TO: ALL HOLDERS OF FLIGHT SPOILER PANEL ASSEMBLY OVERHAUL MANUAL, 57-56-51

REVISION NO. 10, DATED MAR 1/07

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Updated IPL Figure 2 to show item number (44) blade seal used on top assemblies 65-46451-70, -71												X	

FLIGHT SPOILER PANEL ASSEMBLY

57-56-51

BOEING P/N 65-46451-23,-25,-29,-46,-50,-51,-59,-60,-61,-65,-68,-70,-71
65-79950-7
65-79952-7,-8

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
57-1042		PRR 31295	Jun 10/71
57-1053, Rev 2		PRR 31987	Jun 10/71
		PRR 31531-1	Dec 25/72
		PRR 32121-15	Dec 25/72
		PRR 32900-1	Jul 5/79
		PRR 32912-1	Jul 5/79
		PRR 33191	Dec 5/83
		PRR 33101	Jun 5/85
		PRR 33600-26	Sep 5/86
		PRR 34297	Mar 5/89
		PRR 34297-3	Mar 5/89
57-1192		PRR 34605	Jun 5/90
57-1227		MC 5754MP3001	Mar 1/95

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	57-56-51					
	T-1	Mar 1/95				
	T-2	BLANK				
*	LEP-1	Mar 1/07				
	LEP-2	BLANK				
	T/C-1	Dec 25/72				
	T/C-2	BLANK				
	1	Jun 5/85				
	2	Dec 25/72				
	3	Jun 5/85				
	4	Jun 5/85				
	5	Dec 5/83				
	6	Dec 25/72				
	7	Dec 25/72				
	8	Dec 25/72				
	9	BLANK				
	10	Dec 25/72				
*	11	Mar 1/07				
	12	Dec 25/72				
	13	Mar 1/95				
	14	Mar 1/95				
*	15	Mar 1/07				
*	16	Mar 1/07				

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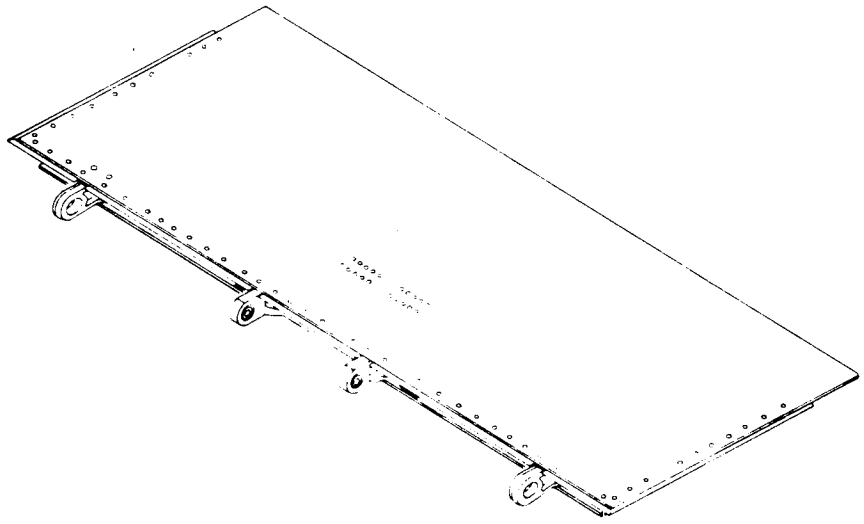
FLIGHT SPOILER PANEL ASSEMBLY



Flight Spoiler Panel Assembly
Figure 1

1. DESCRIPTION AND OPERATION

A. Description

(1) the flight spoiler is made up of a bonded aluminum honeycomb panel assembly. Three spoilers are attached to the rear spar of each wing with aluminum alloy fittings. One of these fittings is a combination actuator and hinge fitting, and two are eccentric hinges. The assembly is recessed into the upper surface of the wing between the engine nacelle and the fuselage.

B. Operation

(1) The flight spoiler is used along with the ground spoiler when the airplane is being operated on the ground, and without the ground spoiler during flight. It is operated hydraulically in conjunction with the speed brake to assist in stabilizing the airplane and braking speed.

C. Leading Particulars

Length -- 52 inches
Width -- 20 inches
Height -- 2 inches
Weight -- 18 pounds (approximately)

2. DISASSEMBLY (See figure 2.)

A. Remove nuts (1), washers (2), bolts (3), and screws (4 and 5). Remove seal (6) and filler (7).

B. Remove nuts (8), washers (9), and bolts (10). Remove seals (11 through 14) and filler (15).

C. Remove nuts (16), washers (17), bolts (18), and screws (19 and 20). Remove seal (21) and filler (22).

D. Remove retaining ring (31) and bearing (32).

E. If applicable, remove rub strip (38 or 55) by scraping off with a sharp-edged wooden or plastic tool.

NOTE: Hinge fitting (28) and hinge fitting assembly (33) are riveted in place. Do not remove unless replacement is necessary. Do not remove items (23 through 26A) or shims (29 and 30) unless removal of hinge fitting (28) is required.

