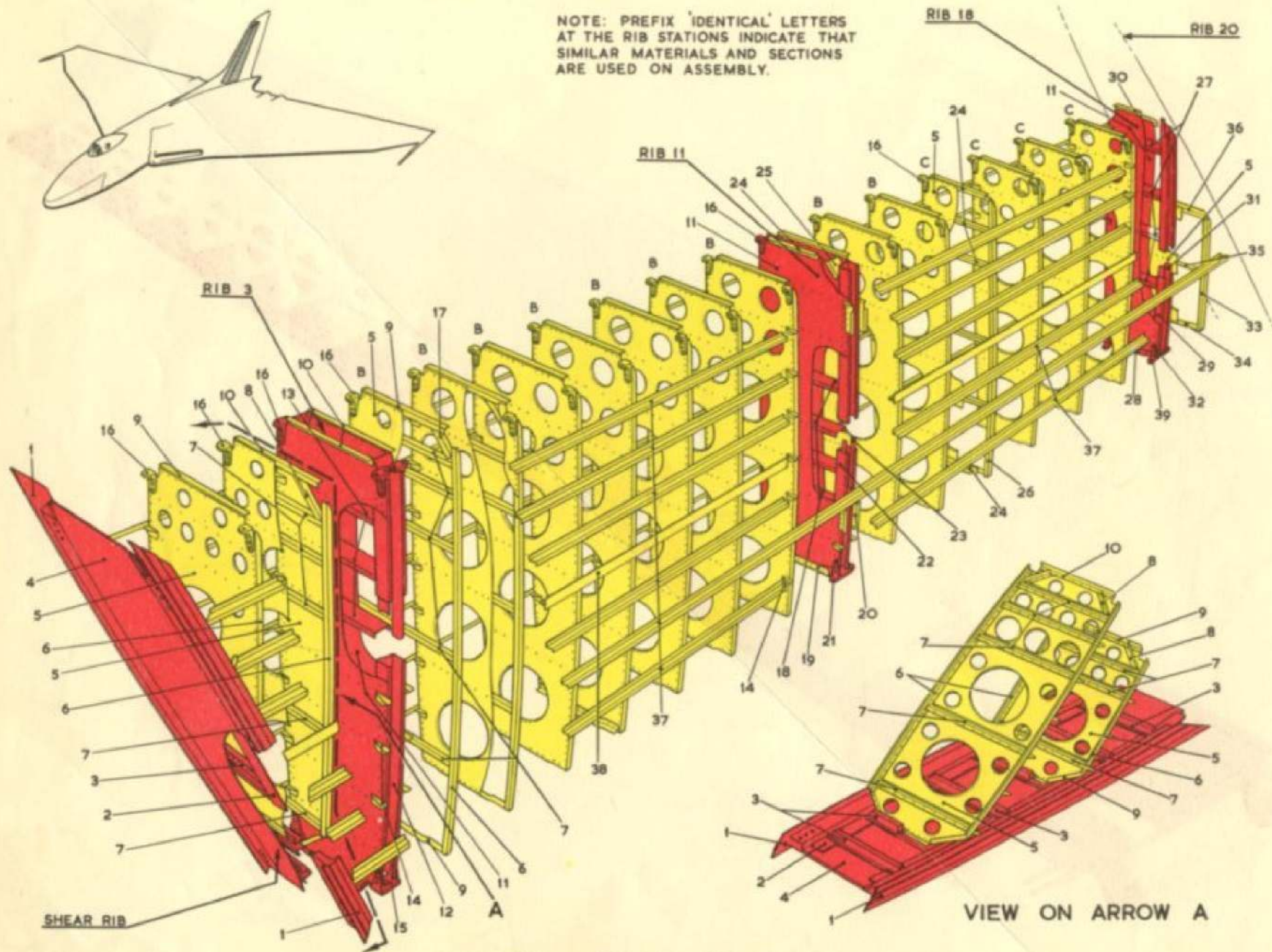


Fig.403 - Fin intermediate structure RESTRICTED

Key to Fig. 403

Item	Material Spec.	S.W.G. or Section	Description	Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
					Dents Dist. Apart	Dia.		
1	L.65	—	Shear rib boom	0-025	3-0	—	—	—
2	DTD.687	8	Joint strip	0-025	3-0	—	—	—
3	L.72	211/SS1793	Stiffener	0-025	3-0	—	—	112
4	DTD.687	8	Shear rib web	0-025	3-0	0-25	20 : 1	—
5	DTD.118	20	Rib web	0-05	3-0	0-25	4 : 1	—
6	L.72	528/SS1793	Angle	0-05	3-0	0-125	8 : 1	113
7	L.72	664/SS1793	Angle	0-05	3-0	0-125	8 : 1	113
8	L.72	786/SS1793	Angle	†0-05	3-0	0-25	6 : 1	—
9	L.72	12a/SS1793	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	DTD.626	20	Rib web	0-025	3-0	0-25	20 : 1	104
12	L.72	153/SS1793	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	†0-05	3-0	0-25	6 : 1	—
15	S.99	—	Bracket	* —	—	—	—	—
16	L.65	—	Club foot bracket	* —	—	—	—	—
17	L.72	785/SS1793	Angle	†0-05	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	†0-025	3-0	0-25	6 : 1	—
21	S.99	—	Bracket	* —	—	—	—	—
22	L.72	829/SS1793	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	†0-025	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/SS1793	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/SS1793	Boom	0-025	3-0	0-125	8 : 1	113
34	L.72	12a/SS1793	Angle	0-025	3-0	0-125	8 : 1	113
35	L.72	664/SS1793	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/SS1793	Stringer 'Z' section	0-05	3-0	0-25	6 : 1	111
38	L.65	58/SS3075	Stringer 'T' section	0-025	3-0	0-25	8 : 1	—
39	S.99	—	Bracket	* —	—	—	—	—

