

GROUP B - FUSELAGE

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REPAIR TO STRINGER ATTACHMENT BRACKETS - FRONT PRESSURE BULKHEAD, STATION 372F

General information

1. This repair is applicable to Vulcan B Mk.1, Mk.1A and Mk.2 aircraft.

2. This repair calls for the renewal of all cracked, corroded or damaged stringer attachment brackets on the aft face of the front pressure bulkhead, station 372F, that are outside the tolerances quoted in Repair Leaflet A.1/3. It is essential that new brackets, manufactured from aluminium alloy only, be used for renewal.

3. This repair is concerned only with the renewal of defective stringer brackets and does not give details of removals or re-installations that have been necessary to gain access to them.

4. Before commencing operations, obtain the manufacturers drawings listed below. If any of these drawings have been held on a station, it is essential that they be checked, before use, to see that they are the latest issue.

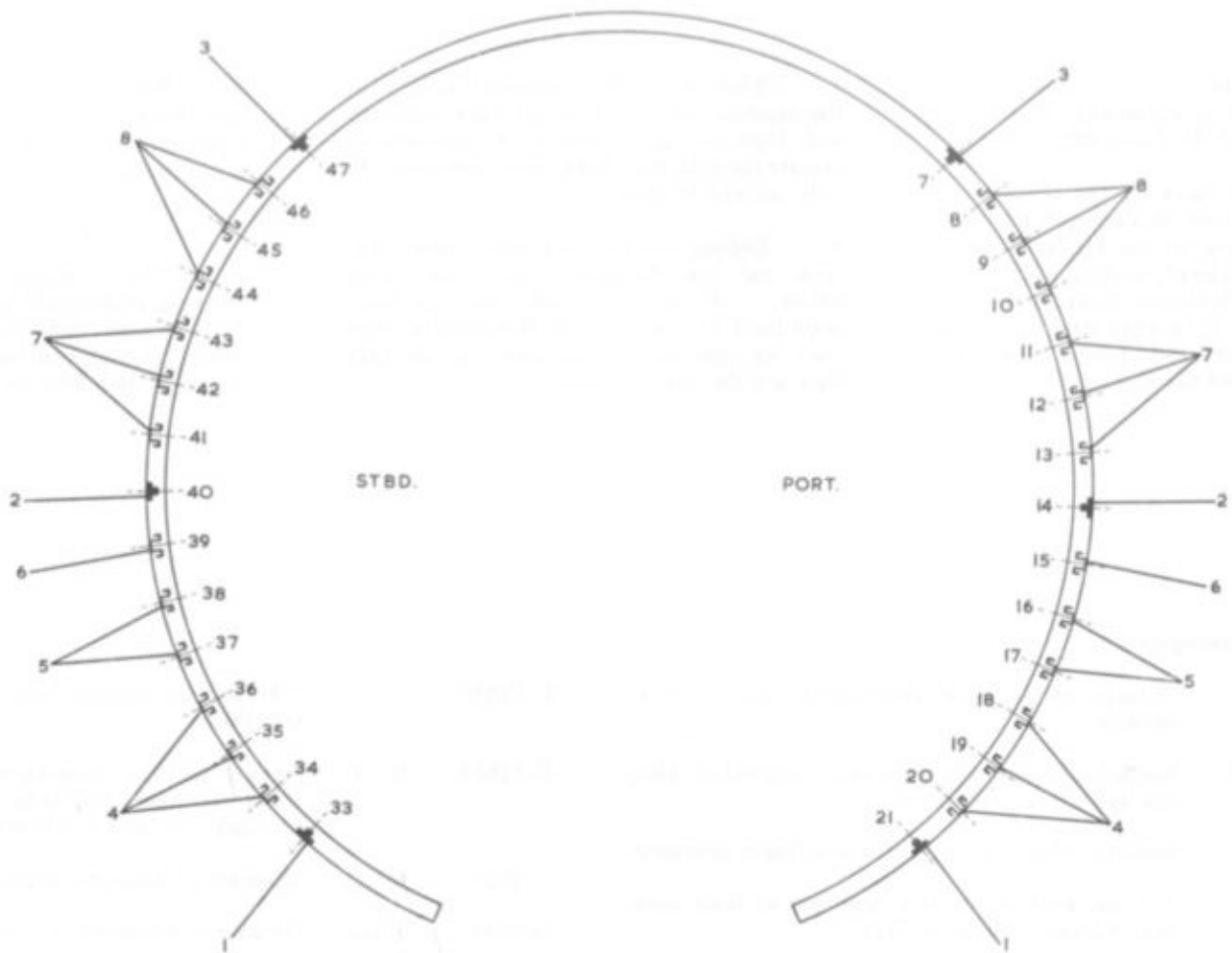
5. Refer to Repair Leaflet A.1/2 to determine the correct aircraft jacking procedure for this repair before commencing operations.

6. The original magnesium alloy stringer attachment brackets, together with their stringer positions and new aluminium alloy stringer attachment brackets are given in the Key to Fig.1 of this leaflet.

Manufacturers drawings:-

D.9428	Sht.5	Details of stringer attachments etc. - crews nacelle.	D.12626	-	"T" section stringer brackets at front pressure bulkhead.
D.12365	Sht.2	Method of renewing cracked magnesium alloy top hat stringer brackets.	D.12634	Sht.1	Repair drawing showing renewal of magnesium alloy stringer brackets by aluminium alloy stringer brackets at all structural joints.
D.12619	-	Semi-finished top hat section stringer brackets.	D.9428	Sht.10	Diagram of bolts at former 372F.
D.12624	Sht.1	Top hat section stringer brackets at front pressure bulkhead, station 372F.	D.9544	Sht.2	Details of skinning of crews nacelle.

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NOTE:-
ITEM NUMBERS FOR KEY TABLES
ARE ARRANGED EXTERNALLY.

Fig.1. Front pressure bulkhead—station 372F

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KEY TO FIG.1

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks	
1		2D.12626	"T" section stringer bracket at stringers 21 and 33	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 2D.8655	
		59D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5	
		28Q/	SP.80/410	Rivet	8	L.86		
		28Q/	SP.80/411	Rivet	2	L.86		
		28D/1011244	A.25/9E	Bolt - hexagon head	4	S.105		Ref.drawing D.9428, sheet 10
		28M/10290	A.G.S.2001/E1	Stiffnut	4	S.112		
		28W/9419405	SP.15/E	Washer	8	L.72	18	Two washers can be used if necessary
		28Q/	SS.4111/407	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2
	2		3D.12626	"T" section stringer bracket at stringers 14 and 40	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 3D.8655
			59D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5
		28Q/	SP.80/410	Rivet	8	L.86		
		28Q/	SP.80/411	Rivet	2	L.86		
		28D/8329	AS.1242/9E	Bolt - countersunk head	1	S.105		Used at lowest bolt hole, stringer 40 only. Ref. drawing D.9428, sheet 5 and 10
		28M/10290	A.G.S.2001/E1	Stiffnut	4	S.112		
		28W/9419405	SP.15/E	Washer	8	L.72	18	Two washers can be used if necessary
		28Q/	SS.4111/407	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
		28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
3		4D.12626	"T" section stringer bracket at stringers 7 and 47	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 4D.8655
		59D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5
	28Q/	SP.80/410	Rivet	8	L.86		
	28Q/	SP.80/411	Rivet	2	L.86		
	28M/10290	A.G.S.2001/E1	Stiffnut	4	S.112		
	28W/9419405	SP.15/E	Washer	8	L.72	18	Two washers can be used if necessary
	28Q/	SS.4111/407	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2
	28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
	28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		Ref.drawing D.9544, sheet 2
	28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	4	L.86		Ref.drawing D.9544, sheet 2
* 4		19D.12624	Top hat stringer bracket at stringers 18, 19, 20, 34, 35 and 36	6	D.T.D.5004	Forging	Redundant magnesium alloy bracket 19D.8656
		2D.12365	Reinforcing strip	12	L.72	14	Ref.drawing D.12365, sheet 2
	28D/1010031	A.25/8E	Bolt - hexagon head	2	S.105		Ref.drawing D.9428, sheet 10
	28D/1011244	A.25/9E	Bolt - hexagon head	2	S.105		Ref.drawing D.9428, sheet 10
	28D/1011245	A.25/10E	Bolt - hexagon head	2	S.105		Ref.drawing D.9428, sheet 10.
	28M/10290	A.G.S.2001/E1	Stiffnut	6	S.112		
	28W/9419405	SP.15/E	Washer	12	L.72	18	Two washers can be used if necessary
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	48	L.86		Ref.drawing D.12365 sheet 2
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	30	L.86		Ref.drawings D.9544, sheet 2 and D.12365 sheet 2