F. If applicable, remove parts (40 through 47).

NOTE: Do not remove parts (48 through 54) unless repair or replacement is necessary.

3. CLEANING

A. General

(1) Wash and rinse all metal parts except bearings in solvent, P-D-680 or equivalent.

(2) Remove stubborn accumulations of dirt with a stiff-bristle brush. Do not use a metallic brush.

(3) Dry parts with clean, lint-free cloth, or with clean, dry compressed air.

(4) For further cleaning instructions, refer to 20-30-03, General Cleaning Procedures.

B. Bearings

(1) Clean bearings as directed in 20-30-01, Cleaning and Relubricating Antifriction Bearings.

4. INSPECTION/CHECK

A. Visual Check

(1) Examine all metal parts for pits, cracks, scratches, corrosion, and damage, using strong light and minimum of 10-power magnification.

(2) Examine all bolt and bushing holes for excessive and eccentric wear.

(3) Examine bearings for corrosion, roughness, binding and excessive radial and axial play.

(4) Check honeycomb panel for evidence of delamination, internal moisture, scratches, and contour defects.

(a) Tap surface of honeycomb panel lightly with a coin or plastic rod. Go over entire surface. Normal structure will produce a solid, metallic sound; delaminated areas will produce a dull, hollow sound; and areas containing moisture will produce a dull, solid sound.

(b) Examine areas suspected of containing moisture radiographically to determine extent of damage.

(c) Determine contour defects by laying straightedge across surface of panel. Raised areas indicate delamination. Warp of panel also can be determined with the straightedge.

(d) Examine edges of panel carefully for cuts and abrasions. Delamination starts very easily from damage to an edge member of a honeycomb panel.

B. Special Check (Fig. 2).

(1) If visual examination discloses evidence of defects in any of listed parts, perform following check.

(a) Penetrant check -- Hinge fittings (28 and 34).

5. REPAIR

A. Repair (Fig. 2)

(1) Remove minor nicks, scratches, and corrosion by polishing out with abrasive cloth, No. 200 grit or finer. Do not exceedd limits given in Fig. 1A. Refinish as necessary for portection against corrosion.

(2) For repairs to honeycomb panel assembly (39), refer to the Boeing 737 Structural Repair Manual, D6-15565, 51-40-06.

B. Refinish (Fig. 2)

NOTE: Refer to 20-30-02 for stripping of protective finishes, and to 20-41-01 for explanation of F and SRF finish codes.

(1) Deleted

(a) Fillers (7, 15, 22) -- Alodize or chromic acid anodize (SRF-2.30) all over. Material: Al Alloy.

(b) Hinge fitting (28 and 34) -- Alodize or chromic acid anodize (SRF-2.30) all over, except in bushing and bearing holes. Material: Al Alloy.

(c) Honeycomb panel assembly (39):

1) P/N 65-46451-24 -- Alodize and apply one coat primer BMS 10-11, type 1 (SRF-2.31) followed by gray gloss enamel BMS 10-60 (SRF-14.9813) all over, except in bearing holes.

2) P/N 65-46451-53 and -54 -- Apply one coat primer BMS 10-79 plus gloss enamel BMS 10-60, type 2 (F-14.9863-707) to all exposed bare areas including fastener heads. No finish in bearing holes.

3) P/N 65-46451-63 -- Prepare surface and apply one coat BMS 10-79 primer and BMS 10-60, type 2 enamel (F-14.9863) in accordance with carriers color scheme. No finish in bearing holes.

(d) Honeycomb panel (39A):

1) P/N 65-46451-30 -- Apply corrosion resistant primer BMS 5-89 (F-20.26) followed by gray gloss enamel BMS 10-60 (SRF-14.9813) all over, except in bearing holes. Material: Al Alloy.

2) P/N 65-46451-49 and -52 -- Apply corrosion resistant primer BMS 5-89 (F-20.26) followed by one coat primer BMS 10-79 plus gloss enamel BMS 10-60, type 2 (F-14.9863-707) all over, except in bearing holes. Material: Al Alloy.

3) P/N 65-46451-62 -- Apply corrosion resistant primer BMS 5-89 (F-20.26), prepare surface and apply one coat BMS 10-79 primer and BMS 10-60, type 2 enamel (F-14.9863) in accordance with carriers color scheme. No finish in bearing holes.

(e) Retainer (43) -- Alodize and apply one coat primer BMS 10-11, type 1 (SRF-2.31) all over. Material: Al Alloy.

(f) Use primer BMS 10-79, type 2 (F-19.46) under decorative surfaces. BMS 10-79, type 2 is the preferred option to primer BMS 10-11, type 1.

C. Replacement (Fig. 2)

(1) Replace all parts worn or damaged beyond simple repair.

(2) Replace all worn or damaged attaching hardware.

(3) Replace all fabric aerodynamic seals at each overhaul.

(4) Replace rub strip (38 or 55) at each overhaul. Bond new rub strip in place as directed in 20-50-12, Application of Adhesives, using type 44 adhesive.