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

Key to Fig. 403A

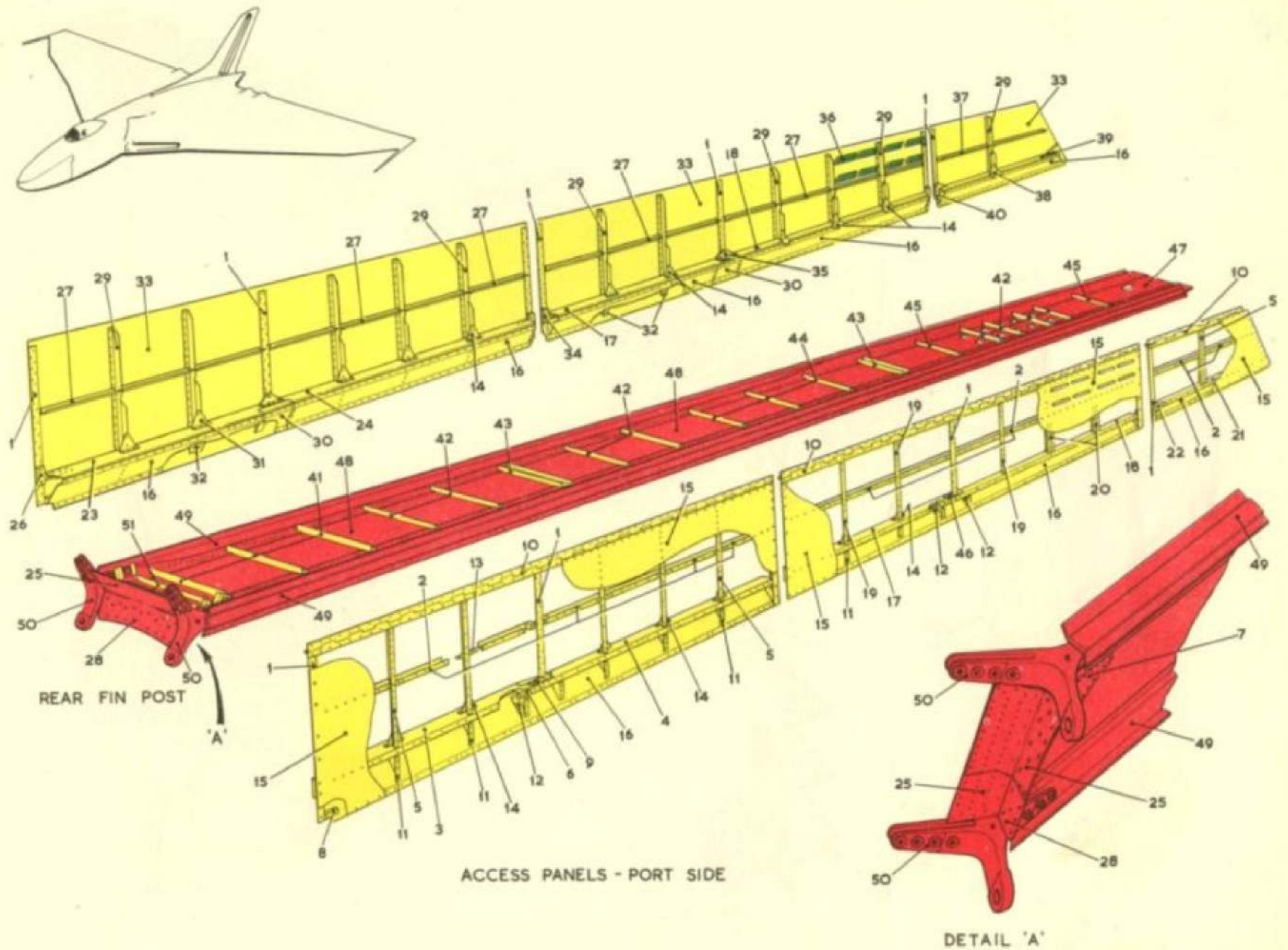
Item	Material Spec.	S.W.G. or Section	Description	Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
					Dents Dist. Apart	Dia.		
1	DTD.626	16	Packing	†0-025	3-0	0-25	6:1	—
2	L.72	20	Channel stiffener	0-025	3-0	0-25	6:1	107-108
3	L.72	18	Beam	0-025	3-0	0-25	6:1	108
4	L.72	887/SS1793	Beam	0-025	3-0	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	†0-025	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	†0-025	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	†0-025	3-0	—	—	—
14	L.72	18	Angle bracket	†0-025	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/SS1793	Beam channel	0-025	3-0	—	—	108
18	L.72	891/SS1793	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/SS1793	Beam	0-025	3-0	—	—	108
25	S.514	16	Angle plate	* —	—	—	—	—
26	L.65	—	Fitting	*0-025	3-0	—	—	—
27	L.72	20	Angle stiffener	†0-025	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	†0-025	3-0	—	—	—
31	L.65	295/SS3075	Fitting	*0-025	3-0	—	—	—
32	L.72	20	Bracket	0-025	3-0	0-25	6:1	115
33	DTD.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	†0-05	3-0	0-25	6:1	—
37	L.72	20	Channel	0-025	3-0	0-25	6:1	—
38	L.72	18	Gusset	†0-025	3-0	0-25	6:1	—
39	L.72	892/SS1793	Beam channel	0-025	3-0	—	—	—
40	L.65	—	Plate	*0-025	3-0	—	—	—
41	L.72	528/SS1793	Stiffener	†0-025	3-0	0-25	6:1	—
42	L.72	665/SS1793	Stiffener	†0-025	3-0	0-25	6:1	—
43	L.72	54/SS1793	Stiffener	0-025	3-0	0-25	6:1	108
44	L.72	522/SS1793	Stiffener	†0-025	3-0	0-25	6:1	—
45	L.72	289/SS1793	Stiffener	†0-025	3-0	0-25	6:1	—
46	L.65	—	Fitting	*0-025	3-0	0-25	6:1	—
47	DTD.687	16	Web	0-025	3-0	—	—	103-116
48	DTD.687	14	Web	0-025	3-0	—	—	103-116
49	DTD.363A	—	Boom	0-025	3-0	—	—	—
50	S.99	—	Fin post joint fitting	* —	—	—	—	—
51	L.72	20	Angle	0-025	3-0	0-25	6:1	—

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

RESTRICTED



REAR FIN POST

ACCESS PANELS - PORT SIDE

DETAIL 'A'

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

(A.L.14, Sept. 58)

