

CHAPTER

31

INSTRUMENTS

MD-80 AIRCRAFT MAINTENANCE MANUAL

CHAPTER 31 INSTRUMENTS

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31-EFFECTIVE PAGES			31-11-01			31-11-02 Config 2 (cont)		
1 thru 8	AUG 01/2016		1	Feb 01/2015		3	Feb 01/2015	
31-CONTENTS			2	Feb 01/2016		4	Feb 01/2016	
1	Feb 01/2016		3	Feb 01/2016		5	Feb 01/2015	
2	Feb 01/2016		4	Feb 01/2016		6	Feb 01/2015	
3	Feb 01/2016		5	Feb 01/2016		31-11-03		
4	Feb 01/2016		6	Feb 01/2016		1	Feb 01/2016	
5	Feb 01/2016		7	Feb 01/2016		2	Feb 01/2016	
6	BLANK		8	Feb 01/2016		3	Feb 01/2016	
31-00-00			9	Feb 01/2016		4	Feb 01/2015	
1	Feb 01/2015		10	Feb 01/2016		5	Feb 01/2016	
2	Feb 01/2015		11	Feb 01/2016		6	Feb 01/2015	
31-00-00			12	Feb 01/2016		7	Feb 01/2016	
201	Feb 01/2015		13	Feb 01/2016		8	Feb 01/2015	
202	BLANK		14	Feb 01/2016		9	Feb 01/2015	
31-00-01			15	Feb 01/2016		10	Feb 01/2015	
201	Feb 01/2015		16	Feb 01/2016		11	Feb 01/2015	
202	Feb 01/2015		17	Feb 01/2016		12	BLANK	
203	Feb 01/2015		18	Feb 01/2016		31-11-04		
204	Feb 01/2015		31-11-02 Config 1			1	Feb 01/2016	
205	Feb 01/2015		1	Feb 01/2016		2	Feb 01/2016	
206	BLANK		2	Feb 01/2016		3	Feb 01/2016	
31-00-02			3	Feb 01/2016		4	Feb 01/2015	
201	Feb 01/2015		4	Feb 01/2016		5	Feb 01/2016	
202	Feb 01/2016		5	Feb 01/2016		6	Feb 01/2015	
203	Feb 01/2015		6	Feb 01/2016		7	Feb 01/2016	
204	BLANK		7	Feb 01/2016		8	BLANK	
31-00-03			8	Feb 01/2016		31-11-05		
201	Feb 01/2015		9	Feb 01/2016		1	Feb 01/2016	
202	Feb 01/2015		10	Feb 01/2016		2	Feb 01/2016	
203	Feb 01/2015		11	Feb 01/2016		3	Feb 01/2016	
204	BLANK		12	Feb 01/2016		4	Feb 01/2016	
31-10-00			13	Feb 01/2016		5	Feb 01/2016	
1	Feb 01/2015		14	Feb 01/2016		6	Feb 01/2016	
2	BLANK		31-11-02 Config 2			7	Feb 01/2016	
			1	Feb 01/2016		8	Feb 01/2016	
			2	Feb 01/2015		9	Feb 01/2016	

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31-11-05 (cont)			31-12-02 (cont)			31-12-04 (cont)		
10	Feb 01/2016		15	May 01/2016		3	Feb 01/2016	
11	Feb 01/2016		16	May 01/2016		4	Feb 01/2016	
12	BLANK		17	May 01/2016		5	Feb 01/2016	
31-11-06			18	May 01/2016		6	Feb 01/2016	
1	Feb 01/2016		19	May 01/2016		7	Feb 01/2016	
2	Feb 01/2016		20	May 01/2016		8	Feb 01/2016	
3	Feb 01/2015		21	May 01/2016		9	Feb 01/2016	
4	BLANK		22	May 01/2016		10	Feb 01/2016	
31-12-01			23	May 01/2016		31-12-05		
1	Feb 01/2016		24	BLANK		1	Feb 01/2016	
2	Feb 01/2016		31-12-03			2	Feb 01/2016	
3	Feb 01/2016		1	Feb 01/2016		3	Feb 01/2015	
4	Feb 01/2016		2	May 01/2016		4	BLANK	
5	Feb 01/2016		3	May 01/2016		31-13-01 Config 1		
6	Feb 01/2016		4	May 01/2016		1	May 01/2016	
7	Feb 01/2016		5	May 01/2016		2	May 01/2016	
8	Feb 01/2016		6	May 01/2016		3	Feb 01/2016	
9	Feb 01/2016		7	May 01/2016		4	Feb 01/2016	
10	Feb 01/2016		8	May 01/2016		5	Feb 01/2016	
11	Feb 01/2016		9	May 01/2016		6	Feb 01/2016	
12	Feb 01/2016		10	May 01/2016		7	Feb 01/2016	
31-12-02			11	May 01/2016		8	Feb 01/2016	
1	Feb 01/2015		12	May 01/2016		9	Feb 01/2016	
2	May 01/2016		13	May 01/2016		10	Feb 01/2016	
3	May 01/2016		14	May 01/2016		11	Feb 01/2016	
4	May 01/2016		15	May 01/2016		12	Feb 01/2016	
5	May 01/2016		16	May 01/2016		13	Feb 01/2016	
6	May 01/2016		17	May 01/2016		14	Feb 01/2016	
7	May 01/2016		18	May 01/2016		15	Feb 01/2016	
8	May 01/2016		19	May 01/2016		16	Feb 01/2016	
9	May 01/2016		20	May 01/2016		17	Feb 01/2016	
10	May 01/2016		21	May 01/2016		18	Feb 01/2016	
11	May 01/2016		22	BLANK		19	Feb 01/2016	
12	May 01/2016		31-12-04			20	Feb 01/2016	
13	May 01/2016		1	Feb 01/2016		21	Feb 01/2016	
14	May 01/2016		2	Feb 01/2016		22	Feb 01/2016	