(5) Replace worn bushings (35) as follows:

(a) Press old bushing out of housing with a mandrel.

(b) Coat faying surfaces of new bushing and housing with primer, BMS 10-11, type 1. Press bushing into housing while primer is wet.

6. ASSEMBLY (Fig. 2)

NOTE: Deleted.

A. Install bearings (32) and retaining rings (31) in fitting (34).

NOTE: Light pressure may be needed to install bearing.

B. Install seal (21) and filler (22) with screws (19 and 20), bolts (18), washers (17), and nuts (16). Bond filler (22) in place as directed in 20-50-12, using type 38 adhesive. Install fasteners using MIL-C-11796, class 3 corrosion preventive compound.

C. Install seals (11 through 14) and filler (15) with bolts (10), washers (9), and nuts (8). Bond filler (15) in place as directed in 20-50-12, using type 38 adhesive. Install fasteners using MIL-C-11796, class 3 corrosion preventive compound.

D. Install seal (6) and filler (7) with screws (4 and 5), bolts (3), washers (2), and nuts (1). Bond filler (7) in place as directed in 20-50-12, using type 38 adhesive. Install fasteners using MIL-C-11796, class 3 corrosion preventive compound.

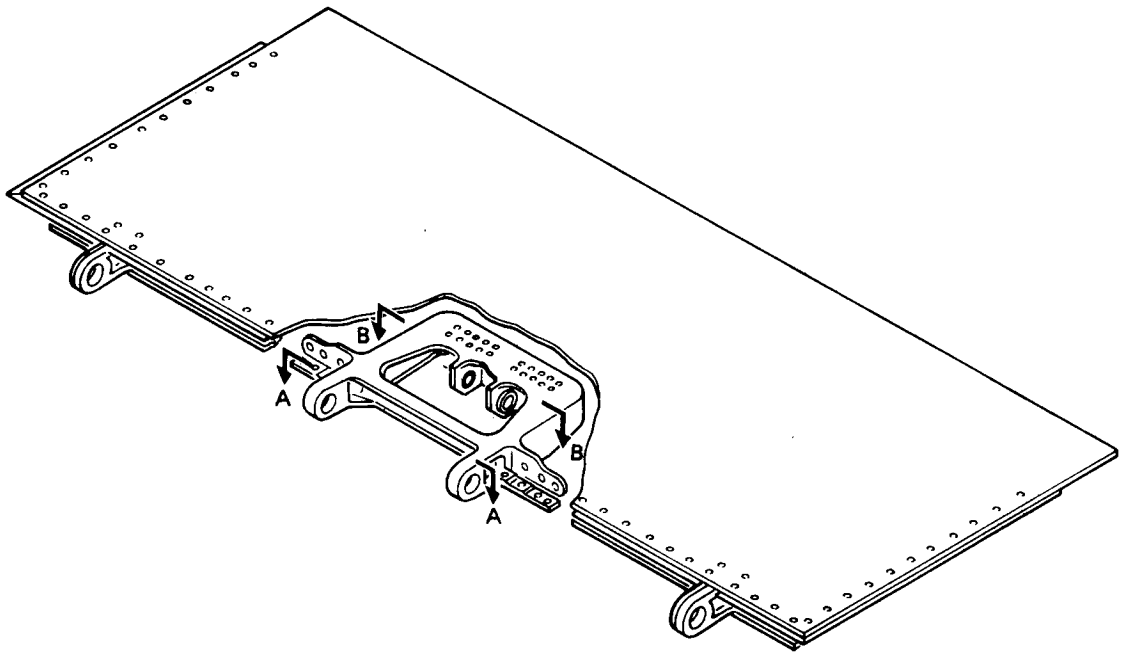
E. If applicable, position spacers (46 and 47), seals (44 and 45) and retainer (43) on panel. Secure with bolts (41 and 42) and nuts (40). Install fasteners using MIL-C-11796 class 3 corrosion preventive compound.

F. Touch up finish as necessary after completion of buildup.

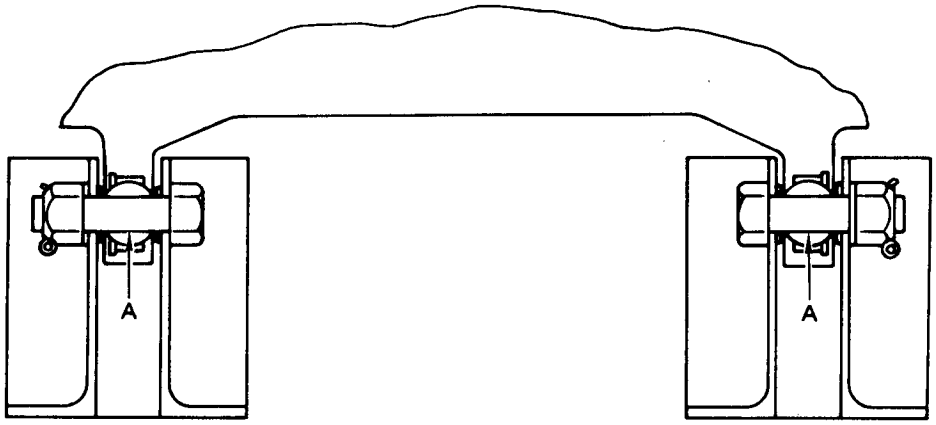
7. FITS AND CLEARANCES

A. The fits and clearances table lists design dimensions and service wear limits for close tolerance parts of the assembly that are subject to wear or corrosion. Unless otherwise specified, parts should be returned to the design dimensions whenever rework is accomplished.