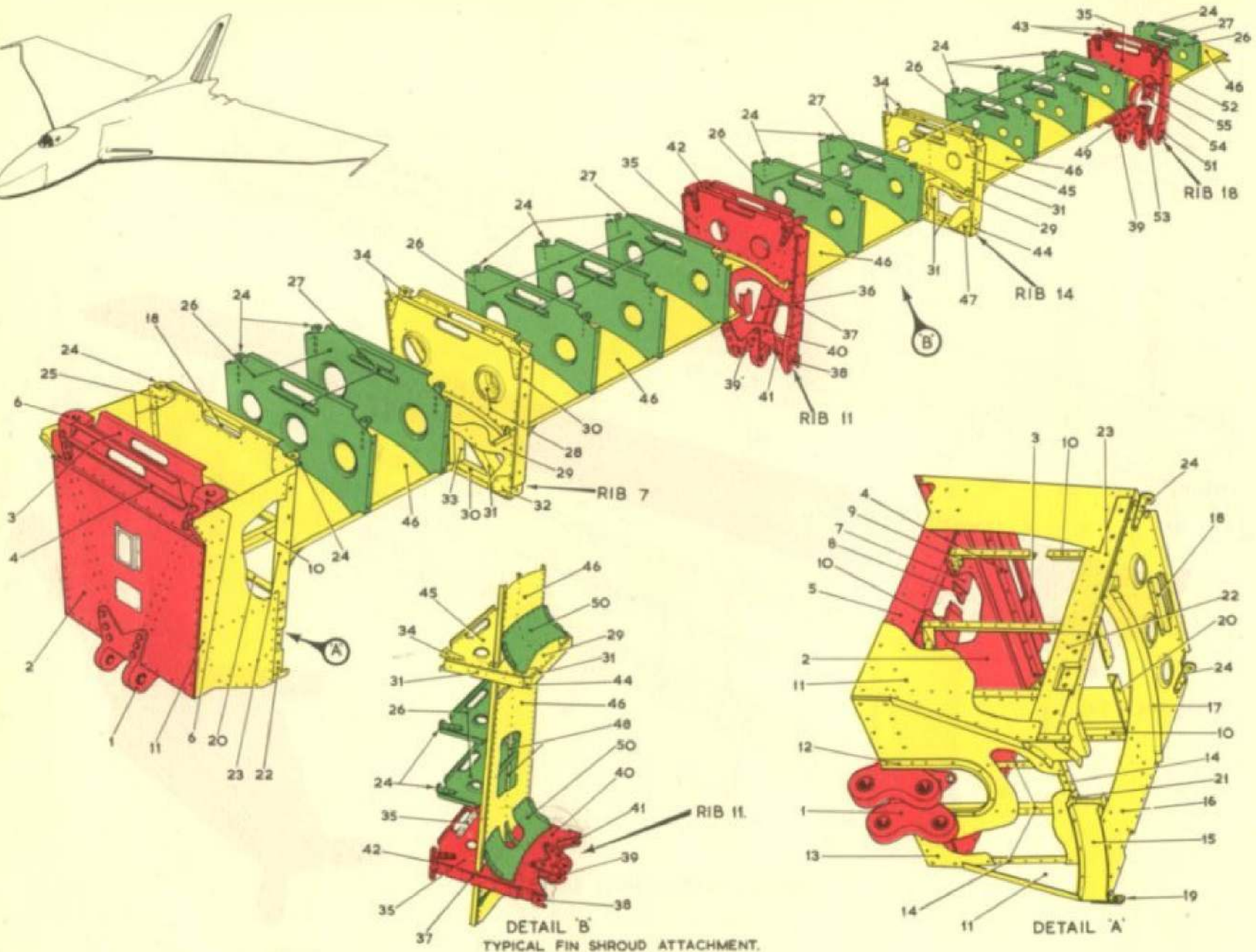
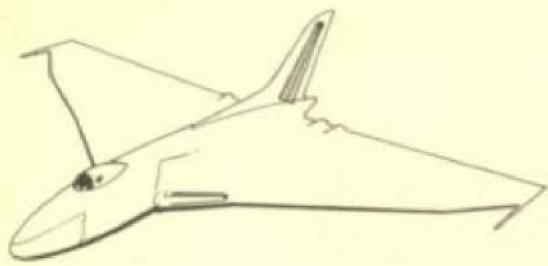


Fig.403B - Fin balance chamber structure  
RESTRICTED

Key to Fig. 403B

Item	Material Spec.	S.W.G. or Section	Description	Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
					Dents Dist. Apart	Dia.		
1	DTD.683 or L.65	—	Bracket	* —	—	—	—	—
2	DTD.626	20	Web	0-025	3-0	—	—	103
3	L.72	18	Bracket	0-025	3-0	—	—	108
4	L.72	788/SS1793	Angle	0-025	3-0	—	—	113
5	L.72	100/SS1793	Channel	0-025	3-0	—	—	108
6	S.99	—	Bracket	* —	—	—	—	—
7	L.72	153/SS1793	Boom	0-025	3-0	—	—	108
8	L.72	12	Packing	†0-025	3-0	—	—	—
9	L.72	20	Bracket	†0-05	3-0	0-25	6:1	—
10	L.72	828/SS1793	Stringer	0-05	3-0	0-25	8:1	111
11	DTD.626	18	Skin	0-05	3-0	—	—	103-116
12	L.72	18	Angle	†0-05	3-0	0-25	8:1	—
13	L.72	20	Diaphragm	0-05	3-0	—	—	103-116
14	L.72	762/SS1793	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	DTD.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	†0-05	3-0	0-25	6:1	—
19	S.510	16	Bracket	†0-025	3-0	—	—	—
20	L.72	863/SS1793	Angle	0-05	3-0	0-25	8:1	—
21	DTD.626	20	Bottom web	†0-05	3-0	0-25	8:1	—
22	S.510	18	Channel	†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	†0-025	3-0	—	—	—
25	L.72	20	Sealing plate	†0-05	3-0	0-25	4:1	—
26	L.72	20	Pressing	0-10	3-0	0-5	6:1	115
27	L.72	20	Angle bracket	†0-05	3-0	0-25	6:1	—
28	L.72	22	Doubling plate	0-10	3-0	0-25	6:1	115
29	DTD.118	22	Web	0-10	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/SS1793	Channel	0-05	3-0	0-25	8:1	107-108
32	L.72	20	Gusset plate	†0-05	3-0	0-25	8:1	—
33	L.72	22	Channel	†0-05	3-0	0-25	8:1	—
34	L.72	20	Angle bracket	†0-05	3-0	—	—	—
35	L.72	20	Doubling plate	†0-05	3-0	0-25	8:1	—
36	S.514	16	Channel	0-05	3-0	—	—	—
37	L.72	100/SS1793	Channel	0-05	3-0	0-25	8:1	108
38	S.510	20	Channel	†0-05	3-0	0-25	8:1	—
39	DTD.683 or L.65	—	Bracket	* —	—	—	—	—
40	DTD.626	20	Web	0-025	3-0	—	—	103
41	L.72	100/SS1793	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	0-10	3-0	0-25	6:1	—
46	L.72	22	Diaphragm shroud skins	0-025	3-0	—	—	104
47	L.72	20	Gusset plate	†0-05	3-0	0-25	8:1	—
48	L.72	20	Angle	0-05	3-0	0-25	8:1	113
49	DTD.626	20	Web	0-025	3-0	—	—	—
50	S.510	24	Corner bracket	0-10	3-0	—	—	104
51	S.510	22	Channel	†0-05	3-0	0-25	8:1	—
52	L.72	100/SS1793	Channel	0-05	3-0	0-25	8:1	108
53	L.72	20	Channel	0-05	3-0	—	—	108
54	L.72	16	Packing	†0-025	3-0	—	—	—
55	L.72	153/SS1793	Boom	0-025	3-0	—	—	108

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

RESTRICTED

(A.L.14, Sep. 58)

Key to Fig. 403C

Item	Material Spec.	S.W.G. or Section	Description	Depth	Negligible Damage		Holes Pitch Ratio	Repair Fig.
					Dents Dist. Apart	Dia.		
1	DTD.5511	Felt layers of Durestos	Fin tip	0.05	10	—	—	
2	L.72	16	Attachment plates	†0.025	3.0	—	—	—
3	L.4 or L.59	16	Nose attachment plate	†0.025	3.0	—	—	—
4	L.72	18	Web	0.05	3.0	0.25	6:1	—
5	L.72	18	Tail piece	†0.05	3.0	0.25	6:1	—
6	L.72	18	Packings	†0.05	3.0	—	—	—
7	L.72	14	Packing strips	†0.05	3.0	—	—	—
8	L.72	22	Packing strip	†0.05	3.0	—	—	—
9	L.72	18	Packing strip	†0.05	3.0	—	—	—
10	L.59	16	Top rib fairing	0.10	3.0	—	—	—
11	L.59	18	Doubling plate	0.05	3.0	0.25	6:1	—
12	L.72	183/SS1793	Stiffener	0.05	3.0	0.25	6:1	113
13	L.72	16	Bracket	0.05	3.0	0.25	6:1	113
14	L.72	18	Bracket	0.05	3.0	0.25	6:1	115
15	L.72	16	Plate	0.10	3.0	0.25	6:1	103-104
16	L.72	24	Bracket	0.10	3.0	0.25	4:1	103-115
17	L.72	16	Bracket	†0.05	3.0	0.25	6:1	—
18	L.72	18	Joint plate	†0.05	3.0	0.25	6:1	—
19	L.72	16	Lipped angle	†0.05	3.0	0.25	8:1	—
20	L.72	11	Packing	†0.05	3.0	—	—	—
21	L.72	12	Packing	†0.05	3.0	—	—	—
22	L.72	18	Boom	0.025	3.0	0.25	8:1	—
23	L.72	18	Angle strap	†0.025	3.0	0.25	6:1	—
24	L.72	18	Cap	†0.05	3.0	0.25	6:1	—
25	L.72	16	Plate	0.10	3.0	—	—	103
26	L.72	16	Channel	0.05	3.0	0.25	6:1	115
27	L.72	18	Bracket	0.05	3.0	0.25	6:1	113
28	L.72	16	Angle	0.05	3.0	0.25	6:1	114