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31-13-01 Config 1 (cont)			31-14-01 (cont)			31-15-01 Config 1 (cont)		
23	Feb 01/2016		26	BLANK		35	May 01/2016	
24	Feb 01/2016		31-15-01 Config 1			36	May 01/2016	
25	Feb 01/2016		1	Feb 01/2015		37	May 01/2016	
26	Feb 01/2016		2	May 01/2016		38	May 01/2016	
27	Feb 01/2016		3	May 01/2016		39	May 01/2016	
28	Feb 01/2016		4	May 01/2016		40	May 01/2016	
29	Feb 01/2016		5	May 01/2016		41	May 01/2016	
30	Feb 01/2016		6	May 01/2016		42	May 01/2016	
31	Feb 01/2016		7	May 01/2016		43	May 01/2016	
32	BLANK		8	May 01/2016		44	May 01/2016	
31-14-01			9	May 01/2016		45	May 01/2016	
1	Feb 01/2016		10	May 01/2016		46	May 01/2016	
2	Feb 01/2016		11	May 01/2016		47	May 01/2016	
3	Feb 01/2016		12	May 01/2016		48	May 01/2016	
4	Feb 01/2015		13	May 01/2016		31-15-01 Config 4		
5	Feb 01/2015		14	May 01/2016		1	Feb 01/2015	
6	Feb 01/2016		15	May 01/2016		2	Feb 01/2015	
7	Feb 01/2016		16	May 01/2016		3	Feb 01/2015	
8	Feb 01/2015		17	May 01/2016		4	Feb 01/2015	
9	Feb 01/2016		18	May 01/2016		5	Feb 01/2015	
10	Feb 01/2015		19	May 01/2016		6	Feb 01/2015	
11	Feb 01/2015		20	May 01/2016		7	Feb 01/2015	
12	Feb 01/2015		21	May 01/2016		8	Feb 01/2015	
13	Feb 01/2015		22	May 01/2016		9	Feb 01/2015	
14	Feb 01/2016		23	May 01/2016		10	Feb 01/2015	
15	Feb 01/2015		24	May 01/2016		11	Feb 01/2015	
16	Feb 01/2015		25	May 01/2016		12	Feb 01/2015	
17	Feb 01/2016		26	May 01/2016		13	Feb 01/2015	
18	Feb 01/2016		27	May 01/2016		14	Feb 01/2015	
19	Feb 01/2015		28	May 01/2016		15	Feb 01/2015	
20	Feb 01/2015		29	May 01/2016		16	Feb 01/2015	
21	Feb 01/2015		30	May 01/2016		17	Feb 01/2015	
22	Feb 01/2015		31	May 01/2016		18	Feb 01/2015	
23	Feb 01/2015		32	May 01/2016		19	Feb 01/2015	
24	Feb 01/2016		33	May 01/2016		20	Feb 01/2015	
25	Feb 01/2015		34	May 01/2016		21	Feb 01/2015	

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31-15-01 Config 4 (cont)			31-15-03			31-21-00 Config 2 (cont)		
22	BLANK		1	Feb 01/2015		204	BLANK	
31-15-02			2	Feb 01/2016		31-22-01		
1	Feb 01/2015		3	Feb 01/2016		1	Feb 01/2015	
2	May 01/2016		4	Feb 01/2016		2	BLANK	
3	May 01/2016		5	Feb 01/2016		31-31-00 Config 1		
4	May 01/2016		6	Feb 01/2016		1	Feb 01/2016	
5	May 01/2016		7	Feb 01/2016		2	Feb 01/2016	
6	May 01/2016		8	BLANK		3	Feb 01/2016	
7	May 01/2016		31-20-00			4	Feb 01/2016	
8	May 01/2016		1	Feb 01/2016		5	Feb 01/2016	
9	May 01/2016		2	BLANK		6	Feb 01/2016	
10	May 01/2016		31-21-00 Config 1			7	Feb 01/2016	
11	May 01/2016		1	Feb 01/2016		8	Feb 01/2016	
12	May 01/2016		2	BLANK		9	Feb 01/2016	
13	May 01/2016		31-21-00 Config 2			10	Feb 01/2016	
14	May 01/2016		1	Feb 01/2016		11	Feb 01/2016	
15	May 01/2016		2	Feb 01/2016		12	Feb 01/2016	
16	May 01/2016		31-21-00 Config 1			13	Feb 01/2016	
17	May 01/2016		101	Feb 01/2016		14	Feb 01/2016	
18	May 01/2016		102	BLANK		15	Feb 01/2016	
19	May 01/2016		31-21-00 Config 2			16	Feb 01/2016	
20	May 01/2016		101	Feb 01/2016		17	Feb 01/2016	
21	May 01/2016		102	Feb 01/2016		18	Feb 01/2016	
22	May 01/2016		103	Feb 01/2015		19	Feb 01/2016	
23	May 01/2016		104	Feb 01/2015		20	Feb 01/2016	
24	May 01/2016		105	Feb 01/2015		21	Feb 01/2016	
25	May 01/2016		106	Feb 01/2015		22	Feb 01/2016	
26	May 01/2016		31-21-00 Config 1			23	May 01/2016	
27	May 01/2016		201	Feb 01/2016		24	May 01/2016	
28	May 01/2016		202	Feb 01/2016		25	May 01/2016	
29	May 01/2016		203	Feb 01/2016		26	May 01/2016	
30	May 01/2016		204	Feb 01/2016		27	May 01/2016	
31	May 01/2016		31-21-00 Config 2			28	May 01/2016	
32	May 01/2016		201	Feb 01/2016		29	May 01/2016	
			202	Feb 01/2016		30	May 01/2016	
			203	Feb 01/2016		31	May 01/2016	

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31-31-00 Config 1 (cont)			31-31-00 Config 1 (cont)			31-31-00 Config 1 (cont)		
32	May 01/2016		511	Feb 01/2016		547	Feb 01/2016	
33	May 01/2016		512	Feb 01/2016		548	Feb 01/2016	
34	May 01/2016		513	Feb 01/2016		549	Feb 01/2016	
35	May 01/2016		514	Feb 01/2016		550	Feb 01/2016	
36	May 01/2016		515	Feb 01/2016		551	Feb 01/2016	
37	May 01/2016		516	Feb 01/2016		552	Feb 01/2016	
38	May 01/2016		517	Feb 01/2016		553	Feb 01/2016	
39	May 01/2016		518	Feb 01/2016		554	Feb 01/2016	
40	May 01/2016		519	Feb 01/2016		555	Feb 01/2016	
41	May 01/2016		520	Feb 01/2016		556	Feb 01/2016	
42	May 01/2016		521	Feb 01/2016		557	Feb 01/2016	
43	May 01/2016		522	Feb 01/2016		558	Feb 01/2016	
44	May 01/2016		523	Feb 01/2016		559	Feb 01/2016	
45	May 01/2016		524	Feb 01/2016		560	BLANK	
46	May 01/2016		525	Feb 01/2016		31-31-00 Config 2		
47	May 01/2016		526	Feb 01/2016		501	Feb 01/2016	
48	May 01/2016		527	Feb 01/2016		502	Feb 01/2016	
49	May 01/2016		528	Feb 01/2016		503	Feb 01/2016	
50	May 01/2016		529	Feb 01/2016		504	Feb 01/2016	
51	May 01/2016		530	Feb 01/2016		505	Feb 01/2016	
52	May 01/2016		531	Feb 01/2016		506	Feb 01/2016	
53	May 01/2016		532	Feb 01/2016		507	Feb 01/2016	
54	May 01/2016		533	Feb 01/2016		508	Feb 01/2016	
55	May 01/2016		534	Feb 01/2016		509	Feb 01/2016	
56	May 01/2016		535	Feb 01/2016		510	Feb 01/2016	
31-31-00 Config 1			536	Feb 01/2016		511	Feb 01/2016	
501	Feb 01/2016		537	Feb 01/2016		512	Feb 01/2016	
502	Feb 01/2016		538	Feb 01/2016		513	Feb 01/2016	
503	Feb 01/2016		539	Feb 01/2016		514	Feb 01/2016	
504	Feb 01/2016		540	Feb 01/2016		515	Feb 01/2016	
505	Feb 01/2016		541	Feb 01/2016		516	Feb 01/2016	
506	Feb 01/2016		542	Feb 01/2016		517	Feb 01/2016	
507	Feb 01/2016		543	Feb 01/2016		518	Feb 01/2016	
508	Feb 01/2016		544	Feb 01/2016		519	Feb 01/2016	
509	Feb 01/2016		545	Feb 01/2016		520	Feb 01/2016	
510	Feb 01/2016		546	Feb 01/2016		521	Feb 01/2016	