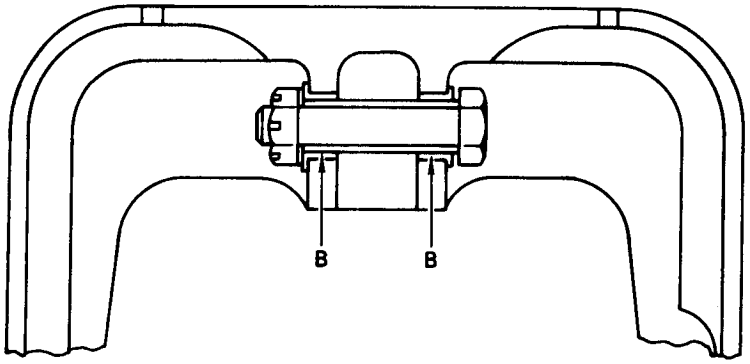
B. Clearances are given to aid assembly of the components. The values given in the Maximum Allowable Clearance column are the maximum permitted to ensure proper functioning of the unit. If assembled parts fail to meet this requirement, one or more of the parts must be rejected. Parts that are rejected should be reworked if within the rework limits given in the Repair procedure; if not within rework limits, the parts should be scrapped. It is recommended that the design clearances be used as the guiding assembly criteria when newly reworked parts are assembled.



Fits and Clearances
Figure 1A (Sheet 1)



SECTION A–A



SECTION B–B

Ref Letter Fig. 1A	Mating Item No. Fig. 2	Design Dimensions				Service Wear Limits		
		Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inches)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
A	32	0.4995	0.5000	0.0000	0.0015	0.4965	0.5025	0.0030
	*[1]	0.4985	0.4995					
B	35	0.750	0.7515	0.001	0.0035	0.744	0.754	0.005
	*[2]	0.748	0.749					

*[1] BACB30LM8 (reference)
*[2] 69-43227 (reference)

Fits and Clearances
Figure 1A (Sheet 3)