RESTRICTED

KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks	
* 5		20D.12624	Top hat stringer bracket at stringers 16, 17, 37 and 38	4	D.T.D.5004	Forging	Redundant magnesium alloy bracket 20D.8656	
		2D.12365	Reinforcing strip	8	L.72	14	Ref.drawing D.12365, sheet 2	
		28D/1010031	A.25/8E	Bolt - hexagon head	8	S.105	Ref.drawing D.12365, sheet 10	
		28M/10290	A.G.S.2001/E1	Stiffnut	8	S.112		
		28W/9419405	SP.15/E	Washer	16	L.72	18	Two washers can be used if necessary
				Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
		28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	32	L.86		Ref.drawing D.12365, sheet 2
		28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	20	L.86		Ref.drawing D.9544, sheet 2 and D.12365, sheet 2
* 6		21D.12624	Top hat stringer bracket at stringers 15 and 39	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 21D.8656	
		2D.12365	Reinforcing strip	4	L.72	14	Ref.drawing D.12365, sheet 2	
		28D/1010031	A.25/8E	Bolt - hexagon head	1	S.105	Ref.drawing D.9428, sheet 10	
		28D/8329	AS.1242/9E	Bolt - countersunk head	1	S.105	Ref.drawing D.9428, sheet 10	
		28M/10290	A.G.S.2001/E1	Stiffnut	2	S.112		
		28W/9419405	SP.15/E	Washer	4	L.72	18	Two washers can be used if necessary
				Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
		28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	16	L.86		Ref.drawing D.12365, sheet 2
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	10	L.86		Ref.drawing D.9544, sheet 2 and D.12365, sheet 2	

RESTRICTED

KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 7		22D.12624	Top hat stringer bracket at stringers 11, 12, 13, 41, 42 and 43	6	D.T.D.5004	Forging	Redundant magnesium alloy bracket 22D.8656
		2D.12365	Reinforcing strip	12	L.72	14	Ref.drawing D.12365, sheet 2
	28M/10290	A.G.S.2001/E1	Stiffnut	6	S.112		
	28W/9419405	SP.15/E	Washer	12	L.72	18	Two washers can be used if necessary
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	48	L.86		Ref.drawing D.12365, sheet 2
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	30	L.86		Ref.drawing D.9544, sheet 2 and D.12365, sheet 2
* 8		23D.12624	Top hat stringer bracket at stringers 8, 9, 10, 44, 45 and 46	6	D.T.D.5004	Forging	Redundant magnesium alloy bracket 23D.8656
		2D.12365	Reinforcing strip	12	L.72	14	Ref.drawing D.12365, sheet 2
	28M/10290	A.G.S.2001/E1	Stiffnut	6	S.112		
	28W/9419405	SP.15/E	Washer	12	L.72	18	Two washers can be used if necessary
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	48	L.86		Ref.drawing D.12365, sheet 2
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	30	L.86		Ref.drawing D.9544, sheet 2 and D.12365, sheet 2

*If these stringer brackets are unobtainable, they may be manufactured locally from D.12619 semi-finished brackets to Drawing No.D.12624, sheet 1.

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REPAIR TO STRINGER ATTACHMENT BRACKETS - FORWARD FACE, REAR PRESSURE BULKHEAD, STATION 204F.

General information

1. This repair is applicable to Vulcan B.Mk.1, Mk.1A and Mk.2 aircraft.

2. This repair calls for the renewal of all cracked, corroded, or damaged stringer attachment brackets on the forward face of the rear pressure bulkhead at station 204F, that are outside the tolerances quoted in Repair Leaflet A.1/3. It is essential that new brackets, manufactured from aluminium alloy only, be used for renewal.

3. This repair is concerned only with the renewal of defective stringer brackets and does not give any details of removals or re-installations that have been necessary in gaining access to them.

4. Before commencing operations, obtain the manufacturers drawings that are listed below. If any of these drawings have been held on a station, it is essential that they be checked, before use, to see that they are the latest issue.

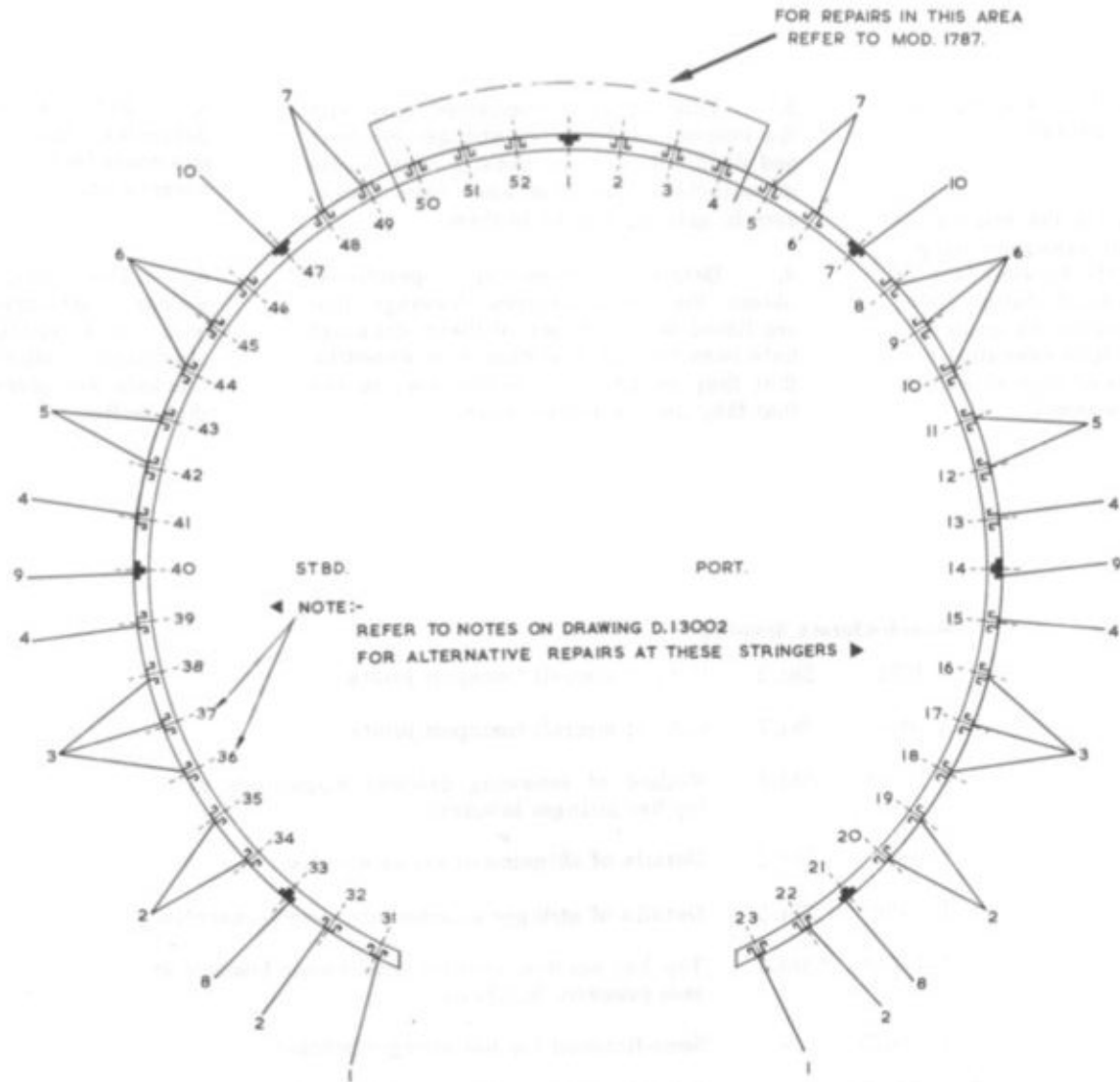
5. Refer to Repair Leaflet A.1/2 to determine the correct aircraft jacking procedure for this repair before commencing operations.

6. The original magnesium alloy stringer attachment brackets, together with their stringer positions and new aluminium alloy stringer attachment brackets are given in the Key to Fig.1 of this leaflet.

Manufacturers drawings:-

A.3071	Sht.2	G.A. of aircraft transport joints.
A.3096	Sht.2	G.A. of aircraft transport joints.
D.12365	Sht.2	Method of renewing cracked magnesium alloy top hat stringer brackets.
D.9544	Sht.2	Details of skinning of crews nacelle.
D.9428	Sht.5	Details of stringer attachments - crews nacelle.
D.12614	Sht.1	Top hat section stringer attachment brackets at rear pressure bulkhead.
D.12620	-	Semi-finished top hat stringer bracket.
◀ D.13002	-	Improvements to skin riveting between stringers 35-38. ▶

RESTRICTED



NOTE:-
ITEM NUMBERS FOR KEY TABLES
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Fig.1. Rear pressure bulkhead, station 204F- forward face

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REPAIR TO STRINGER ATTACHMENT BRACKETS - FORWARD FACE, REAR PRESSURE BULKHEAD, STATION 204F.

General information

1. This repair is applicable to Vulcan B.Mk.1, Mk.1A and Mk.2 aircraft.

2. This repair calls for the renewal of all cracked, corroded, or damaged stringer attachment brackets on the forward face of the rear pressure bulkhead at station 204F, that are outside the tolerances quoted in Repair Leaflet A.1/3. It is essential that new brackets, manufactured from aluminium alloy only, be used for renewal.