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31-31-00 Config 2 (cont)			31-31-00 Config 2 (cont)			31-31-00 Config 12 (cont)		
522	Feb 01/2016		558	Feb 01/2016		518	Feb 01/2015	C
523	Feb 01/2016		559	Feb 01/2016		519	Feb 01/2015	C
524	Feb 01/2016		560	BLANK		520	Feb 01/2015	C
525	Feb 01/2016		31-31-00 Config 3			521	Feb 01/2015	C
526	Feb 01/2016		501	Feb 01/2015		522	Feb 01/2015	C
527	Feb 01/2016		502	Feb 01/2015		523	Feb 01/2015	C
528	Feb 01/2016		503	Feb 01/2015		524	BLANK	
529	Feb 01/2016		504	Feb 01/2015		31-31-01		
530	Feb 01/2016		505	Feb 01/2015		201	Feb 01/2016	
531	Feb 01/2016		506	Feb 01/2015		202	Feb 01/2016	
532	Feb 01/2016		507	Feb 01/2015		203	Feb 01/2016	
533	Feb 01/2016		508	Feb 01/2015		204	Feb 01/2015	
534	Feb 01/2016		509	Feb 01/2015		205	Feb 01/2016	
535	Feb 01/2016		510	Feb 01/2015		206	Feb 01/2016	
536	Feb 01/2016		511	Feb 01/2015		207	Feb 01/2016	
537	Feb 01/2016		512	Feb 01/2015		208	BLANK	
538	Feb 01/2016		513	Feb 01/2015		31-31-01		
539	Feb 01/2016		514	BLANK		501	Feb 01/2015	
540	Feb 01/2016		31-31-00 Config 12			502	Feb 01/2015	
541	Feb 01/2016		501	Feb 01/2015	C	31-31-02 Config 1		
542	Feb 01/2016		502	Feb 01/2015	C	201	Feb 01/2016	
543	Feb 01/2016		503	Feb 01/2015	C	202	Feb 01/2016	
544	Feb 01/2016		504	Feb 01/2015	C	203	Feb 01/2016	
545	Feb 01/2016		505	Feb 01/2015	C	204	Feb 01/2016	
546	Feb 01/2016		506	Feb 01/2015	C	205	Feb 01/2016	
547	Feb 01/2016		507	Feb 01/2015	C	206	BLANK	
548	Feb 01/2016		508	Feb 01/2015	C	31-31-02 Config 2		
549	Feb 01/2016		509	Feb 01/2015	C	201	Feb 01/2015	
550	Feb 01/2016		510	Feb 01/2015	C	202	Feb 01/2015	
551	Feb 01/2016		511	Feb 01/2015	C	203	Feb 01/2015	
552	Feb 01/2016		512	Feb 01/2015	C	204	BLANK	
553	Feb 01/2016		513	Feb 01/2015	C	31-31-03 Config 1		
554	Feb 01/2016		514	Feb 01/2015	C	201	Feb 01/2016	
555	Feb 01/2016		515	Feb 01/2015	C	202	Feb 01/2016	C
556	Feb 01/2016		516	Feb 01/2015	C	203	Feb 01/2016	
557	Feb 01/2016		517	Feb 01/2015	C	204	Feb 01/2016	

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Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
31-31-03 Config 1 (cont)			31-31-10 (cont)			31-51-00		
205	Feb 01/2016		203	Feb 01/2016		201	Feb 01/2015	
206	Feb 01/2016		204	Feb 01/2015		202	Feb 01/2016	
207	Feb 01/2015		31-31-11 Config 1			203	Feb 01/2016	
208	Feb 01/2016		201	Feb 01/2015		204	Feb 01/2016	
31-31-04			202	Feb 01/2015		205	Feb 01/2016	
201	Feb 01/2016		203	Feb 01/2015		206	Feb 01/2015	
202	Feb 01/2016		204	Feb 01/2015		207	Feb 01/2015	
203	Feb 01/2016		205	Feb 01/2015		208	Feb 01/2016	
204	Feb 01/2015		206	Feb 01/2015		209	Feb 01/2016	
31-31-05			31-31-12 Config 1			210	Feb 01/2016	
201	Feb 01/2016		201	Feb 01/2015		211	Feb 01/2016	
202	Feb 01/2016		202	Feb 01/2015		212	Feb 01/2016	
203	Feb 01/2016		203	Feb 01/2015		213	Feb 01/2016	
204	BLANK		204	Feb 01/2016		214	Feb 01/2016	
31-31-06			205	Feb 01/2015		215	Feb 01/2016	
201	Feb 01/2016		206	Feb 01/2016		216	Feb 01/2016	
202	Feb 01/2016		207	Feb 01/2015		217	Feb 01/2016	
203	Feb 01/2016		208	Feb 01/2015		218	Feb 01/2016	
204	Feb 01/2016		209	Feb 01/2015		219	Feb 01/2016	
205	Feb 01/2016		210	Feb 01/2015		220	Feb 01/2016	
206	Feb 01/2016		211	Feb 01/2015		221	Feb 01/2016	
207	Feb 01/2016		212	Feb 01/2015		222	Feb 01/2016	
208	BLANK		213	Feb 01/2015		223	Feb 01/2016	
31-31-08			214	BLANK		224	Feb 01/2016	
201	Feb 01/2016		31-31-12			225	Feb 01/2016	
202	Feb 01/2016		401	Feb 01/2015		226	Feb 01/2016	
203	Feb 01/2016		402	BLANK		227	Feb 01/2016	
204	BLANK		31-51-00			228	Feb 01/2016	
31-31-09			1	Feb 01/2016		229	Feb 01/2016	
201	Feb 01/2016		2	Feb 01/2016		230	Feb 01/2016	
202	Feb 01/2016		3	Feb 01/2016		231	Feb 01/2016	
203	Feb 01/2016		4	Feb 01/2016		232	Feb 01/2016	
204	Feb 01/2015		5	Feb 01/2016		233	Feb 01/2016	
31-31-10			6	Feb 01/2016		234	Feb 01/2016	
201	Feb 01/2016		7	Feb 01/2016		235	Feb 01/2016	
202	Feb 01/2016		8	BLANK		236	BLANK	