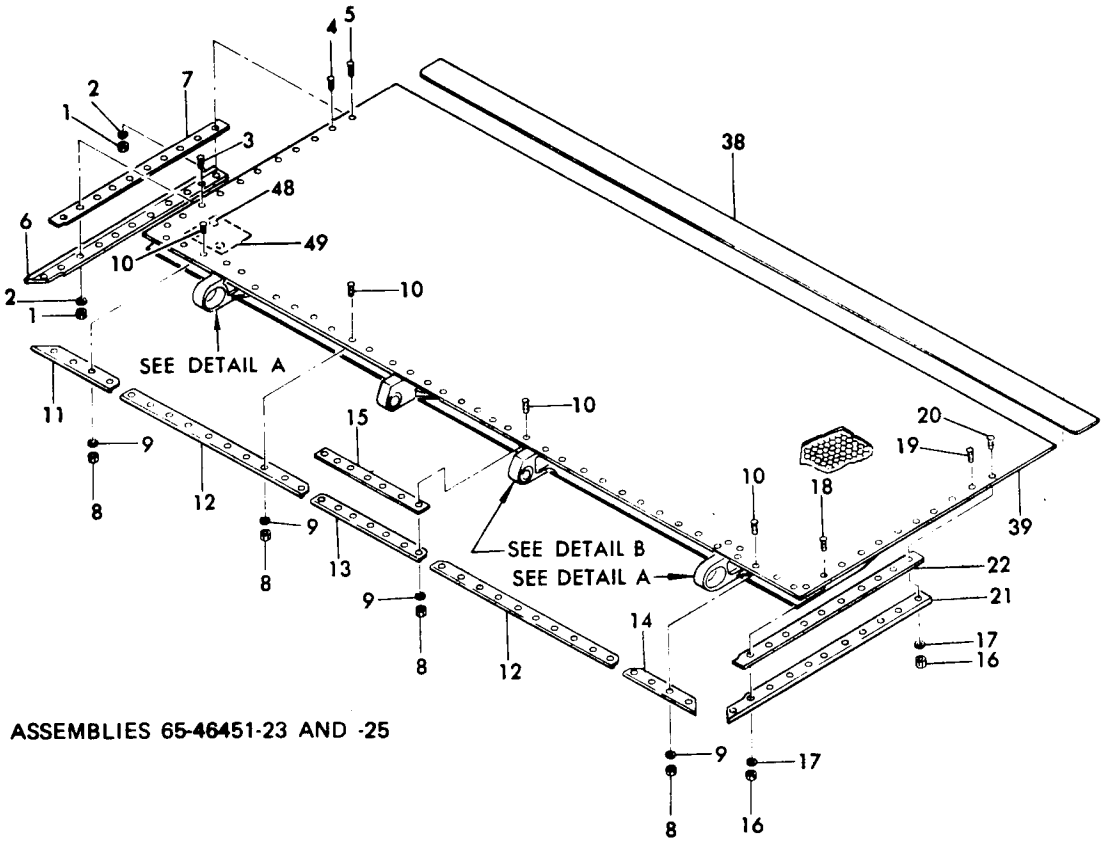
8. STORAGE INSTRUCTIONS

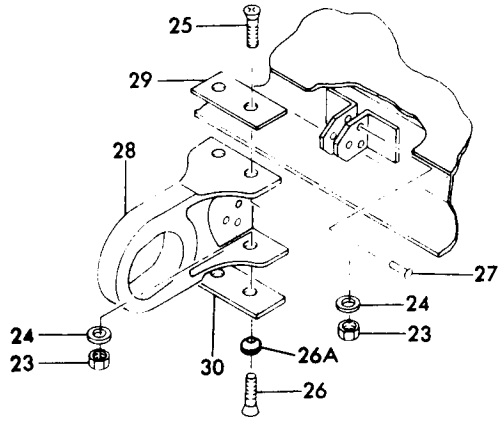
A. Coat bushing and bearing surfaces lightly with grease, MIL-G-23827.

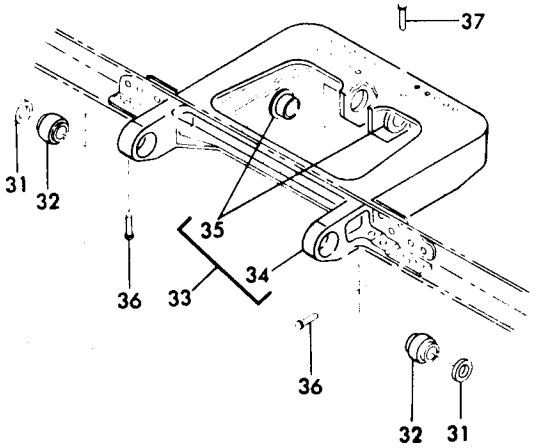
B. Wrap assembly in nonabsorbent material, and store in a cool, dry area, preferably humidity controlled.

C. For further storage instructions, refer to 20-44-02, Temporary Protective Coatings, and 20-70-01, Protection, Storage, and Handling of Airplane Components.