3. This repair is concerned only with the renewal of defective stringer brackets and does not give any details of removals or re-installations that have been necessary in gaining access to them.

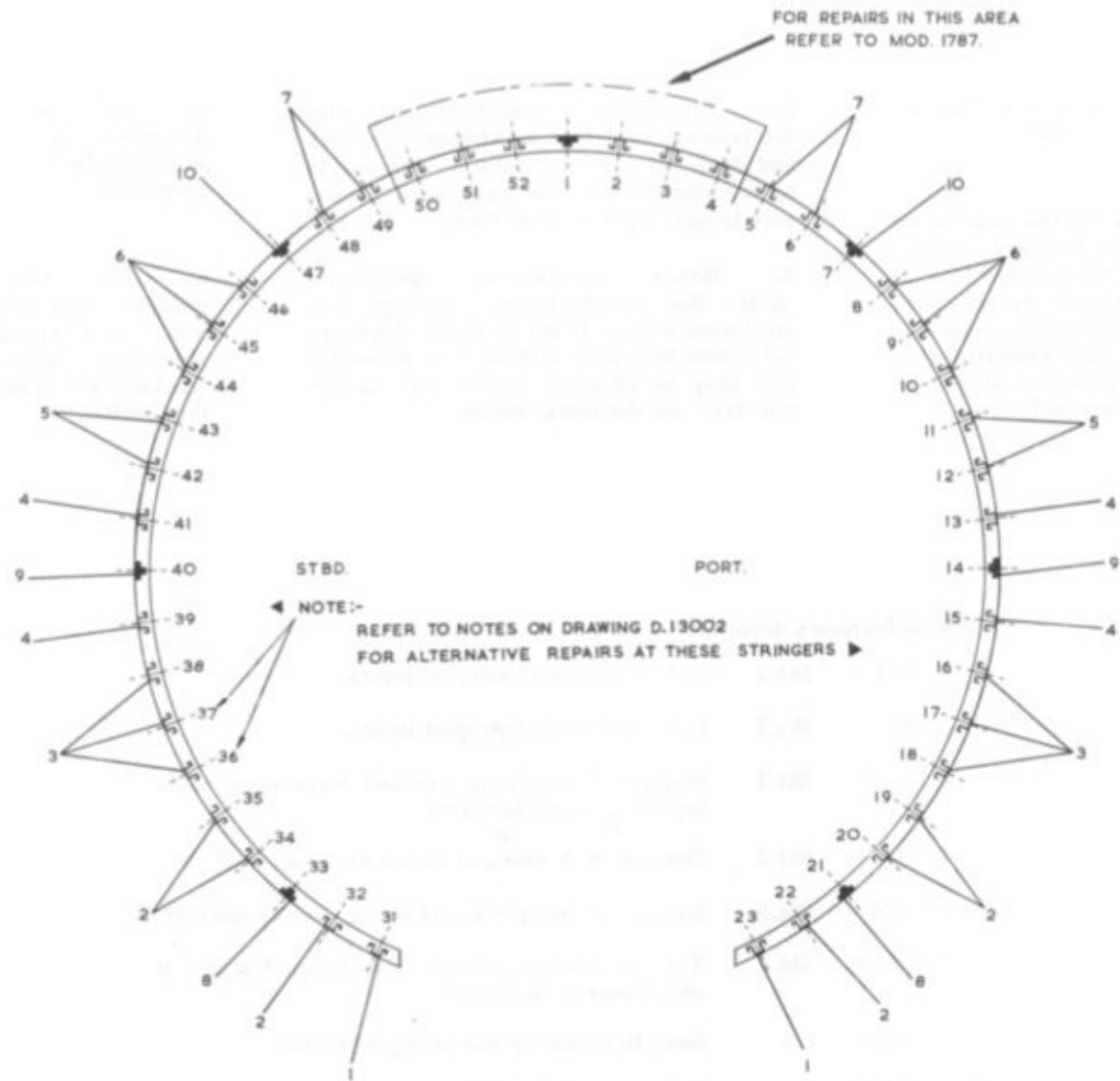
4. Before commencing operations, obtain the manufacturers drawings that are listed below. If any of these drawings have been held on a station, it is essential that they be checked, before use, to see that they are the latest issue.

5. Refer to Repair Leaflet A.1/2 to determine the correct aircraft jacking procedure for this repair before commencing operations.

6. The original magnesium alloy stringer attachment brackets, together with their stringer positions and new aluminium alloy stringer attachment brackets are given in the Key to Fig.1 of this leaflet.

Manufacturers drawings:-

A.3071	Sht.2	G.A. of aircraft transport joints.
A.3096	Sht.2	G.A. of aircraft transport joints.
D.12365	Sht.2	Method of renewing cracked magnesium alloy top hat stringer brackets.
D.9544	Sht.2	Details of skinning of crews nacelle.
D.9428	Sht.5	Details of stringer attachments - crews nacelle.
D.12614	Sht.1	Top hat section stringer attachment brackets at rear pressure bulkhead.
D.12620	-	Semi-finished top hat stringer bracket.
◀ D.13002	-	Improvements to skin riveting between stringers 35-38. ▶



NOTE:-
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ARE ARRANGED EXTERNALLY.

Fig.1. Rear pressure bulkhead, station 2O4F- forward face

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KEY TO FIG.1

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
1		8D.12614	Top hat stringer bracket at stringers 23 and 31.	2	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 8D.8654.
	28D/1011259	**A.25/10G	Bolt - hexagon head	2	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10291	**A. G. S. 2001/G1	Stiffnut	2	S.112		
	28W/9419476	**SP.15/G	Washer	4	L.72	18	Washer under head and nut.
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
		2D.12365	Reinforcing strip	4	L.72	14	Ref.drawing D.12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	16	L.86		Ref.drawing D.12365, sheet 2.
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	10	L.86		Ref.drawing D.12365, sheet 2.
* 2		7D.12614	Top hat stringer bracket at stringers 19, 20 22, 32, 34 and 35.	6	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 7D.8654
	28D/1011259	**A.25/10G	Bolt - hexagon head	6	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10291	**A. G. S. 2001/G1	Stiffnut	6	S.112		
	28W/9419476	**SP.15/G	Washer	12	L.72	18	Washer under head and nut.
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
		2D.12365	Reinforcing strip	12	L.72	14	Ref.drawing D.12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	48	L.86		Ref.drawing D.12365, sheet 2.
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	30	L.86		Ref.drawing D.12365, sheet 2.

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 3		6D.12614	Top hat stringer bracket at stringers 16, 17, 18, and 38.	4	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 6D.8654.
	28D/1011259	**A. 25/10G	Bolt - hexagon head	4	S. 105		Ref. drawing A. 3071, sheet 2 and A. 3096, sheet 2.
	28M/10291	**A. G. S. 2001/G1	Stiffnut	4	S. 112		
	28W/9419476	**SP. 15/G	Washer	8	L. 72	18	Washer under head and nut.
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
		2D. 12365	Reinforcing strip	8	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/	SS. 4141/506	Rivet - 120 deg. countersunk head	20	L. 86		Ref. drawing D. 12365, sheet 2.
* 4		5D.12614	Top hat stringer bracket at stringers 13, 15, 39 and 41.	4	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 5D.8654.
	28D/1011259	**A. 25/10G	Bolt - hexagon head	4	S. 105		Ref. drawing A. 3071, sheet 2 and A. 3096, sheet 2.
	28M/10291	**A. G. S. 2001/G1	Stiffnut	4	S. 112		
	28W/9419476	**SP. 15/G	Washer	8	L. 72	18	Washer under head and nut.
			Packing	As req.	L. 72	As req.	
		2D. 12365	Reinforcing strip	8	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28Q/	SS. 4141/506	Rivet - 120 deg. countersunk head	20	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L. 86		Ref. drawing D. 12365, sheet 2.

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S. W. G. or Section	Remarks
* 5		4D.12614	Top hat stringer bracket at stringers 11, 12, 42 and 43.	4	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 4D.8654, Ref.drawing A. 3071, sheet 2 and A. 3096, sheet 2.
	28D/1011259	**A.25/10G	Bolt - hexagon head	4	S.105		
	28M/10291	**A. G. S. 2001/G1	Stiffnut	4	S.112		
	28W/9419476	**SP.15/G	Washer	8	L.72	18	Washer under head and nut.
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
		2D.12365	Reinforcing strip	8	L.72	14	Ref.drawing D.12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L.86		Ref.drawing D.12365, sheet 2.
	28Q/	SS.4141/505	Rivet - 120 deg. countersunk head	20	L.86		Ref.drawing D.12365, sheet 2.
	* 6		3D.12614	Top hat stringer bracket at stringers 8, 9, 10, 44, 45 and 46.	6	D. T. D. 5004	Forging
28D/1011259		**A.25/10G	Bolt - hexagon head	6	S.105		
28M/10291		**A. G. S. 2001/G1	Stiffnut	6	S.112		
28W/9419476		**SP.15/G	Washer	12	L.72	18	Washer under head and nut.
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
		2D.12365	Reinforcing strip	12	L.72	14	Ref.drawing D.12365, sheet 2.
28Q/16382		A. G. S. 2065/512	Avdel rivet - snap head	48	L.86		Ref.drawing D.12365, sheet 2.
28Q/		SS.4141/506	Rivet - 120 deg. countersunk head	30	L.86		Ref.drawing D.12365, sheet 2.