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31-51-00			31-61-00					
501	Feb 01/2016		201	Feb 01/2016				
502	Feb 01/2016		202	Feb 01/2016				
503	Feb 01/2015		31-61-01					
504	Feb 01/2016		201	Feb 01/2016				
505	Feb 01/2015		202	Feb 01/2016				
506	Feb 01/2015		203	Feb 01/2016				
31-51-01			204	BLANK				
201	Feb 01/2016		31-61-01					
202	Feb 01/2016		401	Feb 01/2016				
203	Feb 01/2015		402	Feb 01/2016				
204	Feb 01/2015		403	Feb 01/2016				
205	Feb 01/2016		404	BLANK				
206	Feb 01/2016							
207	Feb 01/2016							
208	BLANK							
31-51-02								
201	Feb 01/2016							
202	Feb 01/2016							
203	Feb 01/2016							
204	Feb 01/2016							
205	Feb 01/2016							
206	Feb 01/2016							
207	Feb 01/2016							
208	Feb 01/2016							
209	Feb 01/2016							
210	BLANK							
31-61-00								
1	Feb 01/2016							
2	Feb 01/2016							
31-61-00								
101	Feb 01/2016							
102	Feb 01/2016							
103	Feb 01/2015							
104	BLANK							

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<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>GENERAL - DESCRIPTION AND OPERATION</u>	31-00-00		1	WJE ALL
<u>GENERAL - MAINTENANCE PRACTICES</u>	31-00-00		201	WJE ALL
<u>INSTRUMENTS - GENERAL - MAINTENANCE PRACTICES</u>	31-00-01		201	WJE ALL
<u>INSTRUMENT PANELS - GENERAL - MAINTENANCE PRACTICES</u>	31-00-02		201	WJE ALL
<u>OVERHEAD PANELS - GENERAL - MAINTENANCE PRACTICES</u>	31-00-03		201	WJE ALL
<u>PANELS - DESCRIPTION AND OPERATION</u>	31-10-00		1	WJE ALL
<u>CAPTAIN'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION</u>	31-11-01		1	WJE ALL
<u>FIRST OFFICER'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION</u>	31-11-02	1	1	WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893
<u>FIRST OFFICER'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION</u>	31-11-02	2	1	WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891
<u>CENTER INSTRUMENT PANEL - DESCRIPTION AND OPERATION</u>	31-11-03		1	WJE ALL
<u>UPPER INSTRUMENT PANEL - DESCRIPTION AND OPERATION</u>	31-11-04		1	WJE ALL
<u>GLARESHIELD - DESCRIPTION AND OPERATION</u>	31-11-05		1	WJE ALL
<u>CONTROL WHEEL - DESCRIPTION AND OPERATION</u>	31-11-06		1	WJE ALL
<u>ANNUNCIATOR PANEL - DESCRIPTION AND OPERATION</u>	31-12-01		1	WJE ALL
<u>FORWARD OVERHEAD SWITCH PANEL - DESCRIPTION AND OPERATION</u>	31-12-02		1	WJE ALL
<u>OVERHEAD CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION</u>	31-12-03		1	WJE ALL
<u>AFT OVERHEAD SWITCH PANEL - DESCRIPTION AND OPERATION</u>	31-12-04		1	WJE ALL
<u>PILOT'S DISPLAY UNIT PANEL - DESCRIPTION AND OPERATION</u>	31-12-05		1	WJE ALL
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<u>LOWER EPC CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION</u>	31-15-02		1	WJE ALL
<u>EPC GENERATOR BUS CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION</u>	31-15-03		1	WJE ALL
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GENERAL - DESCRIPTION AND OPERATION

1. General

- A. The instruments chapter describes and pictorially presents instrument and control panels that mount the instruments, switches, and indicators which are necessary for the operation of the airplane. Components which are specifically related to other systems are covered in text in the applicable chapter. Figure 1 identifies and shows the location of the major panels.
- B. Independent instruments and unrelated systems are also included in this chapter. Separate, detailed coverage is provided for these components.
- C. Maintenance consists mostly of replacement of instruments, control panels, switches, and panel components. All components are readily accessible and can be maintained without the use of special tools.
- D. The general maintenance practices section in this chapter shows examples of instrument attachments, main panel accesses, and control panel removals. Separate detailed removal coverage is not provided if a component is installed using standard attachments. Precautions and safety measures which must be observed before removal of components are also included in the general maintenance practices section.
- E. Most of the instruments are clamp mounted. A few are secured to the panel with screws. Electrical connections are made using miniature bayonet, quick-disconnect type connectors. Wiring to each instrument is of sufficient length to permit removal of the instruments from the face of the panel.
- F. All flexible instrument lines and fittings are of the replacement type; nonkinking hose is used. Different size lines and fittings are installed to prevent inadvertent interchange of connections. The use of tees and crosses for connection to other instruments or instrument components is minimal.
- G. The accessibility to the main instrument panel and overhead panel components practically eliminates the requirement for complete removal of a panel fixture. The upper instrument and gusset panels consist of a one-piece frame assembly that is secured to structure and provides support for the captain's, first officer's, and center instrument panels. These three panels are attached to allow individual panel assemblies to slide aft and permit ready access to the forward side of the panels. Wiring and components on all main instrument panels are also accessible through the forward accessory compartment. Vibration isolation units are not used on the instrument panels.
- H. The overhead panels are installed in a contoured shaped fixture which is attached to structure. Quick-release fasteners permit ready access to the separate panel assemblies and components. The forward overhead switch panel is hinged and weighs approximately 60 pounds. The overhead circuit breaker panel is also hinged. Both the circuit breaker panel and the forward over-head switch panel are provided with a safety latch which prevents the panel falling when the fasteners are released. Caution should be used to support the panels when the safety latches are released. The annunciator panel and aft overhead switch panel are removable. The individual system control panels are attached with quick-action fasteners and use miniature bayonet quick-disconnect type connectors.