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

RESTRICTED

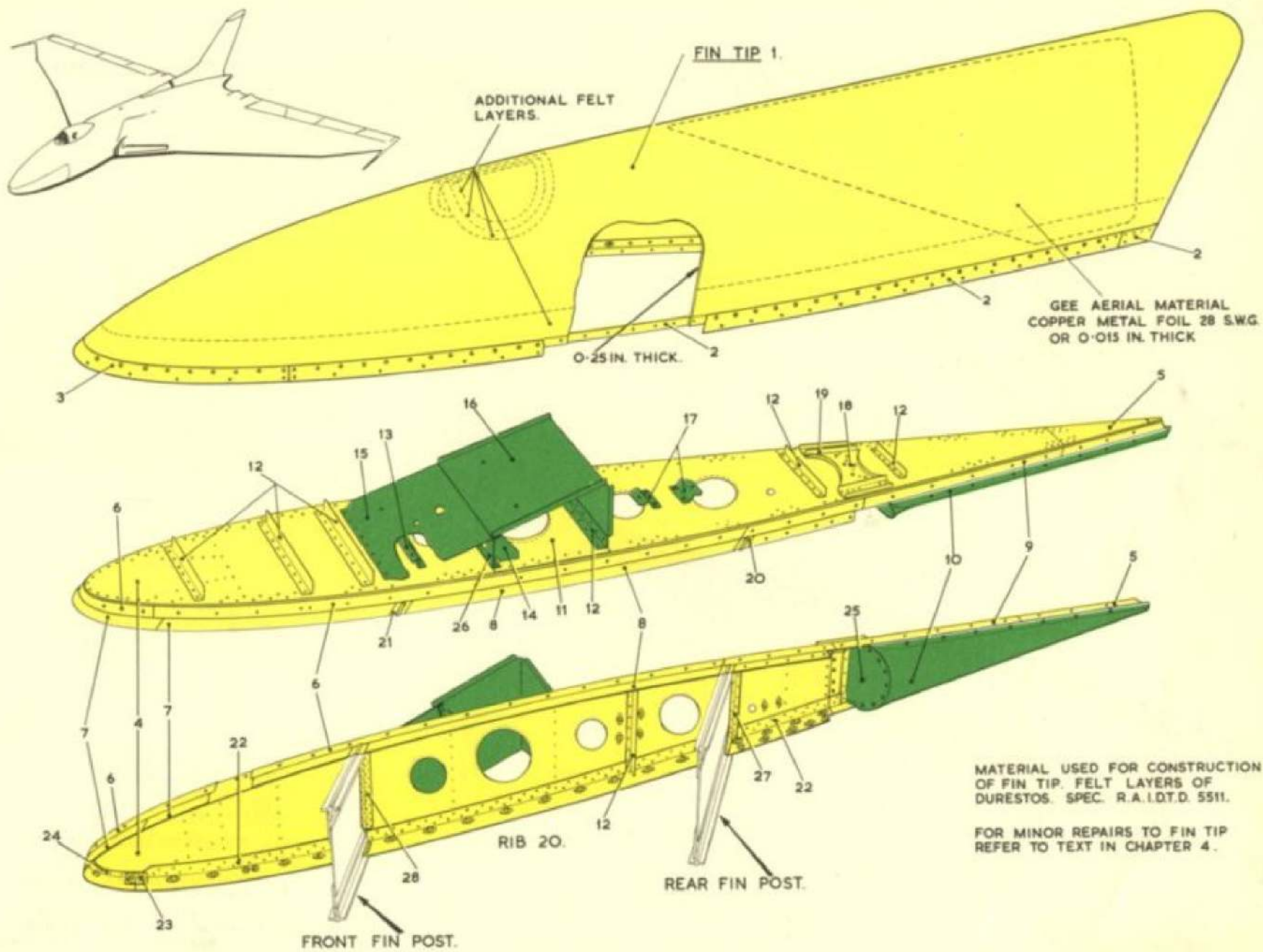
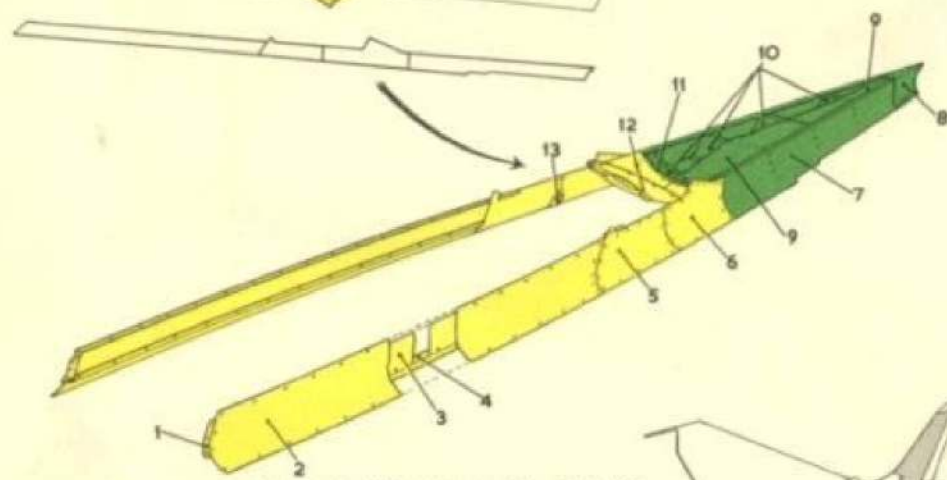
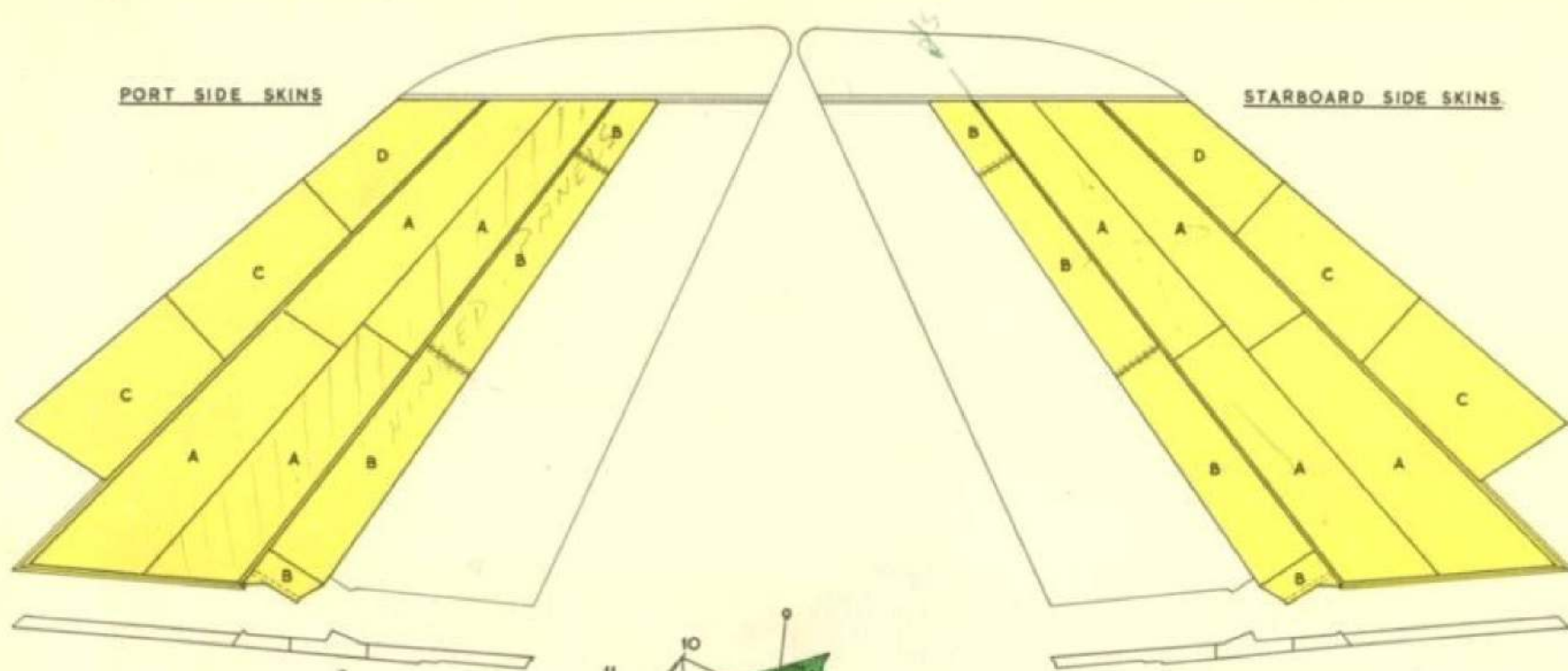
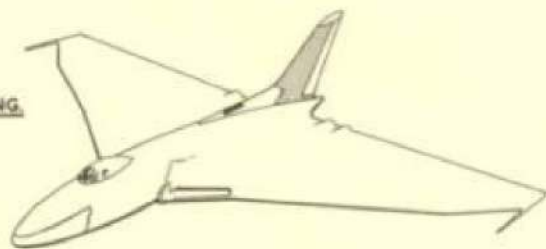