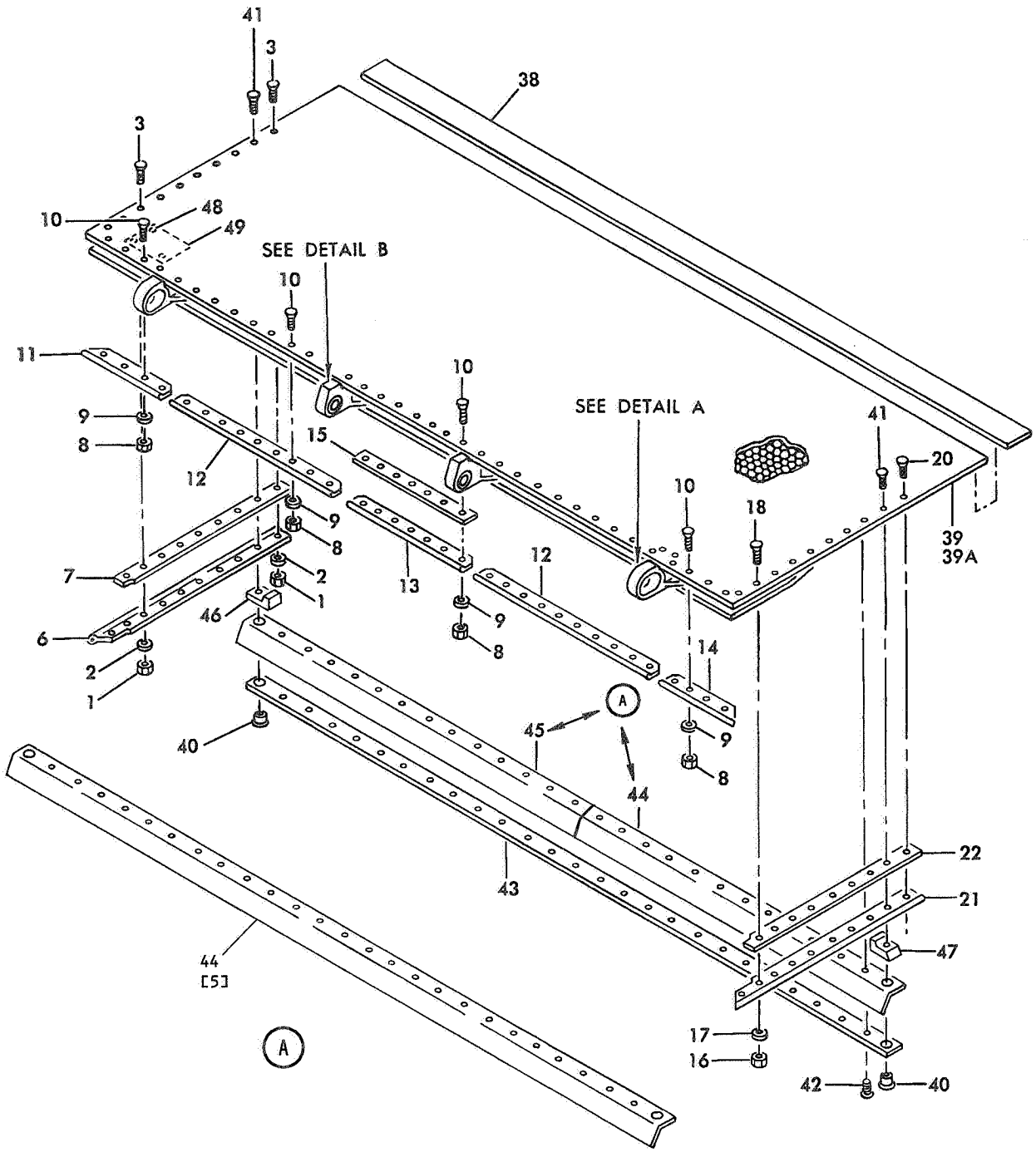
9. ILLUSTRATED PARTS LIST





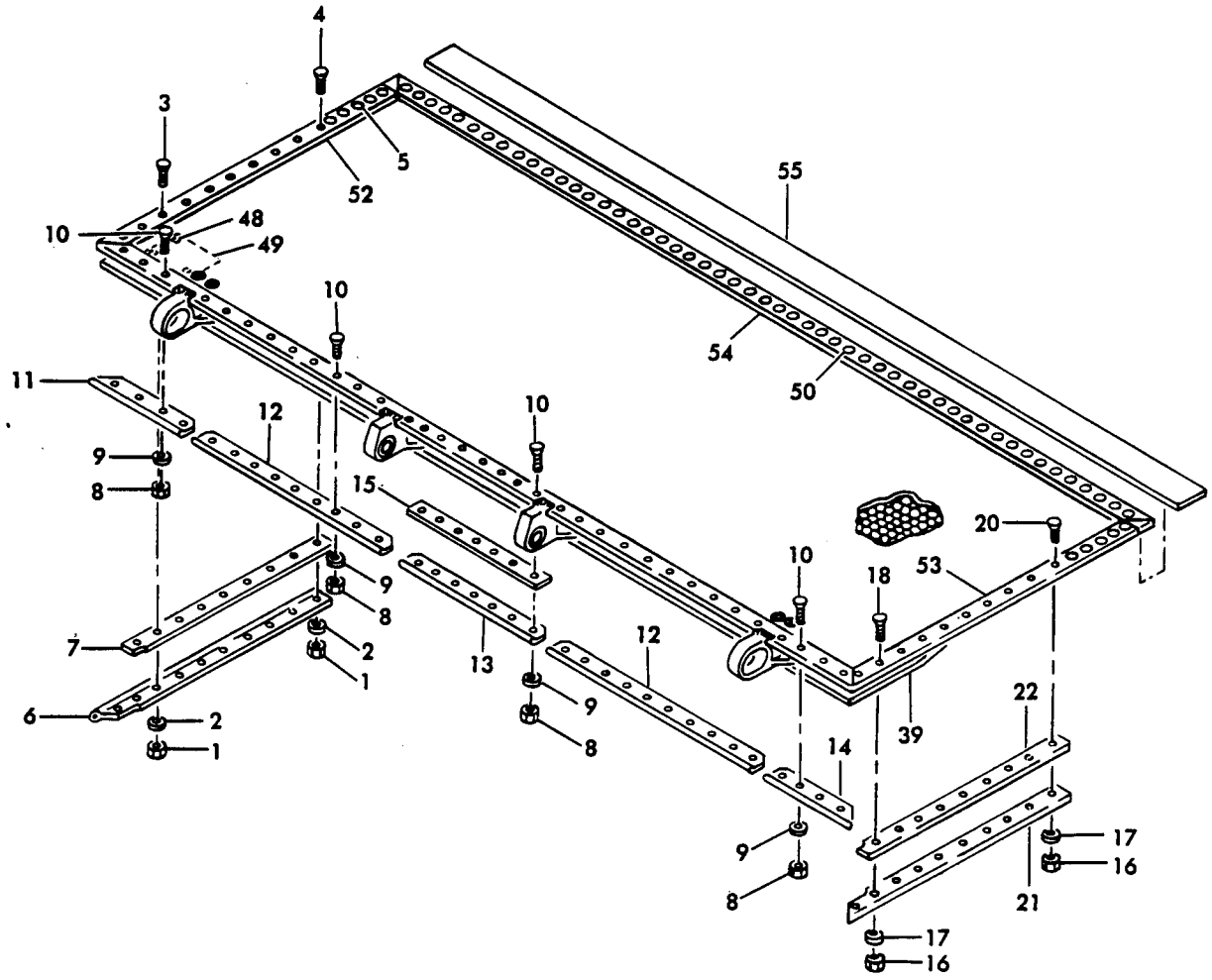


Flight Spoiler Panel Assembly
Figure 2 (Sheet 1)