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S. W. G. or Section	Remarks
* 7		2D.12614	Top hat stringer bracket at stringers 5, 6, 48 and 49.	4	D. T. D.5004	Forging	Redundant magnesium alloy bracket 2D.8654
	28D/1011259	**A.25/10G	Bolt - hexagon head	4	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10291	**A. G. S. 2001/G1	Stiffnut	4	S.112		
	28W/9419476	**SP.15/G	Washer	8	L.72	18	Washer under head and nut.
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
		2D.12365	Reinforcing strip	8	L.72	14	Ref.drawing D.12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L.86		Ref.drawing D.12365 sheet 2.
	28Q/	SS.4141/506	Rivet - 120 deg. countersunk head	20	L.86		Ref.drawing D.12365, sheet 2.
8		4D.12625	'T' stringer bracket at stringers 21 and 33	2	D. T. D.5004	Forging	Redundant magnesium alloy bracket 4D.8653
		9D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5.
	28D/1011246	**A.25/11E	Bolt - hexagon head	4	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10290	**A. G. S. 2001/E1	Stiffnut	4	S.112		
	28W/9419405	**SP.15/E	Washer	8	L.72	18	Washer under head and nut.
	28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/407	Rivet - 60 deg. countersunk head	4	L.86		x Ref.drawing D.9544, sheet 2.
		SP.80/411	Rivet - snap head	2	L.86		x Ref.drawing D.9428, sheet 5.
	28Q/	SP.80/410	Rivet - snap head	8	L.86		x Ref.drawing D.9428, sheet 5.

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
9		3D.12625	'T' stringer bracket at stringers 14 and 40	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 3D.8653
		9D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5.
	28D/1011246	**A.25/11E	Bolt - hexagon head	4	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10290	**A.G.S.2001/E1	Stiffnut	4	S.112		
	28W/9419405	**SP.15/E	Washer	8	L.72	18	Washer under head and nut.
	28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	4	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SP.80/411	Rivet - snap head	2	L.86		x Ref.drawing D.9428, sheet 5.
	28Q/	SP.80/410	Rivet - snap head	8	L.86		x Ref.drawing D.9428, sheet 5.
10		2D.12625	'T' stringer bracket at stringers 7 and 47	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 2D.8653
		9D.9428	Shim	2	L.72	16	Ref.drawing D.9428, sheet 5.
	28D/1011246	**A.25/11E	Bolt - hexagon head	4	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2.
	28M/10290	**A.G.S.2001/E1	Stiffnut	4	S.112		
	28W/9419405	**SP.15/E	Washer	8	L.72	18	Washer under head and nut.
	28Q/	SS.4111/410	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/409	Rivet - 60 deg. countersunk head	8	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SS.4111/408	Rivet - 60 deg. countersunk head	4	L.86		x Ref.drawing D.9544, sheet 2.
	28Q/	SP.80/411	Rivet - snap head	2	L.86		x Ref.drawing D.9428, sheet 5.
	28Q/	SP.80/410	Rivet - snap head	8	L.86		x Ref.drawing D.9428, sheet 5.

RESTRICTED

KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
11		6D.12614	Top hat stringer bracket at stringers 36 and 37	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 6D.8654
	28D/1011259 **	A.25/10G	Bolt - hexagon head	2	S.105		Ref.drawing A.3071, sheet 2 and A.3096, sheet 2
	28M/10291 **	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476 **	SP.15/G	Washer	4	L.72	18	Washer under head and nut
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
		2D.12365	Reinforcing strip	4	L.72	14	Ref.drawing D.12365, sheet 2
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	16	L.86		Ref.drawing D.12365, sheet 2
		SS.4141/506	Rivet - 120 deg. countersunk head	10	L.86		Ref.drawing D.12365, sheet 2
		+ A.G.S.2066/413	Avdel rivet - 100 deg. countersunk head	As req.	L.86		Ref.drawing D.13002

* If these brackets are unobtainable, they may be manufactured locally from D.12620 semi-finished brackets to drawing D.12614, sheet 1.

** The items duplicated on Repair Leaflet C.1/2.

x As these drawings call up magnesium alloy brackets and rivets, use in pictorial sense only.

+ This repair scheme, as shown on drawing D.13002, is to be used only when stringer bracket(s) at stringers 36 and 37 are damaged and cannot be renewed.

RESTRICTED

REPAIR TO STRINGER ATTACHMENT BRACKETS - AFT FACE TRANSPORT FORMER, STATION 428A

General information

1. This repair is applicable to Vulcan B.Mk.1 aircraft only.

2. This repair calls for the renewal of all cracked, corroded or damaged stringer attachment brackets on the aft face of the transport former, station 428A, that are outside the tolerances quoted in Repair Leaflet A.1/3. It is essential that new brackets, manufactured from aluminium alloy only, be used for renewal.

3. This repair is concerned only with the renewal of defective stringer brackets

and does not give any details of removals or re-installations that have been necessary in gaining access to them.

4. Before commencing operations, obtain the manufacturers drawings listed below. If any of these drawings have been held on a station, it is essential that they be checked, before use, to see that they are the latest issue.

5. Refer to Repair Leaflet A.1/2 to determine the correct aircraft jacking procedure for this repair before commencing operations.

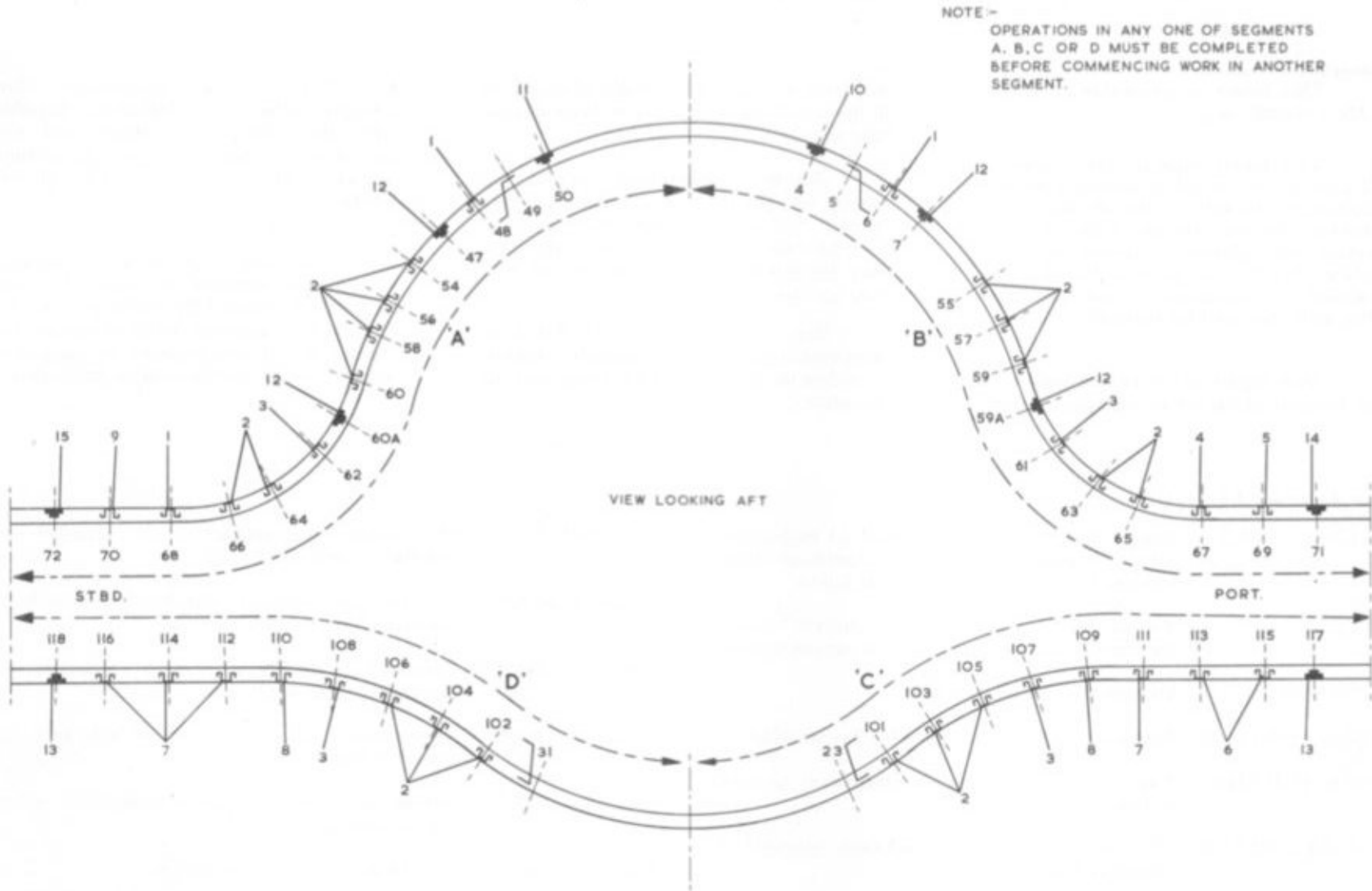
6. The original magnesium alloy stringer attachment brackets, together with their stringer positions and new aluminium alloy stringer attachment brackets are given in Fig.1 of this Leaflet.