Fig.403C - Fin cap - Rib 20  
RESTRICTED



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 Spec.	S.W.G. or Section	Description	Depth	Negligible Damage			Repair Fig.
					Dents	Holes	Pitch Ratio	
					Dist. Apart	Dia.		
1	L.72	18	Strap plate	†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	†0.05	3.0	—	—	—

All dimensions are quoted in inches

† More expedient to renew than repair

\* No repairs permitted

RESTRICTED

Key to Fig. 405

Item	Spec.	Material S.W.G. or Section	Description	Negligible Damage			Holes Pitch Ratio	Repair Fig.
				Dents Depth	Dist. Apart	Dia.		
1	L.72	22	Seal form strip	†0.05	3.0	0.125	8:1	
2	L.34	D.R.B.59	Seal fixing strip	†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	0.10	3.0	—	—	
5	L.65	—	Balance support member	†0.05	3.0	0.125	8:1	
6	L.72	18	Plate	†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	
9	L.72	10	Reinforcing plate	†0.025	3.0	0.125	10:1	108
10	L.65	—	Block	* —	—	—	—	
11	L.65	—	Bracket	* —	—	—	—	
12	L.72	12	Strip	†0.025	3.0	0.125	10:1	
13	L.72	18	Plate	†0.05	6.0	0.25	6:1	
14	L.72	183/SS.1793	Angle	0.05	6.0	0.125	8:1	
15	L.72	24	Former pressing	0.05	3.0	0.25	6:1	113
16	L.72	183/SS.1793	Angle	0.05	6.0	0.125	10:1	108
17	L.72	18	Plate	0.05	6.0	0.125	10:1	113
18	L.72	24	Former pressing	0.05	3.0	0.25	4:1	
19	L.77 or DTD.683	—	Bracket	* —	—	—	—	108
20	S.11 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	
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	108
26	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6:1	
27	L.72	22	Former pressing	0.05	3.0	0.25	6:1	108
28	L.72	22	Gusset	†0.05	3.0	0.125	6:1	108
29	L.72	14	Foot bracket	*0.025	6.0	—	—	
30	L.72	24	Former pressing	0.05	3.0	0.25	6:1	
31	L.72	776/SS.1793	Balance channel	0.05	6.0	0.25	6:1	108
32	L.72	22	Plate	†0.05	6.0	0.25	6:1	
33	L.72	20	Frame plate	†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	†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	†0.05	6.0	0.125	6:1	
40	L.72	24	Angle	†0.05	6.0	0.125	6:1	113
41	DTD.687	16	Web	0.10	6.0	0.25	10:1	
42	DTD.687	18	Web	0.10	6.0	0.25	10:1	113
43	DTD.5074	415/SS.3075	Spar boom	—	—	—	—	
44	L.72	18	Plate	†0.05	6.0	0.25	8:1	
45	L.72	10	Plate	† —	—	—	—	
46	L.72	20	Angle	† —	—	—	—	
47	L.72	18	Strap plate	†0.05	6.0	0.125	6:1	