ASSEMBLY 65-46451-29,-46,-50,-51,-59,-60,-61,-65,-68,-70,-71

Flight Spoiler Panel Assembly
Figure 2 (Sheet 2)



ASSEMBLIES 65-79950-7, 65-79952-7 AND -8

Flight Spoiler Panel Assembly
Figure 2 (Sheet 3)

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
2-					
	65-46451-23		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	A	RF
	65-46451-25		FLT SPOILER PANEL ASSY (SB 57-1042) (PRE SB 57-1227)	B	RF
	65-46451-29		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	C	RF
	65-79950-7		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	D	RF
	65-79952-7		FLT SPOILER PANEL ASSY (SB 57-1053) (PRE SB 57-1227)	E	RF
	65-79952-8		FLT SPOILER PANEL ASSY (SB 57-1053) (PRE SB 57-1227)	F	RF
	65-46451-50		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	G	RF
	65-46451-51		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	H	RF
	65-46451-46		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	I	RF
	65-46451-59		FLT SPOILER ASSY (PRE SB 57-1227)	J	RF
	65-46451-60		FLT SPOILER ASSY (OPP -59) (PRE SB 57-1227)	K	RF
	65-46451-61		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	L	RF
	65-46451-65		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	M	RF
	65-46451-68		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	N	RF
	65-46451-70		FLT SPOILER PANEL ASSY (PRE SB 57-1227)	P	RF
	65-46451-71		FLT SPOILER PANEL ASSY (POST SB 57-1227)	Q	RF
1	BACN10JC08		. NUT		*[1]
2	AN960PD8L		. WASHER		*[1]
3	BACB30FL2-1		. BOLT	ABDEF	9
3	BACB30LU2-2		. BOLT	CG-PQ	*[2]
4	NAS514P832-7		. SCREW	BDF	1
5	NAS514P832-7		. SCREW	AEL-PQ	1
6	65-46451-11		. SEAL	AE	1
6	65-46451-27		. SEAL (SB 57-1042)	BCDF G-PQ	1
7	65-46451-19		. FILLER	AE	1
7	65-46451--26		. FILLER (SB 57-1042)	BCDF G-PQ	1
8	BACN10JC08		. NUT		35
9	AN960PD8L		. WASHER		35