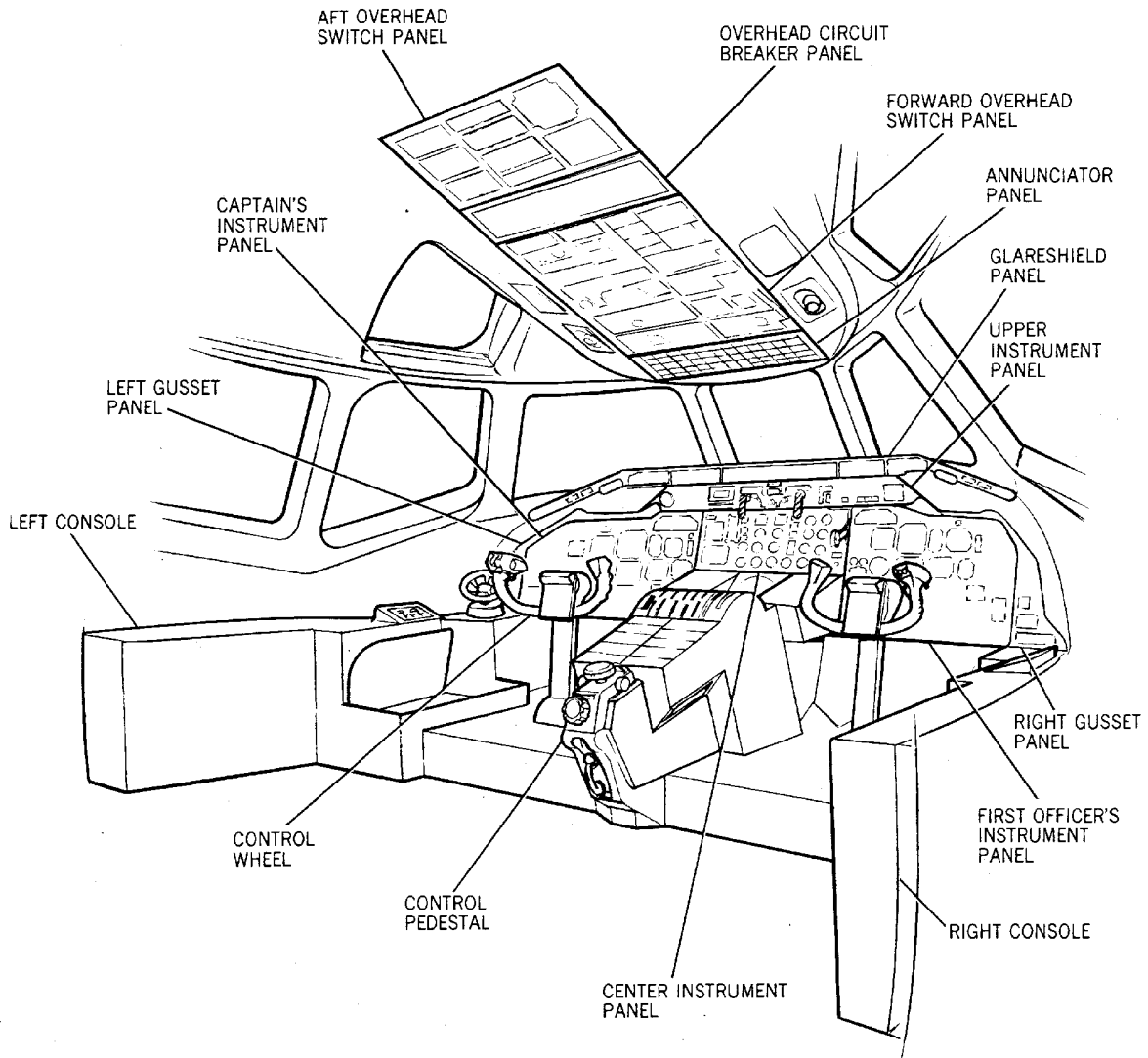
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Instrument and Control Panel Location
Figure 1/31-00-00-990-801

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GENERAL - MAINTENANCE PRACTICES

1. General

- A. Before performing instrument and control panel maintenance, applicable safety precautions should be selected in accordance with the work to be done. When replacing an instrument, switch or similar component, circuit breakers should be opened to deenergize the circuit. If work is performed adjacent to power system components on the overhead panels, external power must be removed and battery connections must be disconnected to deenergize the buses.

2. Safety Precautions

- A. Remove Power from Circuit
 - (1) Open applicable circuit breakers.
 - (2) Install inoperative ring S4933959-1 under circuit breaker button.
 - (3) Tag circuit breakers with warning sign:

WARNING: DO NOT CLOSE THIS CIRCUIT BREAKER. THIS CIRCUIT BREAKER MUST REMAIN OPEN UNTIL COMPLETION OF MAINTENANCE.

- B. Deenergize Power Buses
 - (1) Disconnect external power.
 - (2) Tag external power receptacle with warning sign.

WARNING: DO NOT APPLY EXTERNAL POWER.

- C. Remove Power from Battery Bus
 - (1) Disconnect left battery connections. (ELECTRICAL POWER, CHAPTER 24)
 - (2) Tag battery with warning sign.

3. Energize Circuits

WARNING: DO NOT CONNECT BATTERY.

- A. When work has been completed and panels are secured, perform following steps.
 - (1) Close circuit breakers, connect battery connections, or connect external power.
 - (2) Remove warning signs.

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INSTRUMENTS - GENERAL - MAINTENANCE PRACTICES

1. General

- A. Instruments installed in the flight compartment have either round or square faces. Regardless of the shape of the instrument it is either clamp mounted or bezel mounted in the panel. Clamp mounted instruments have the clamp adjustment and clamp attachment screw heads accessible on the panel face (Figure 201 view B or alternate view C). Bezel mounted instruments can have the screw heads accessible on the panel face (Figure 201 view C) or the screws can mount from the back side of the panel, such as on the cabin pressure controller. In either case, the entire panel must be opened for instrument removal (PAGEBLOCK 31-00-02/201).
- B. Electrical connection to an instrument, regardless of shape or mounting method, is by pendant connection (Figure 201 view B).
- C. The maintenance practices following provide instrument removal/ installation instructions and procedures for cleaning instrument glass lenses.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Liquid detergent (Joy) DPM 3673	Procter and Gamble Co.
Torque wrench (0 to 100 inch pound range)	
Window cleaner, acrylic Anomet DPM 6011	Anomet, Inc. Compton, CA.

3. Removal/Installation Instruments

CAUTION: DO NOT PRY INSTRUMENT FROM PANEL WITH SCREWDRIVER OR OTHER TOOL AS INSTRUMENT OR PANEL CAN BE DAMAGED.

- A. Remove Square Clamp Mounted Instrument

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open applicable system and lighting circuit breakers.
- (2) Support instrument and loosen clamp adjustment (instrument retaining) screws.
NOTE: Clamp adjustment (instrument retaining) screws have a larger round head size than clamp attachment screws, however, in some cases clamp attachment screws will have a flat head.
- (3) Press clamp adjustment screws in until flush with panel to release clamp pressure on instrument.
- (4) Loosen clamp attachment screws as necessary to relieve tension.
- (5) Carefully remove instrument from panel.
- (6) Carefully pull instrument from panel and disconnect electrical connector at back of instrument.
- (7) When removing instruments having tubing connections, tip instrument out of panel for access to tubing disconnect.

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- (8) Cap or plug instrument electrical connector and tubing ports.
- B. Remove Round Clamp Mounted Instrument

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open applicable system and lighting circuit breakers.
- (2) Support instrument and loosen clamp adjustment (instrument retaining) screw.

NOTE: Clamp adjustment (instrument retaining) screws have a larger round head size than clamp attachment screws, however, in some cases clamp attachment screws will have a flat head.