All dimensions are quoted in inches

†More expedient to replace than repair

\*No repairs permitted

RESTRICTED

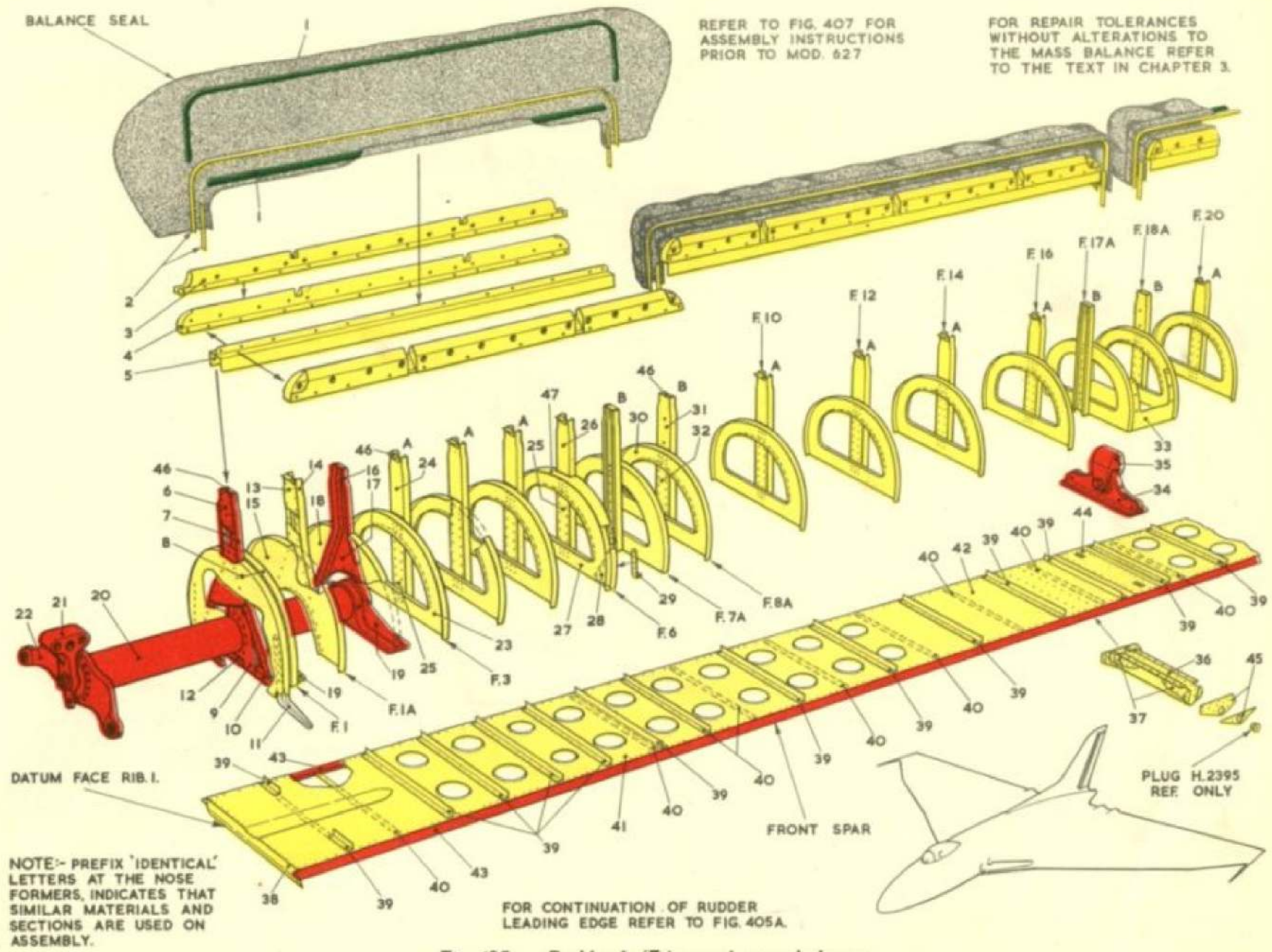
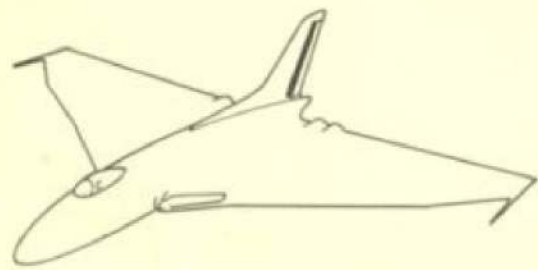
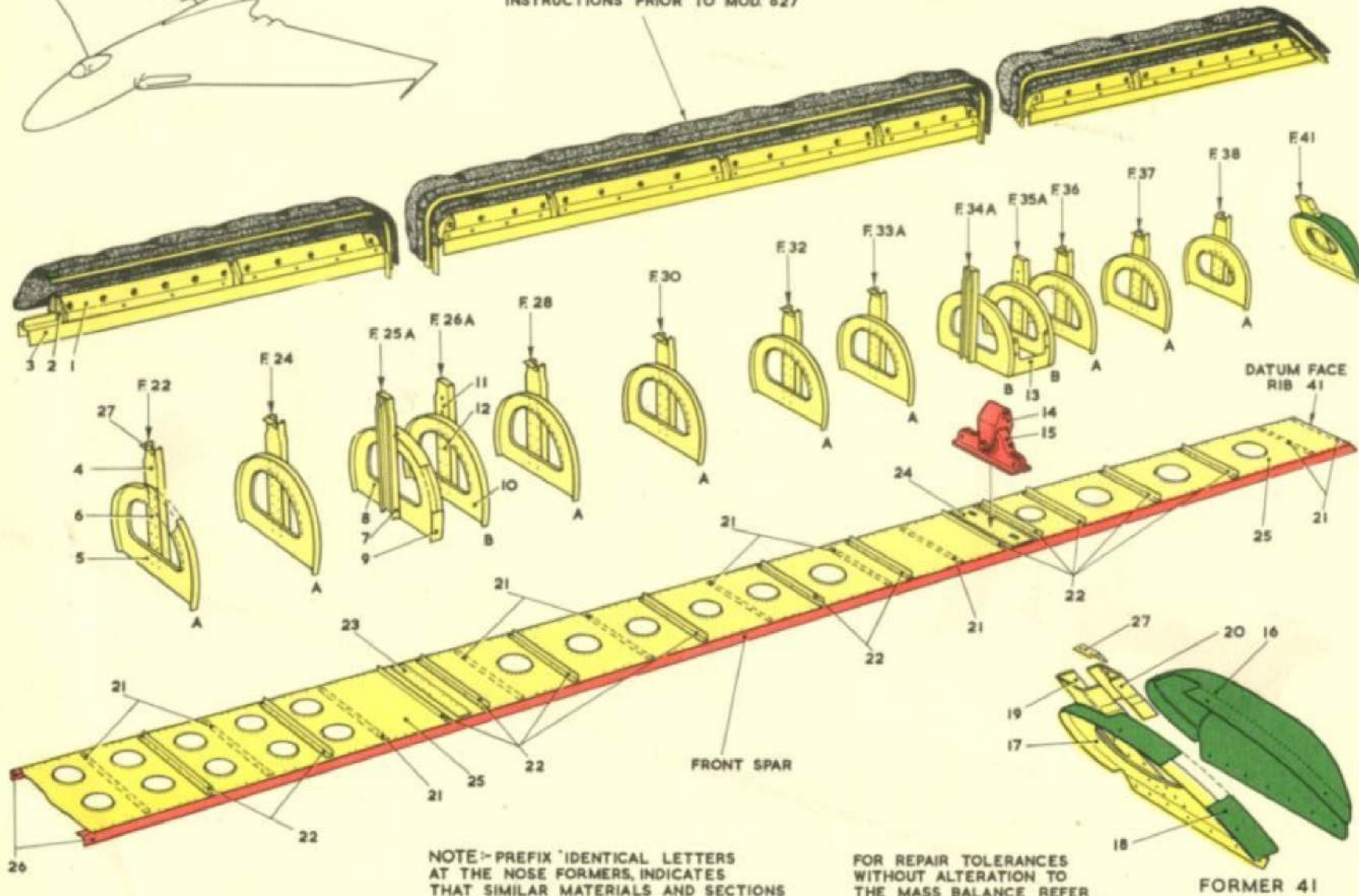


Fig.405 - Rudder L/Edge and mass balance

RESTRICTED



REFER TO FIG. 407 FOR ASSEMBLY INSTRUCTIONS PRIOR TO MOD. 627



FOR CONTINUATION OF RUDDER L/EDGE REFER TO FIG. 405.