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
2-					
10	BACB30FL2-1		. BOLT	ABDEF	35
10	BACB30LU2-2		. BOLT	CG-PQ	35
11	65-46451-13		. SEAL		1
12	65-46451-15		. SEAL		2
13	65-46451-16		. SEAL		1
14	65-46451-14		. SEAL		1
15	65-46451-20		. FILLER		1
16	BACN10JC08		. NUT		*[1]
17	AN960PD8L		. WASHER		*[1]
18	BACB30FL2-1		. BOLT	ABDEF	9
18	BACB30LU2-2		. BOLT	CG-PQ	*[2]
19	NAS514P832-7		. SCREW	BDF	1
20	NAS514P832-7		. SCREW	AEL-PQ	1
21	65-46451-12		. SEAL	AE	1
21	65-46451-28		. SEAL (SB 57-1042)	BCDF G-PQ	1
22	65-46451-19		. FILLER	AE	1
22	65-46451-26		. FILLER (SB 57-1042)	BCDF G-PQ	1
23	BACN10JC3		. NUT		8
24	AN960PD10		. WASHER		8
25	NAS1103-4		. BOLT	ABDEF	4
25	BACB30NE3-4		. BOLT	CG-PQ	4
26	BACB30LU3-4		. BOLT		4
26A	BACW10UC10		. WASHER	CG-PQ	4
27	BACR15BB6D		. RIVET		6
28	69-37870-3		. FITTING, HINGE, SLOTTED	H-PQ	2
28	69-37870-5		. FITTING, HINGE (OPT TO 69-37870-3)	H-K	2
28	69-37870-1		. FITTING, HINGE, SLOTTED	A-G	2
29	BACS40A23-29		. SHIM		1
30	BACS40A12-29		. SHIM		1
31	MS16625-1100		. RING, RETAINING		2
32	176018		. BEARING, V09455 (BOEING 10-60545-144)(10-60545-144A OPT TO 10-60545-144)(PRE SB 57-1227)		2
32	WBS16ATC32-2		. BEARING, V21335 (OPT)		2
32	YTA-136A		. BEARING, V77896 (OPT)		2
32	BLFR-8-078		. BEARING, V81376 (OPT)		2
32	KSBY8N15		. BEARING, V97613 (OPT)		
32	KSC178608V		. BEARING, V50632 (POST SB 57-1227)		2
33	65-49507-10		. FITTING ASSY, HINGE	H-K	1
33	65-49507-8		. FITTING ASSY, HINGE	A-G	1
33	65-49507-16		. FITTING ASSY, HINGE	L-PQ	1
33	65-49507-6		. FITTING ASSY, HINGE (OPT TO 65-49507-4, -8)	ABDEF	1
33	65-49507-4		. FITTING ASSY, HINGE (OPT TO 65-49507-6, -8)	ABDEF	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
2-					
34	65-49507-11		. . FITTING, HINGE (USED ON 65-49507-10)		1
34	65-49507-9		. . FITTING, HINGE (USED ON 65-49507-8)		1
34	65-49507-7		. . FITTING, HINGE (USED ON 65-49507-6)		1
34	65-49507-5		. . FITTING, HINGE (USED ON 65-49507-4)		1
34	65-49507-17		. . FITTING, HINGE (USED ON 69-49507-16)		1
35	NAS77A12-40P		. . BUSHING		2
36	BACR15BB6D		. RIVET		20
37	BACR15CE5D		. RIVET		20
38	65-46451-10		. STRIP, RUB		1
39	65-46451-24		. HONEYCOMB ASSY	ABDEF	1
39	65-46451-34		. HONEYCOMB ASSY	C	1
39	65-46451-53		. HONEYCOMB ASSY	G	1
39	65-46451-54		. HONEYCOMB ASSY	HJK	1
39	65-46451-63		. HONEYCOMB ASSY	L-PQ	1
39	65-46451-45		. HONEYCOMB PANEL	I	1
39A	65-46451-72		. HONEYCOMB ASSY	Q	1
39A	65-46451-30		. . HONEYCOMB PANEL (USED ON 65-46451-34)		1
39A	65-46451-49		. . HONEYCOMB PANEL (USED ON 65-46451-53)		1
39A	65-46451-52		. . HONEYCOMB PANEL (USED ON 65-46451-54)		1
39A	65-46451-62		. . HONEYCOMB PANEL (USED ON 65-46451-63)		1
40	BACN10RB08		. NUT *[3]	CGHJ-Q	2
41	BACB30LU2-4		. BOLT *[3]	CGHJ-Q	2
41A	BACB30LU2-5		. BOLT *[4]	NP	2
42	BACB30LU3-1		. BOLT *[3]	CGHJ-Q	25
43	65-46451-33		. RETAINER	CGHJ-Q	1
44	65-46451-31		. SEAL (PRE SB 57-1192)	CGHJ-L	1
44	65-46451-67		. SEAL (PRE SB 57-1192)	MN	1
44	65-46451-69		. SEAL *[5]	PQ	1
44	65-46451-69		. SEAL (POST SB 57-1192)	CGHJ-L MN	1
45	65-46451-32		. SEAL (PRE SB 57-1192)	CGHJ-L	1
45	65-46451-66		. SEAL (PRE SB 57-1192)	MN	1
45	65-46451-69		. SEAL (POST SB 57-1192)	CGHJ-L MN	1
46	65-76174-3		. SPACER	CGHJ-Q	1
47	65-76174-4		. SPACER	CGHJ-Q	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
48	BACR15BB3D4		. RIVET		3
49	AN7510-1		. PLATE, IDENTIFICATION		1
50	MS20426A4-4		. RIVET	D	61
51	65-79950-8		. STRIP, CAP	D	1
52	65-79950-9		. STRIP, CAP	D	1
53	65-79950-10		. STRIP, CAP	D	1
54	65-79950-11		. STRIP, CAP	D	1
55	65-79950-12		. STRIP, RUB	D	1

*[1] USE ITEM 11 EXCEPT WITH ITEMS (40, 41, 42), USE ITEM 10
*[2] USE ITEM 9 EXCEPT WITH ITEMS (40, 41, 42), USE ITEM8
*[3] USED WITH ITEMS (43 THRU 47)
*[4] USED WITH ITEM 46
*[5] ONE PIECE BLADE SEAL 65-46451-69
USED WITH 65-46451-70, -71 ASSEMBLIES

VENDORS

V09455 LEAR SIEGLER INC., TRANSPORT DYNAMICS DIV., 3131 W., SEGERSTROM AVE., SANTA ANA, CALIFORNIA 92702

V21335 THE FAFNIR BEARING CO., DIVISION OF TEXTRON INC., 37 BOOTH ST., NEW BRITAIN, CONNECTICUT 06050

V50632 KAMATICS CORP., 1335 BLUE HILLS AVE., BLOOMFIELD, CT 06002-1304

V77896 REX CHAINBELT, INC., BEARING DIV., 2400 CURTISS ST., DOWNER'S GROVE, ILLINOIS 60515

V81376 SOUTHWEST PRODUCTS CO., 1705 SO. MOUNTAIN AVE., MONROVIA, CALIFORNIA 91016

V97613 SARGENT INDUSTRIES, KAHR BEARING DIV., 3010 NORTH FERNANDO BLVD., BURBANK, CALIFORNIA 91503