7. If it is necessary to effect renewals of stringer brackets in more than one segment of former 428A (refer to Fig.1 for details of segments), it is essential that repairs in any one segment be completed before commencing operations in another.

Manufacturers drawings:-

D.12634	Sht.2	Repair drawing showing renewal of magnesium alloy stringer brackets by aluminium alloy stringer brackets at all structural joints.	261D.8760	-	'T' section stringer attachment bracket at transport former 428A - aft
D.12623	-	Top hat stringer, semi-finished stringer bracket for renewal purposes on repair or reconditioning	262 and 263D.8760		'T' sections stringer attachment brackets at transport former 428A - aft
127D.9545	-	Stringer attachment bracket.	D.9024	Sht.4	Termination and attachment of stringers at transport former 428A.
128 and 129D.9545		Stringer attachment brackets (at Former 428A).	D.9024	Sht.5	Termination and attachment of stringers at transport former 428A.
250 to 257D.8760		Top hat section stringer attachment brackets at transport former 428A.	D.12365	Sht.2	Method of renewing cracked magnesium alloy top hat stringer brackets.
258 and 259D.8760		'T' section stringer attachment brackets at transport former 428A - aft	A.3071	Sht.2	G.A. of aircraft transport joints.
260D.8760	-	'T' section stringer attachment bracket at former 428A - aft			

RESTRICTED



NOTE -
ITEM NUMBERS FOR KEY TABLES
ARE ARRANGED EXTERNALLY.

Fig. 1. Transport former, station 428A-aft face.

RESTRICTED

KEY TO FIG.1

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 1		254D.8760	Top hat stringer bracket at stringers 6, 48 and 68.	3	D.T.D.5004	Forging	Redundant magnesium alloy bracket 152D.8760.
		2D.12365	Reinforcing strip	6	L.72	14	Ref.drawing D.12365, sheet 2.
	28D/1011244	A.25/9E	Bolt - hexagon head	3	S.105		Ref.drawing A.3071, sheet 2.
	28M/10290	A.G.S.2001/E1	Stiffnut	3	S.112		
	28W/9419405	SP.15/E	Washer	6	L.72	18	
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
	28Q/	SS.4141/406	Rivet - 120 deg. countersunk head	15	L.86		Ref.drawing D.12365, sheet 2.
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	24	L.86		Ref.drawing D.12365, sheet 2.
* 2		250D.8760	Top hat stringer bracket at stringers 55, 57, 59, 63, 65, 101, 103, 105, 102, 104, 106, 64, 66, 54, 56, 58 and 60.	17	D.T.D.5004	Forging	Redundant magnesium alloy bracket 148D.8760.
		2D.12365	Reinforcing strip	34	L.72	14	Ref.drawing D.12365, sheet 2.
	28D/1011244	A.25/9E	Bolt - hexagon head	11	S.105		Ref.drawing A.3071, sheet 2.
	28D/1010031	A.25/8E	Bolt - hexagon head	6	S.105		Ref.drawing A.3071, sheet 2.
	28M/10290	A.G.S.2001/E1	Stiffnut	17	S.112		
	28W/9419405	SP.15/E	Washer	34	L.72	18	
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	136	L.86		Ref.drawing D.12365, sheet 2.
28Q/	SS.4141/406	Rivet - 120 deg. countersunk head	85	L.86		Ref.drawing D.12365, sheet 2.	

RESTRICTED

KEY TO FIG.1 (Continued)

Item No.	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 3		253D.8760	Top hat stringer bracket at stringers 61, 62, 107 and 108.	4	D, T. D. 5004	Forging	Redundant magnesium alloy bracket 151D.8760.
		2D. 12365	Reinforcing strip	8	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28D/1011244	A. 25/9E	Bolt - hexagon head	2	S. 105		Ref. drawing A. 3071, sheet 2.
	28D/1010031	A. 25/8E	Bolt - hexagon head	2	S. 105		Ref. drawing A. 3071, sheet 2.
	28M/10290	A. G. S. 2001/E1	Stiffnut	4	S. 112		
	28W/9419405	SP. 15/E	Washer	8	L. 72	18	
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
	28Q/	SS. 4141/406	Rivet - 120 deg. countersunk head	20	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L. 86		Ref. drawing D. 12365, sheet 2.
* 4		257D.8760	Top hat stringer bracket at stringer 67	1	D, T. D. 5004	Forging	Redundant magnesium alloy bracket 155D.8760.
		2D. 12365	Reinforcing strip	2	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28D/1011244	A. 25/9E	Bolt - hexagon head	1	S. 105		Ref. drawing A. 3071, sheet 2.
	28M/10290	A. G. S. 2001/E1	Stiffnut	1	S. 112		
	28W/9419405	SP. 15/E	Washer	2	L. 72	18	
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
	28Q/	SS. 4141/406	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	8	L. 86		Ref. drawing D. 12365, sheet 2.

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KEY TO FIG.1 (Continued)

Item No.	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 5		129D.9545	Top hat stringer bracket at stringer 69	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 79D.9545.
		2D.12365	Reinforcing strip	2	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28D/1011244	A. 25/9E	Bolt - hexagon head	1	S. 105		Ref. drawing A. 3071, sheet 2.
	28M/10290	A. G. S. 2001/E1	Stiffnut	1	S. 112		
	28W/9419405	SP. 15/E	Washer	2	L. 72	18	
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
	28Q/	SS.4141/406	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	8	L. 86		Ref. drawing D. 12365, sheet 2.
* 6		255D.8760	Top hat stringer bracket at stringers 113 and 115	2	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 153D.8760.
		2D.12365	Reinforcing strip	4	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28D/1011244	A. 25/9E	Bolt - hexagon head	1	S. 105		Ref. drawing A. 3071, sheet 2.
	28D/1010031	A. 25/8E	Bolt - hexagon head	1	S. 105		Ref. drawing A. 3071, sheet 2.
	28M/10290	A. G. S. 2001/E1	Stiffnut	2	S. 112		
	28W/9419405	SP. 15/E	Washer	4	L. 72	18	
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
	28Q/	SS.4141/406	Rivet - 120 deg. countersunk head	10	L. 86		Ref. drawing D. 12365, sheet 2.
28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	16	L. 86		Ref. drawing D. 12365, sheet 2.	

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S. W. G. or Section	Remarks
* 7		252D.8760	Top hat stringer bracket at stringers 111, 112, 114 and 116.	4	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 150D.8760.
		2D.12365	Reinforcing strip	8	L.72	14	Ref.drawing D.12365, sheet 2.
	28D/1011244	A.25/9E	Bolt - hexagon head	1	S.105		Ref.drawing A.3071, sheet 2
	28D/1010031	A.25/8E	Bolt - hexagon head	3	S.105		Ref.drawing A.3071, sheet 2.
	28M/10290	A. G. S. 2001/E1	Stiffnut	4	S.112		
	28W/9419405	SP.15/E	Washer	8	L.72	18	
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.
	28Q/	SS.4141/406	Rivet - 120 deg. countersunk head	20	L.86		Ref.drawing D.12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	32	L.86		Ref.drawing D.12365 sheet 2.
8		127D.9545	Top hat stringer bracket at stringers 109 and 110	2	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 77D.9545.
	28D/1011019	A.25/8C	Bolt - hexagon head	6	S.105		Ref.drawing D.9024, sheet 5.
	28D/1010030	A.25/7C	Bolt - hexagon head	6	S.105		Ref.drawing D.9024, sheet 5.
	28M/10288	A. G. S. 2001/C1	Stiffnut	12	S.112		
	28W/9419475	SP.15/C	Washer	24	L.72	18	
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2.