NOTE: PREFIX IDENTICAL LETTERS AT THE NOSE FORMERS, INDICATES THAT SIMILAR MATERIALS AND SECTIONS ARE USED ON ASSEMBLY.

FOR REPAIR TOLERANCES WITHOUT ALTERATION TO THE MASS BALANCE REFER TO THE TEXT IN CHAPTER 3.

Fig. 405A Rudder L/Edge and Mass balance

RESTRICTED

Key to Fig. 405A

Item	Spec.	Material S.W.G. or Section	Description	Depth	Dents		Negligible Damage		Repair Fig. No.
					Dist. Apart	Dia.	Holes Pitch Ratio		
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	10.05	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	10.05	6.0	0.125	6:1	108	
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	10.05	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	10.05	6.0	0.125	6:1	113	
22	L.72	797/SS.1793	Angle	10.05	6.0	0.125	6:1	113	
23	DTD.687	18	Strap	10.05	6.0	0.125	6:1		
24	L.72	18	Plate	10.05	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

Key to Fig. 405B

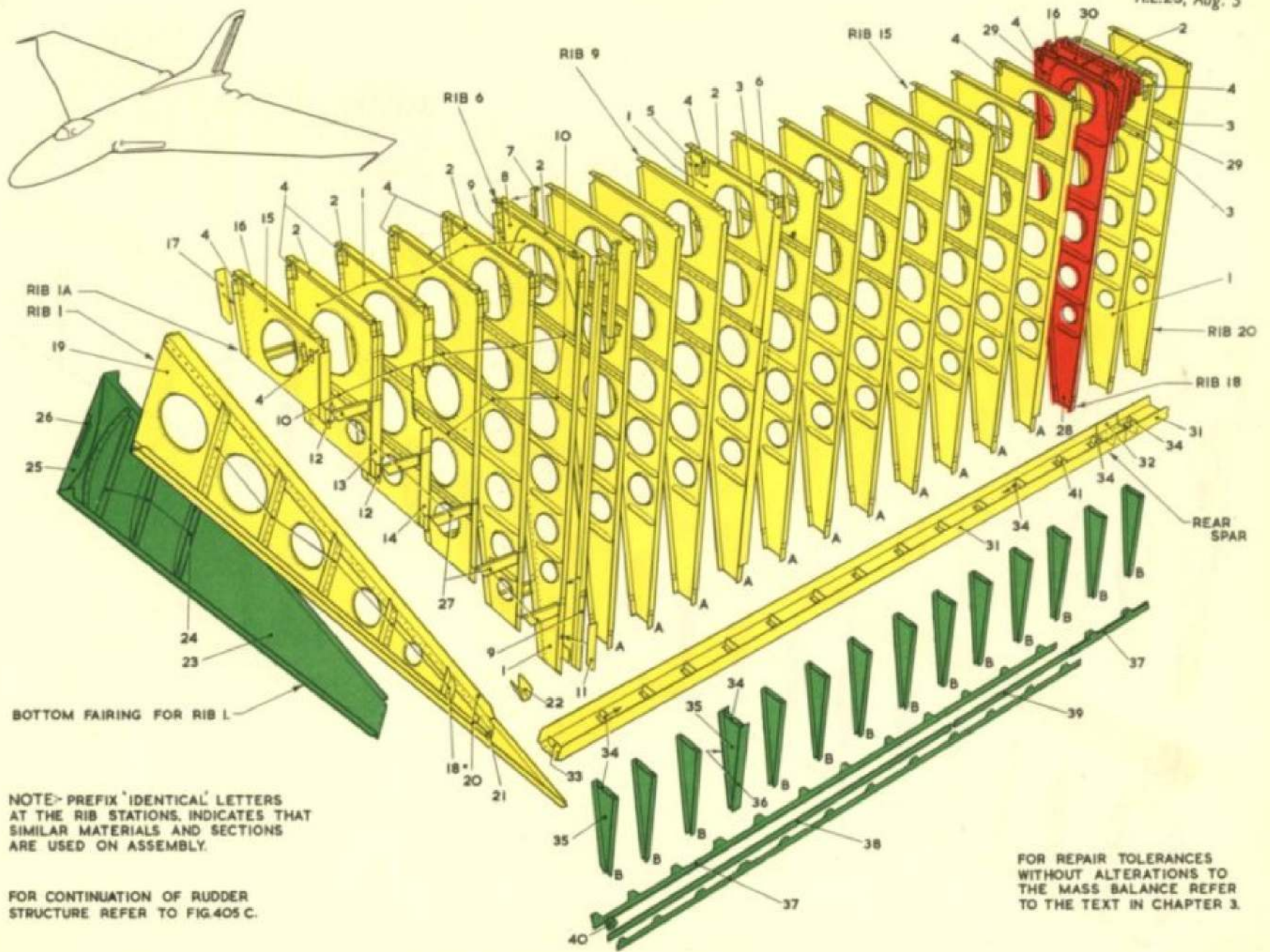
Item	Spec.	Material S.W.G. or Section	Description	Dents		Negligible Damage		Holes Pitch Ratio	Repair Fig. No.
				Depth	Dist. Apart	Dia.			
1	DTD.118	24	Web	0-05	6-0	0-25	8 : 1	106, 108	
2	L.72	24	Rib angle	0-05	6-0	0-125	10 : 1	113	
3	L.72	24	Stiffening angles	†0-05	6-0	0-125	10 : 1		
4	L.72	22	Angle	†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

RESTRICTED



NOTE - PREFIX 'IDENTICAL' LETTERS AT THE RIB STATIONS, INDICATES THAT SIMILAR MATERIALS AND SECTIONS ARE USED ON ASSEMBLY.

FOR CONTINUATION OF RUDDER STRUCTURE REFER TO FIG.405 C.

FOR REPAIR TOLERANCES WITHOUT ALTERATIONS TO THE MASS BALANCE REFER TO THE TEXT IN CHAPTER 3.