- (3) Loosen clamp attachment screws as necessary to relieve tension.
- (4) Carefully remove instrument from panel.
- (5) Carefully pull instrument from panel and disconnect electrical connector at back of instrument.
- (6) When removing instruments having tubing connections, tip instrument out of panel for access to tubing parts.
- (7) Cap or plug instrument electrical connector and tubing ports.
- C. Install Square or Round Clamp Mounted Instrument
- (1) Check that applicable circuit breakers are open and tagged.
- (2) Remove caps and plugs from connectors.
- (3) Connect tubing lines (if any) and tighten.
- (4) Connect electrical connector and position instrument in clamp in instrument panel.

CAUTION: DO NOT OVER TORQUE SCREWS. BINDING OF INTERNAL MECHANISM, DISTORTION OF CASE, OR DAMAGE TO SCREWS OR CLAMPS COULD OCCUR.

- (5) Secure clamp attachment screws; tighten to torque of 6 to 8 inch-pounds (0.68 to 0.90 N·m).
- NOTE:** Clamp adjustment (instrument retaining) screws have a larger round head size than clamp attachment screws, however, in some cases clamp attachment screws will have a flat head.
- (6) Secure clamp adjustment (instrument retaining) screws; tighten to torque of 6 to 8 inch-pounds (0.68 to 0.90 N·m).
- (7) Check operation of instrument per applicable instrument system chapter of Maintenance Manual.

4. Cleaning Instrument Glass Lenses

- A. All instrument glass lenses should be cleaned at frequent intervals. Whenever instruments with glass lenses are handled precautionary cleaning should be performed as fingerprint perspiration may permanently etch glass surfaces.

WARNING: LIQUID DETERGENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID DETERGENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

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(WARNING PRECEDES)

WARNING: ACRYLIC WINDOW CLEANER IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN ACRYLIC WINDOW CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET ACRYLIC WINDOW CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE MIST.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THESE HAZARDOUS AGENTS.

- B. Cleaning may be accomplished by using commercial liquid detergent or acrylic window cleaner. If solvent is used, care should be taken to insure compatibility of instrument mounting finish with solvent.
- C. Prior to applying cleaning solution to lens surfaces, all loose dust should be blown off with clean, dry air. Clean soft cloth must be used for both cleaning and drying.
- D. Cleaning process can cause static electricity to build up in the lens. Each glass lens should be touched gently with metallic object held in the hand to insure dissipation of any possible static charge.
- E. Cleaning Lenses
- (1) Prepare cleaning solution according to manufacturer's directions.
 - (2) Apply small amount of solution to lens.
 - (3) Apply clean rinse water.
 - (4) Wipe lens dry immediately.

NOTE: Failure to wipe lens dry immediately may result in stain which could permanently damage lens surface.

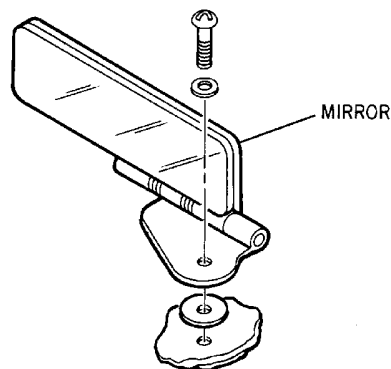
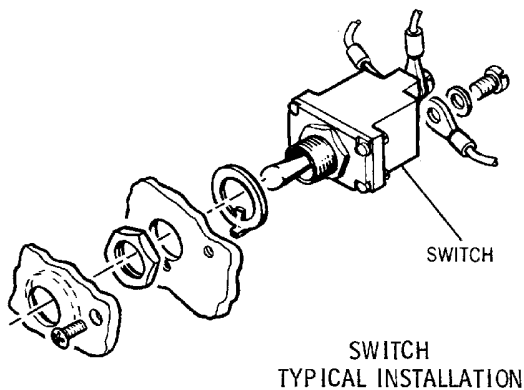
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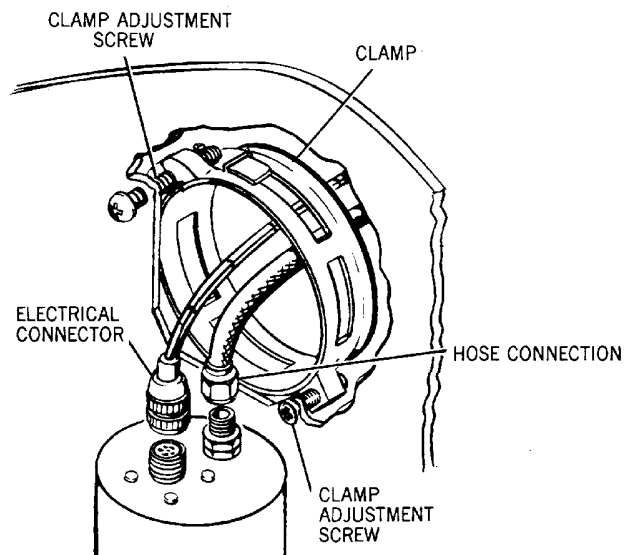
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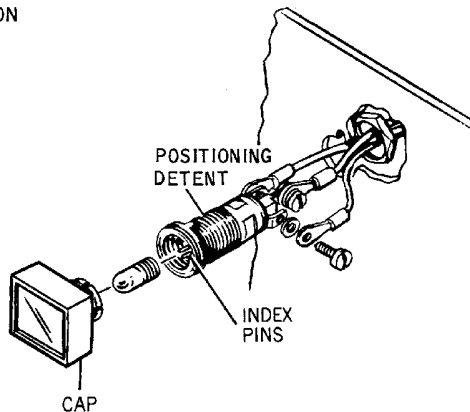


NOTE:
ADJUST MIRROR HARDWARE TO ALLOW
ROTATIONAL MOVEMENT OF MIRROR.