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KEY TO FIG.1 (Continued)

Item No.	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 9		128D.9545	Top hat stringer bracket at stringer 70	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 78D.9545.
		2D. 12365	Reinforcing strip	2	L. 72	14	Ref. drawing D. 12365, sheet 2.
	28D/1011244	A. 25/9E	Bolt - hexagon head	1	S. 105		Ref. drawing D. 9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	1	S. 112		
	28W/9419405	SP. 15/E	Washer	2	L. 72	18	
			Packing	As req.	L. 72	As req.	Ref. drawing D. 12365, sheet 2.
	28Q/	SS. 4141/406	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 12365, sheet 2.
	28Q/16382	A. G. S. 2065/512	Avdel rivet - snap head	8	L. 86		Ref. drawing D. 12365, sheet 2.
* 10		258D.8760	*T' stringer bracket at stringer 4	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 156D.8760.
	28D/12546	A. 25/14E	Bolt - hexagon head	2	S. 105		Ref. drawing D. 9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	2	S. 112		
	28W/9419405	SP. 15/E	Washer	4	L. 72	18	
	28Q/	SS. 4141/408	Rivet - 120 deg. countersunk head	3	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SS. 4141/407	Rivet - 120 deg. countersunk head	4	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SP. 80/408	Rivet - snap head	3	L. 86		Ref. drawing D. 9024, sheet 4.
* 11		259D.8760	*T' stringer bracket at stringer 50	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 157D.8760
	28D/12546	A. 25/14E	Bolt - hexagon head	2	S. 105		Ref. drawing D. 9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	2	S. 112		
	28W/9419405	SP. 15/E	Washer	4	L. 72	18	
	28Q/	SS. 4141/408	Rivet - 120 deg. countersunk head	3	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SS. 4141/407	Rivet - 120 deg. countersunk head	4	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SP. 80/408	Rivet - snap head	3	L. 86		Ref. drawing D. 9024, sheet 4.

RESTRICTED

KEY TO FIG.1 (Continued)

Item	Ref.No.	Port No.	Description	Quantity Required	Spec.	S. W. G. or Section	Remarks
* 12		260D.8760	'T' stringer bracket at stringers 7, 59A, 60A and 47.	4	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 158D.8760.
	28D/1011244	A. 25/9E	Bolt - hexagon head	4	S. 105		Ref. drawing D.9024, sheet 4.
	28D/1011242	A. 25/7E	Bolt - hexagon head	4	S. 105		Ref. drawing D.9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	8	S. 112		
	28W/9419405	SP. 15/E	Washer	16	L. 72	18	
	28Q/	SS.4141/408	Rivet - 120 deg. countersunk head	16	L. 86		Ref. drawing D.9024, sheet 4.
	28Q/	SS.4141/407	Rivet - 120 deg. countersunk head	24	L. 86		Ref. drawing D.9024, sheet 4.
	28Q/	SP.80/410	Rivet - snap head	16	L. 86		Ref. drawing D.9024, sheet 4.
* 13		261D.8760	'T' stringer bracket at stringers 117 and 118	2	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 159D.8760
	28D/1011244	A. 25/9E	Bolt - hexagon head	4	S. 105		Ref. drawing D.9024, sheet 5.
	28M/10290	A. G. S. 2001/E1	Stiffnut	4	S. 112		
	28W/9419405	SP. 15/E	Washer	8	L. 72	18	
	28Q/	SS.4141/408	Rivet - 120 deg. countersunk head	8	L. 86		Ref. drawing D.9024, sheet 5.
	28Q/	SS.4141/407	Rivet - 120 deg. countersunk head	12	L. 86		Ref. drawing D.9024, sheet 5.
	28Q/	SP.80/410	Rivet - snap head	8	L. 86		Ref. drawing D.9024, sheet 5.

RESTRICTED

KEY TO FIG.1 (Continued)

Item No.	Ref.No.	Part No.	Description	Quantity Required	Spec.	S. W. G. or Section	Remarks
* 14		262D.8760	'T' stringer bracket at stringer 71	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 160D.8760.
	28D/1011244	A. 25/9E	Bolt - hexagon head	2	S. 105		Ref. drawing D. 9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	2	S. 112		
	28W/9419405	SP. 15/E	Washer	4	L. 72	18	
	28Q/	SS. 4141/409	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SS. 4141/408	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SP. 80/408	Rivet - snap head	4	L. 86		Ref. drawing D. 9024, sheet 4.
* 15		263D.8760	'T' stringer bracket at stringer 72	1	D. T. D. 5004	Forging	Redundant magnesium alloy bracket 161D.8760.
	28D/1011244	A. 25/9E	Bolt - hexagon head	2	S. 105		Ref. drawing D. 9024, sheet 4.
	28M/10290	A. G. S. 2001/E1	Stiffnut	2	S. 112		
	28W/9419405	SP. 15/E	Washer	4	L. 72	18	
	28Q/	SS. 4141/409	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SS. 4141/408	Rivet - 120 deg. countersunk head	5	L. 86		Ref. drawing D. 9024, sheet 4.
	28Q/	SP. 80/408	Rivet - snap head	4	L. 86		Ref. drawing D. 9024, sheet 4.

* If these stringer brackets are unobtainable, they may be manufactured locally from D. 12623 semi-finished brackets to the relevant detail drawings which are given in the List of Manufacturers Drawings above.

NOTE . . . Stringer attachment brackets at stringer 5, 23, 31 and 49 are already manufactured from aluminium alloy.

RESTRICTED

REPAIR TO STRINGER ATTACHMENT BRACKETS - AFT FACE, TRANSPORT FORMER, STATION 428A

General information

1. This repair is applicable to Vulcan Mk.1A and Mk.2 aircraft.
2. This repair calls for the renewal of all cracked, corroded or damaged stringer attachment brackets on the aft face of the transport former, station 428A, that are outside the tolerances quoted in Repair Leaflet A.1/3. It is essential that new brackets, manufactured from aluminium alloy only, be used for renewal.
3. This repair is concerned only with the renewal of defective stringer brackets

and does not give any details of removals or reinstallations that have been necessary in gaining access to them.

4. Before commencing operations, obtain the manufacturers drawings listed below. If any of these drawings have been held on a station, it is essential that they be checked, before use, to see that they are the latest issue.

5. Refer to Repair Leaflet A.1/2 and A.A.1/2 to determine the correct aircraft jacking procedure for this repair before commencing operations.

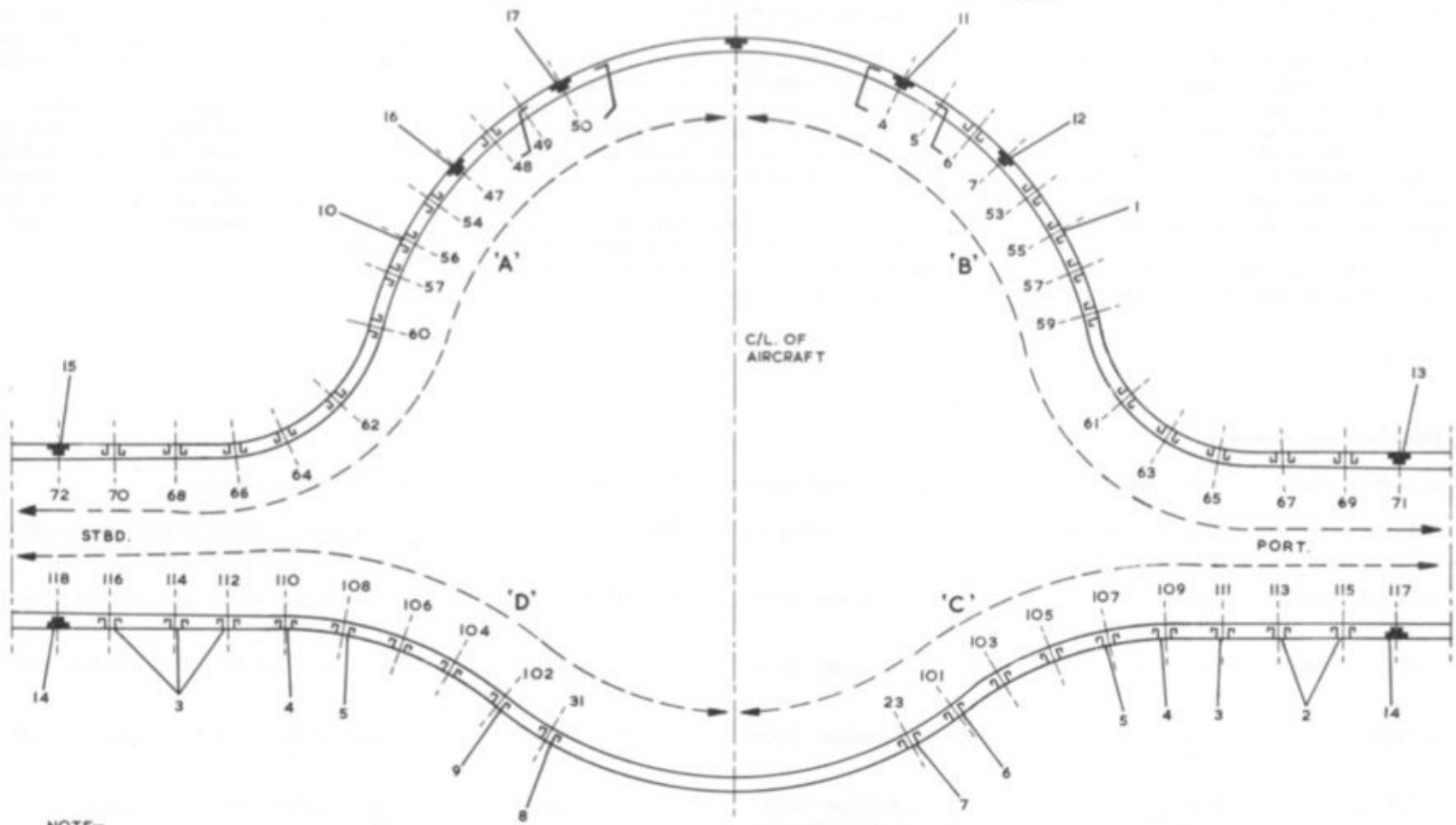
6. The original magnesium alloy stringer attachment brackets, together with their stringer positions and new aluminium alloy stringer attachment brackets are given in Fig.1 of this leaflet.