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

RESTRICTED

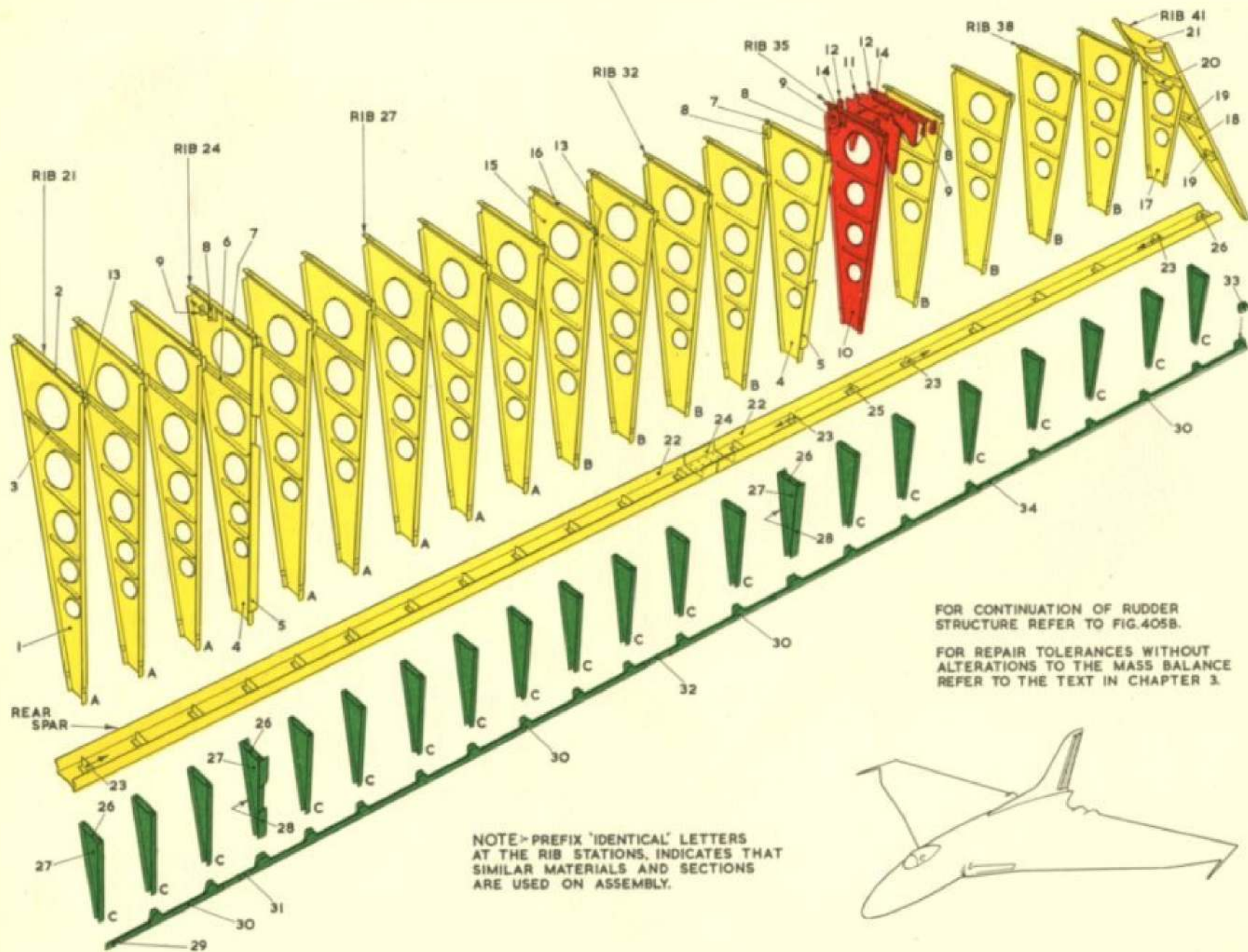


Fig.405C - Rudder structure - aft of front spar

RESTRICTED

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

RESTRICTED

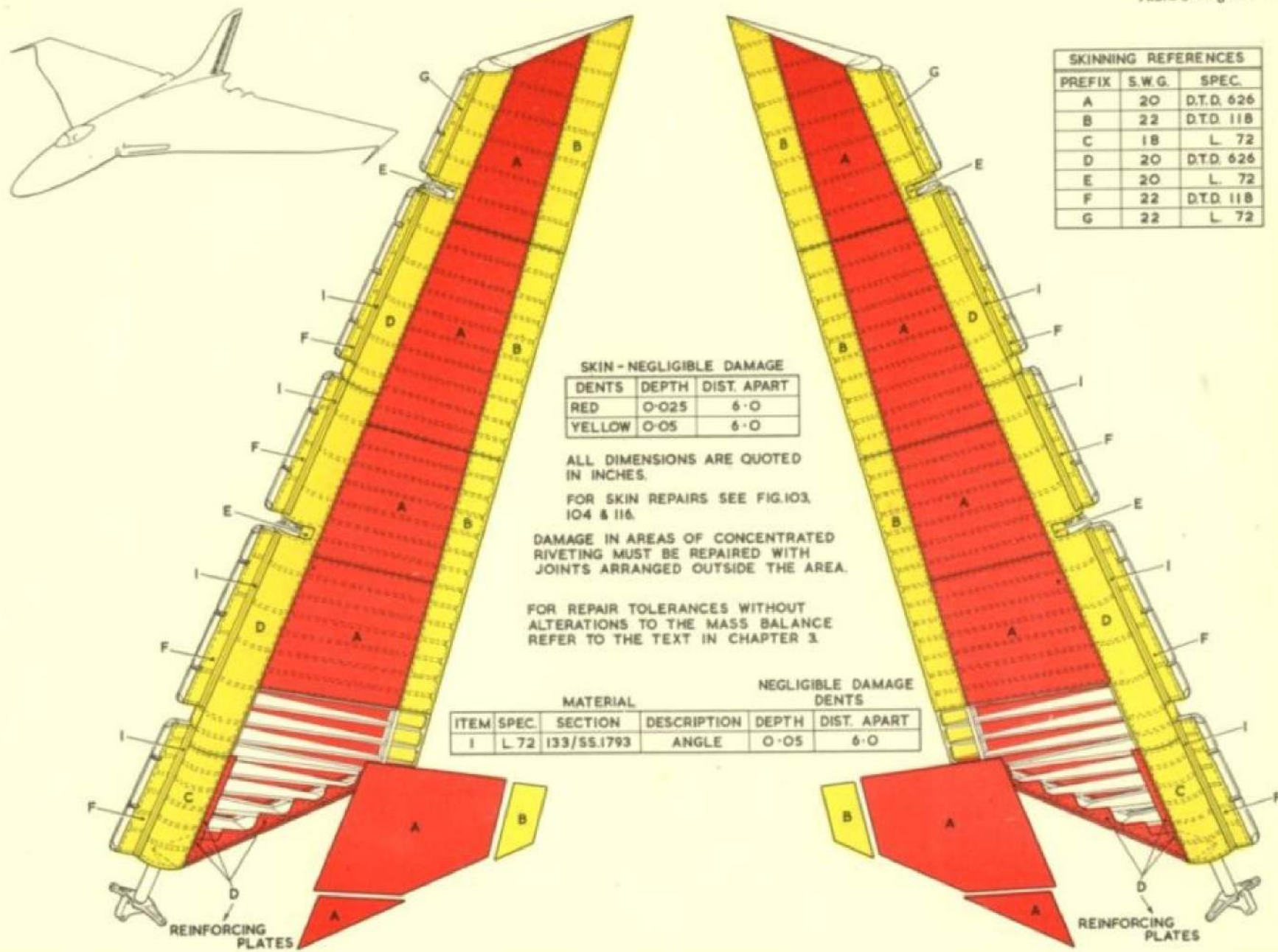


Fig.405D - Rudder skinning



This file was downloaded from the RTFM Library.

Link: [www.scottbouch.com/rtfm](http://www.scottbouch.com/rtfm)

Please see site for usage terms, and more aircraft documents.