**MIRROR
TYPICAL INSTALLATION**



**ROUND INSTRUMENT CLAMP MOUNTED
PENDENT ELECTRICAL CONNECTION
TYPICAL INSTALLATION**



**LIGHT
TYPICAL INSTALLATION**

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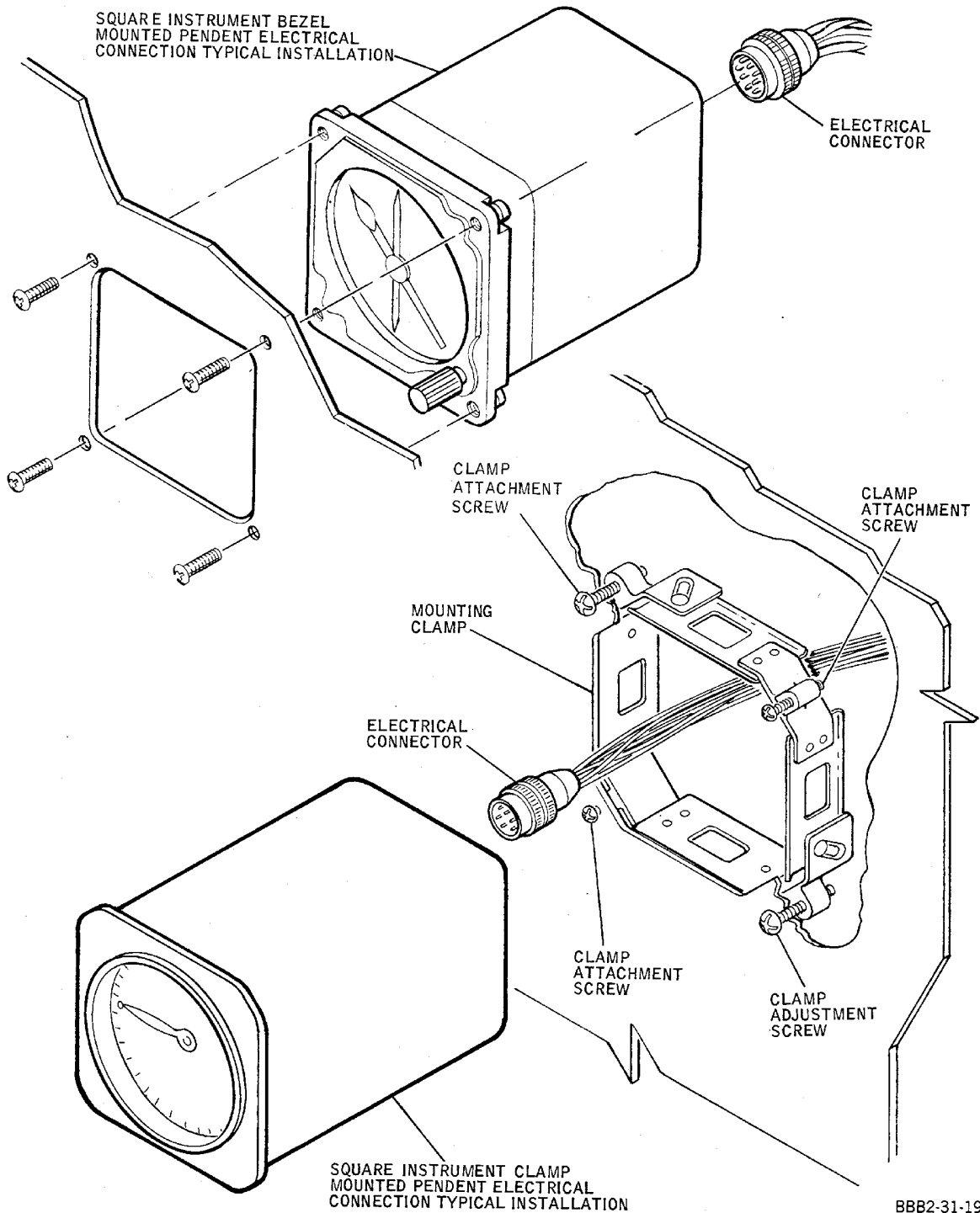
**Instrument Typical Installation
Figure 201/31-00-01-990-801 (Sheet 1 of 2)**

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Instrument Typical Installation
Figure 201/31-00-01-990-801 (Sheet 2 of 2)

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INSTRUMENT PANELS - GENERAL - MAINTENANCE PRACTICES

1. General

- A. The following instructions concern the removal/installation of the Captain's, First Officer's, and center instrument panels.

NOTE: For individual instrument removal and installation on Captain's, First Officer's and center instrument panels, (INSTRUMENTS - GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 31-00-01/201).

2. Removal/Installation Instrument Panels

- A. Remove Captain's/First Officer's Panel

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open applicable instrument lighting and system circuit breakers.
- (2) Secure control column in full aft position.

CAUTION: RUDDER PEDAL ADJUSTER GUIDE ASSEMBLY SHOULD BE RELEASED PRIOR TO OPENING OR REMOVING PANELS TO AVOID DAMAGE TO GUIDE AND CONTROL KNOB.

- (3) Release rudder pedal adjuster guide to avoid damage to guide and control knob.
- (4) Retract spring-loaded secondary safety latch, loosen quick-release fasteners securing panel to frame, and tilt panel down.
- (5) Disconnect all electrical connections and lines from panel.
- (6) Lift panel up to displace panel bar assembly from frame.

NOTE: The lifting motion shifts the pivot and displaces the bar assembly from the frame.

- B. Install Captain's/First Officer's Panel

- (1) Check that applicable circuit breakers are open.
- (2) Position panel bar assembly in frame and leave panel tilted down.
- (3) Connect all electrical connections and lines. Tighten lines.
- (4) Retract spring-loaded secondary safety latch and tilt panel up into position. Secure panel quick-release fasteners.
- (5) Secure rudder pedal adjuster guide.
- (6) Release control column.
- (7) Close circuit breakers and remove warning signs.
- (8) Check operation of instrument panel instruments, annunciators, lighting, switches, etc., per applicable system chapter of Maintenance Manual.

- C. Remove Center Instrument Panel

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open applicable instrument lighting and system circuit breakers.

CAUTION: TO PREVENT DISCHARGE OF BOTTLES CIRCUIT MUST BE DEENERGIZED AND HANDLES ROTATED PRIOR TO REMOVAL OF PANEL.

- (2) Open FIRE EXTINGUISHING CONTROL BOTTLE 1 and BOTTLE 2 circuit breakers located on dc transfer bus section of lower EPC circuit breaker panel and rotate fire extinguisher handles to clear center instrument panel.

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WJE 405-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893

- (3) Remove weather radar indicator. (PAGEBLOCK 34-41-02/201)

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- (4) Loosen fasteners and slide panel aft.
- (5) Disconnect all electrical connections and lines from panel.
- (6) Remove panel by pulling directly aft. Keep panel on plane perpendicular to frame so detent clears guide spacers.

D. Install Center Instrument Panel

- (1) Check that applicable circuit breakers and fire extinguisher control circuit breakers are open.
- (2) Hold panel on plane perpendicular to frame and slide into position.
- (3) Connect electrical connections and lines to panel. Tighten lines.
- (4) Prior to securing panel, check that landing gear anti-retraction lever is properly positioned through panel opening.

NOTE: Failure to properly position landing gear anti-retraction lever could prevent retraction of the gear.

- (5) Secure panel.

CAUTION: MAKE CERTAIN LANDING GEAR GROUND LOCKPINS ARE INSTALLED PRIOR TO DEPRESSURIZATION.

- (6) Depressurize main hydraulic system. (PAGEBLOCK 29-00-00/201)
- (7) Move landing gear control lever to retract and extend positions. Movement should be smooth and free of interference.
- (8) Make certain landing gear control lever is in extend position, pressurize main hydraulic system. (PAGEBLOCK 29-00-00/201)
- (9) Reposition fire extinguisher handles.