7. If it is necessary to effect renewals of stringer brackets in more than one segment of former 428A (refer to Fig.1 for details of segments), it is essential that repairs in any one segment be completed before commencing operations in another.

Manufacturers drawings

A.3096	Sht.8	G.A. of aircraft transport joints - former 428A.	127D.9545		Stringer attachment bracket.
D.12365	Sht.2	Method of renewing cracked magnesium alloy top hat stringer brackets.	250-257D.8760		Top hat section stringer attachment brackets at transport former 428A.
D.10729	Sht.1	Termination of stringers at transport former 428A.	261D.8760		'T' section stringer attachment bracket at transport former 428 - aft.
D.10729	Sht.3	Termination of stringers at transport former 428A.	D.10735	Sht.1	Arrangement of fillet 428-487.5 fuselage side to 63.5.
D.10729	Sht.4	Termination of stringers at transport former 428A.	D.10735	Sht.2	Arrangement of fillet 428-487.5 fuselage side to 63.5.
D.12623		Top hat stringer, semi-finished stringer bracket for renewal purposes on repair or reconditioning.	D.10702	Sht.2	G.A. rear fuselage - D.3. Closing panel and 63.5 joint.
◀ D.13120		Details showing portion of bottom skin panel removed to gain access to stringer brackets and skin insert repair. Aft of F.428A. ▶			

NOTE:-
 OPERATIONS IN ANY ONE OF SEGMENTS
 A, B, C OR D MUST BE COMPLETED
 BEFORE COMMENCING WORK IN ANOTHER
 SEGMENT.



NOTE:-
 ITEM NUMBERS FOR KEY TABLES
 ARE ARRANGED EXTERNALLY.

Fig.1. Transport former, station 428A - aft face

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KEY TO FIG.1

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
1		76D.10729	Stringer bracket at stringer 55	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 57D.10729
	28D/12818	A.25/9G	Bolt - hexagon-head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	SP.15/G	Washer	2	L.72	12	
		SS.4141/509	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/409	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/410	Rivet - 120 deg. countersunk head	1	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/610	Rivet - 120 deg. countersunk head	1	L.86		Ref.drawing ** D.10729, sheet 1
		SP.80/509	Rivet - snap head	4	L.86		Ref.drawing ** D.10729, sheet 1
* 2		255D.8760	Top hat stringer bracket at stringer 113 and 115	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 153D.8760
		2D.12365	Reinforcing strip	4	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28D/1011244	A.25/9E	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10290	A.G.S.2001/E1	Stiffnut	2	S.112		
	28W/9419405	SP.15/E	Washer	2	L.72		
		SS.4141/407	Rivet - 120 deg. countersunk head	10	L.86		Ref.drawing ** D.10729, sheet 4
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	16	L.86		Ref.drawing D.12365, sheet 2

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 3	252D.8760		Top hat stringer bracket at stringer 111, 112, 114 and 116	4	D.T.D.5004	Forging	Redundant magnesium alloy bracket 150D.8760
	2D.12365		Reinforcing strip	8	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28D/1011244	A.25/9E	Bolt - hexagon head	4	S.105		Ref.drawing A.3096, sheet 8
	28M/10290	A.G.S.2001/E1	Stiffnut	4	S.112		
	28W/9419405	SP.15/E	Washer	4	L.72	18	
		SS.4141/406	Rivet - 120 deg. countersunk head	20	L.86		Ref.drawing ** D.10729, sheet 4
28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	32	L.86		Ref.drawing D.12365, sheet 2	
4	127D.9545		Top hat stringer bracket at stringer 109 and 110	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 77D.9545
	28D/1011019	A.25/8C	Bolt - hexagon head	6	S.105		Ref.drawing A.3096, sheet 8
	28M/10288	A.G.S.2001/C1	Stiffnut	6	S.112		
	28W/9419475	SP.15/C	Washer	12	L.72	18	
	28D/1010030	A.25/7C	Bolt hexagon head	6	S.105		Ref.drawing ** D.10729, sheet 4
	28M/10288	A.G.S.2001/C1	Stiffnut	6	S.112		
	28W/9419475	SP.15/C	Washers	6	L.72		

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
* 5		253D.8760	Top hat stringer bracket at stringer 107 and 108	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 151D.8760
		2D.12365	Reinforcing strip	4	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
		28D/1011244	A.25/9E	Bolt - hexagon head	2	S.105	Ref.drawing A.3096, sheet 8
		28M/10290	A.G.S.2001/E1	Stiffnut	2	S.112	
		28W/9419405	SP.15/E	Washer	2	L.72	18
		28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	16	L.86	Ref.drawing D.12365, sheet 2
			SS.4141/406	Rivet - 120 deg. countersunk head	10	L.86	Ref.drawing D.12365, sheet 2
6		71D.10729	Top hat stringer bracket at stringer 101	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 67D.10729
		2D.12365	Reinforcing strip	2	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
		28D/1011259	A.25/10G	Bolt - hexagon head	1	S.105	Ref.drawing A.3096, sheet 8
		28M/10291	A.G.S.2001/G1	Stiffnut	1	S.112	
		28W/9419476	SP.15/G	Washer	1	L.72	18
		28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	8	L.86	Ref.drawing D.12365, sheet 2
			SS.4141/406	Rivet - 120 deg. countersunk head	5	L.86	Ref.drawing D.12365, sheet 2

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
7		68D.10729	Top hat stringer bracket at stringer 23	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 15D.10729
		2D.12365	Reinforcing strip	2	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28D/1011259	A.25/10G	Bolt - hexagon head	1	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	1	S.112		
	28W/9419476	SP.15/G	Washer	1	L.72	18	
	28Q/16382	A.G.S.2065/512	Avdel Rivet - snap head	8	L.86		Ref.drawing D.12365, sheet 2
		SS.4141/406	Rivet - 120 deg. countersunk head	5	L.86		Ref.drawing D.12365, sheet 2
8		69D.10729	Top hat stringer bracket at stringer 31	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 16D.10729
		2D.12365	Reinforcing strip	2	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28D/1011259	A.25/10G	Bolt - hexagon head	1	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	1	S.112		
	28W/9419476	S.P.15/G	Washer	1	L.72	18	
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	8	L.86		Ref.drawing D.12365, sheet 2
		SS.4141/406	Rivet - 120 deg. countersunk head	5	L.86		Ref.drawing D.12365, sheet 2

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
9		70D.10729	Top hat stringer bracket at stringer 102	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 66D.10729
		2D.12365	Reinforcing strip	2	L.72	14	Ref.drawing D.12365, sheet 2
			Packing	As req.	L.72	As req.	Ref.drawing D.12365, sheet 2
	28D/1011259	A.25/10G	Bolt - hexagon head	1	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	1	S.112		
	28W/9419476	SP.15/G	Washer	1	L.72	18	
	28Q/16382	A.G.S.2065/512	Avdel rivet - snap head	8	L.86		Ref.drawing D.12365, sheet 2
		SS.4141/406	Rivet - 120 deg. countersunk head	5	L.86		Ref.drawing D.12365, sheet 2
10		77D.10729	Stringer bracket at stringer 56	1	D.T.D.5004		Redundant magnesium alloy bracket 58D.10729
	28D/12818	A.25/9G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	S.P.15/G	Washer	2	L.72		
		SS.4141/509	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/409	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/410	Rivet - 120 deg. countersunk head	1	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/610	Rivet - 120 deg. countersunk head	1	L.86		Ref.drawing ** D.10729, sheet 1
		SP.80/509	Rivet - snap head	4	L.86		Ref.drawing ** D.10729, sheet 1

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
11		75D.10729	'T' section stringer bracket at stringer 4	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 55D.10729
	28D/12822	A25/16G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	S.P.15/G	Washer	2	L.72	18	
		SS.4141/610	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/508	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/509	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 1
		SP.80/509	Rivet - snap head	5	L.86		Ref.drawing ** D.10729, sheet 1
12		78D.10729	'T' section stringer bracket at stringer 7	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 59D.10729
	28D/12818	A.25/9G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	S.P.15/G	Washer	2	L.72		
		SS.4141/610	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10729, sheet 3
		SS.4141/509	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 3
		SS.4141/508	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 3
		SP.80/509	Rivet - snap head	6	L.86		Ref.drawing ** D.10729, sheet 3

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
13		72D.10729	Stringer bracket at stringer 71	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 31D.10729
	28D/1011259	A.25/10G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	SP.15/G	Washer	2	L.72		
		SP.80/509	Rivet - snap head	6	L.86		Ref.drawing ** D.10729, sheet 4
		SS.4141/508	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10735, sheet 1
		SS.4141/509	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10735, sheet 1
		25SS.3791	Pop rivet - 120 deg. countersunk head	6			Ref.drawing D.10702, sheet 2
*14		261D.8760	'T' section stringer bracket at stringers 117 and 118	2	D.T.D.5004	Forging	Redundant magnesium alloy bracket 159D.8760
	28D/1011245	A.25/10E	Bolt - hexagon head	4	S.105		Ref.drawing ** D.10729, sheet 4
	28M/10290	A.G.S.2001/E1	Stiffnut	4	S.112		
	28W/9419405	SP.15/E	Washer	4	L.72		
		SS.4141/408	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10735, sheet 2
		SS.4141/407	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10735, sheet 2
		SP.80/409	Rivet - snap head	8	L.86		Ref.drawing ** D.10729, sheet 4
		25SS.3791	Pop rivet - 120 deg. countersunk head	10			Ref.drawing D.10702, sheet 2

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
15		73D.10729	Stringer bracket at stringer 72	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 32D.10729
	28D/1011259	A.25/10G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	SP.15/G	Washer	2	L.72		
		SP.80/509	Rivet - snap head	6	L.86		Ref.drawing ** D.10729, sheet 4
		SS.4141/508	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10735, sheet 1
		SS.4141/509	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10735, sheet 1
		25SS.3791	Pop rivet - 120 deg. countersunk head	6			Ref.drawing D.10702, sheet 2
16		79D.10729	'T' section stringer bracket at stringer 47	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 60D.10729
	28D/12818	A.25/9G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	SP.15/G	Washer	2	L.72		
		SS.4141/610	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10729, sheet 3
		SS.4141/509	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 3
		SS.4141/508	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 3
		SP.80/509	Rivet - snap head	6	L.86		Ref.drawing ** D.10729, sheet 3

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KEY TO FIG.1 (continued)

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
17		74D.10729	'T' section stringer bracket at stringer 50	1	D.T.D.5004	Forging	Redundant magnesium alloy bracket 56D.10729
	28D/12822	A.25/16G	Bolt - hexagon head	2	S.105		Ref.drawing A.3096, sheet 8
	28M/10291	A.G.S.2001/G1	Stiffnut	2	S.112		
	28W/9419476	SP.15/G	Washer	2	L.72	18	
		SS.4141/610	Rivet - 120 deg. countersunk head	2	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/508	Rivet - 120 deg. countersunk head	4	L.86		Ref.drawing ** D.10729, sheet 1
		SS.4141/509	Rivet - 120 deg. countersunk head	6	L.86		Ref.drawing ** D.10729, sheet 1
		SP.80/509	Rivet - snap head	5	L.86		Ref.drawing ** D.10729, sheet 1

* If these brackets are unobtainable, they may be manufactured locally from D.12623 semi-finished brackets to the relevant detail drawings, which are given in the List of manufacturers drawings above.

** As these drawings call up magnesium alloy components, use in pictorial sense only.

NOTE...

Stringer brackets at stringers 5, 6, 53, 57, 59, 63, 65, 67, 69, 70, 68, 66, 64, 60, 58, 54, 48 and 49 are already manufactured from aluminium alloy.

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REPAIR BY BUSHING TO BRAKE
PARACHUTE DRAG BEAM

General

1. This repair applies to Vulcan B.Mk.1A and Mk.2 aircraft and is issued to cover the strengthening of the drag beam 1D.10714 by fitting oversize bushes when the holes housing the main pivot bolt 9D.10782 have been elongated in service.

Drawings required

2. The Avro Whitworth drawings required are:

D.12590	Sht. 1	Repair to brake parachute release mechanism drag beam.
Z.10898		Special reamers.
6 to 13 and 15 to 18Z.10899		Reaming bushes.
15 to 20D.12590		Repair bushes.
Z.10899	Shts.1 and 2	Assembly of template.

Repair procedure

3. Remove the parachute release mechanism from the drag beam as detailed in A.P.4505A and C, Vol.1, Book 1, Sect.3, Chap.13 for Mk.1A and in A.P.4505B, Vol.1, Book 1, Sect.3, Chap.13 for Mk.2. Retain the grease nipple, washers and nut of main pivot bolt 9D.10782 for refitment to the new main pivot bolt 2D.12775 and proceed as follows:

- (1) Remove bolts 91,92D.10714 and distance piece 33D.10714 from the hook retaining block 40D.10174. Retain these for eventual refitment.
- (2) Replace bolts removed in operation (1) by bolts 4 and 5Z.10899, position template 2Z.10899 and secure by knurled nuts 3Z.10899.

- (3) Progressively ream the pivot bolt hole using special reamers 3 to 8Z.10898 and their appropriate reaming bushes 8 to 13Z.10899 until the hole diameter is 0.6875 in. This diameter is suitable for the smallest repair bush, provided all elongation has been removed.
- (4) When elongation still exists remove bolt 5Z.10899, replace it by bolt 19Z.10899 and fit the adapter 20Z.10899 to the template. The template is shown in position both with and without the adapter on D.12590, sheet 1.
- (5) Using special reamers 9 to 12Z.10898 and their appropriate bushes 15 to 18Z.10899 continue reaming until the hole dia. is 0.75 in. or 0.8125 in. Remove template.

- (6) Repeat operations (2) to (5) on the opposite member of the drag beam and remove template when completed.
- (7) From each side of the drag beam remove four countersunk bolts AS.1242/3E, three immediately forward of the reamed hole and one immediately aft.
- (8) In accordance with repair drawing D.12590, sheet 1, position packing pieces 21,22D.12590 and the appropriate repair bush 15 to 20 D.12590. Drill and ream four 1/4 in.dia. holes in the bush flange and packing piece in conjunction with the four 1/4 in.dia. holes in the drag beam. Drill three 1/8 in.dia. holes in the drag beam in conjunction with

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the three 1/8 in.dia. pilot holes in the bush flange. Open out to 1/4 in.dia. by further drilling and reaming. Countersink the inboard face of the drag beam 90 deg. to suit AS.1242/5E bolts. Drill and ream 5/16 in.dia. hole in the bush flange and packing piece in conjunction with the 5/16 in.dia. tooling hole in the drag beam. Countersink the drag beam inboard face 90 deg. to suit AS.1242/5G bolt. Chamfer the 1/2 in.dia. hole on the outboard face of the packing piece 45 deg. x 0.03 in. deep.

NOTE...

Reaming tolerances are given on D.12590, sheet 1.

- (9) Repeat operation (8) on the opposite drag beam web and repair bush.

- (10) Apply Alocrom 1200 (Ref.No. 33C/2202321) by brush to all reamed holes in accordance with A.P.2662B, Sect.9, Chap.9.2.3.

- (11) Assemble seven bolts AS.1242/5E, nuts A.27/EP and washers SP.13E to each side. Assemble bolt AS.1242/5G, nut A.27/GP and washer SP.13G to each side. Lock all nuts by peening.

- (12) Assemble the reaming template 2Z.10899 in position complete with distance washers 21Z.10899 as shown on D.12590, sheet 1. Ream straight through both repair bushes at the same time to 1/2 in. dia. ensuring that the tolerances given on D.12590, sheet 1 are not exceeded.

- (13) Remove reaming template. Re-

place bolts 91,92D.10714 and distance piece 33D.10714 to secure the hook retaining block.

- (14) Replace the parachute release mechanism in accordance with the instructions given in para.3 and fit the new main pivot bolt 2D.12775 in place of pivot bolt 9D.10782.

- (15) The two bolts A.25/3C fitted at the rear attachment of the brake parachute mechanism housing to the drag beam must be moved 1.7 in. forward of their original position maintaining a minimum landing of 0.3 in. Ref.D.12590, sheet 1.

Material required

4. The following table gives the material and tools required to effect the repair.

TABLE 1
List of material

Item	Ref.No.	Part No.	Description	Quantity Required	Spec.	S.W.G. or Section	Remarks
1		1Z.10899	Reaming fixture (Drag beam repair)	1	-	-	Supplied as a complete set
2		1Z.10898	Special reamers (Drag beam repair)	1	-	-	Supplied as a complete set
3		15,16D.12590	Repair bush, 0.6875 in.dia.	1+1	S.96	-	Repair bushes are supplied
4		17,18D.12590	Repair bush, 0.75 in.dia.	1+1	S.96	-	as special order only to meet
5		19,20D.12590	Repair bush, 0.8125 in.dia.	1+1	S.96	-	the requirements of individual
6		21,22D.12590	Packing piece	1+1	L.72	14	aircraft.
7		2D.12775	Main pivot bolt	1			Supplied with repair bushes
8	28D/1013178	AS.1242/5E	Bolt, 90 deg. csk/hd.	7+7			
9	28M/12928	A.27/EP	Nut	7+7			
10	28W/9418921	SP.13E	Washer	7+7			
11	28D/1013282	AS.1242/5G	Bolt, 90 deg. csk/hd.	1+1			
12	28M/10069	A.27/GP	Nut	1+1			
13	28W/9419403	SP.13G	Washer	1+1			

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