WJE 405-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893

- (10) Install and check operation of weather radar indicator. (PAGEBLOCK 34-41-02/201)

WJE ALL

- (11) Close circuit breakers and remove warning signs.
- (12) Check operation of instrument panel instruments, annunciators, lighting, switches, etc. per applicable system chapter of Maintenance Manual.

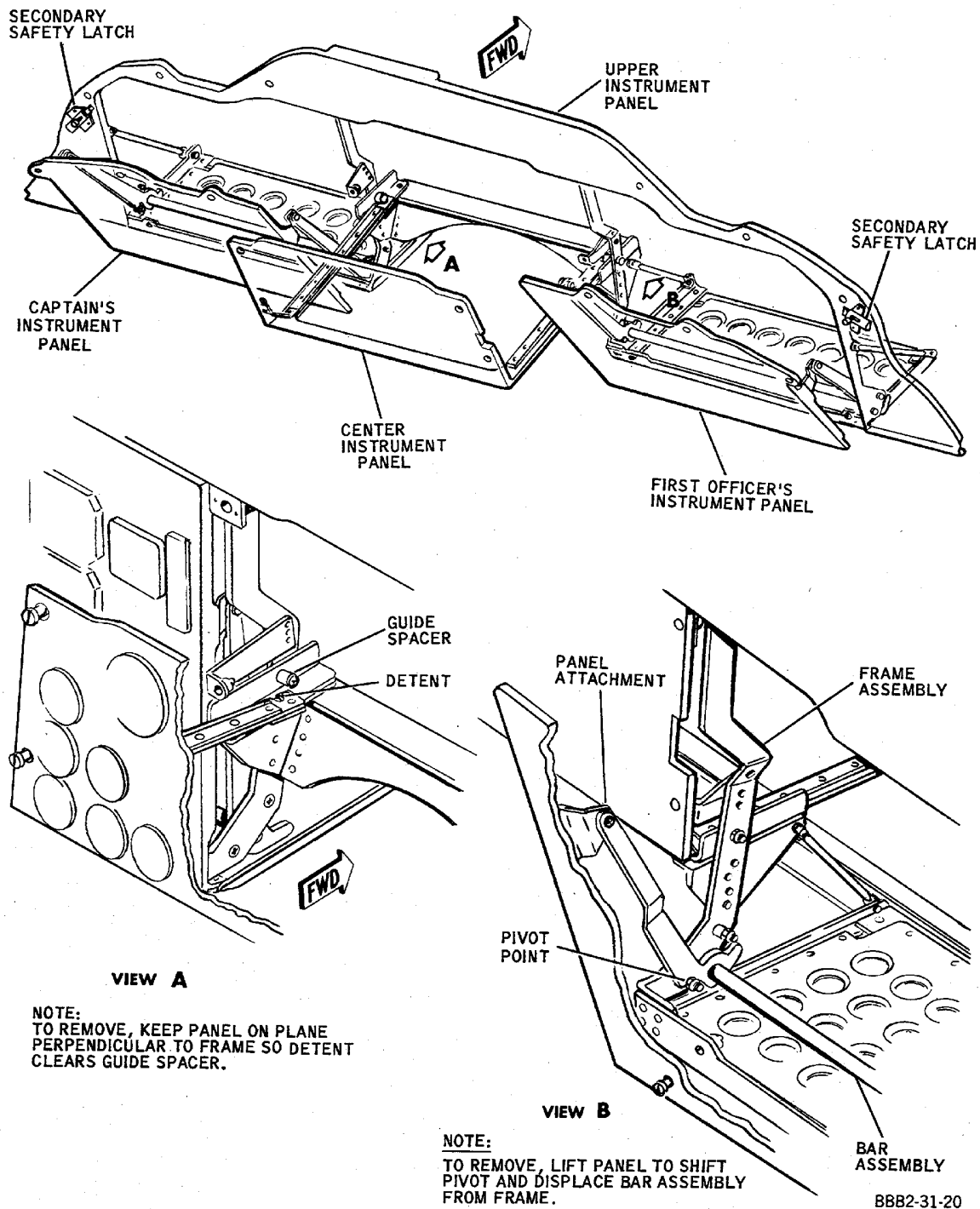
EFFECTIVITY
WJE ALL

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**Instrument Panels - Removal/Installation
Figure 201/31-00-02-990-801**

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WJE ALL

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OVERHEAD PANELS - GENERAL - MAINTENANCE PRACTICES

1. General

- A. The following instructions concern removal/installation of the annunciator panel, the forward overhead switch panel, the overhead circuit breaker panel, and the aft overhead switch panel.
- B. Prior to performing maintenance on the overhead panels, power should be removed from the circuits as instructed in safety precautions. (PAGEBLOCK 31-00-00/201)

2. Removal/Installation Overhead Panels

- A. Remove Annunciator Panel
 - (1) Deenergize overhead panel circuits.
 - (2) Support panel and remove attaching screws.
 - (3) Disconnect electrical connectors and remove panel.
- B. Install Annunciator Panel
 - (1) Check that overhead panel circuits are deenergized.
 - (2) Support panel and secure electrical connectors.
 - (3) Position panel and secure.
 - (4) Energize circuits.
- C. Remove Forward Overhead Switch Panel
 - (1) Deenergize overhead panel circuits.

WARNING: FORWARD OVERHEAD SWITCH PANEL WEIGHS APPROXIMATELY 60 POUNDS (27.22 KG). SUPPORT PANEL PRIOR TO RELEASING FASTENERS.

- (2) Support panel.
- (3) Loosen fasteners, release safety latch, and swing panel open on hinge.
- (4) Disconnect all electrical connectors and lines from panel.

CAUTION: MAKE CERTAIN PANEL IS SUPPORTED BEFORE REMOVING LANYARD TO PREVENT POSSIBLE DAMAGE TO PANELS WHEN FORWARD OVERHEAD SWITCH PANEL IS OPENED.

- (5) Disconnect lanyard from safety latch.
- (6) Remove hinge pin and remove panel.
- D. Install Forward Overhead Switch Panel
 - (1) Check that overhead panel circuits are deenergized.
 - (2) Position panel and install hinge pin.

CAUTION: MAKE CERTAIN LANYARD IS ATTACHED TO PREVENT POSSIBLE DAMAGE TO PANELS WHEN FORWARD OVERHEAD SWITCH PANEL IS OPENED.

- (3) Support panel and attach lanyards.
- (4) Connect electrical connectors and lines. Tighten lines.
- (5) Close and secure panel.
- (6) Energize circuits.
- E. Remove Overhead Circuit Breaker Panel
 - (1) Deenergize overhead panel circuits.
 - (2) Support panel and loosen fasteners.

EFFECTIVITY
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- (3) Release safety latch and swing panel open on hinge.
 - (4) Disconnect electrical connectors.
 - (5) Remove hinge pin and remove panel.
- F. Install Overhead Circuit Breaker Panel
- (1) Check that overhead panel circuits are deenergized.
 - (2) Position panel and install hinge pin.
 - (3) Connect electrical connectors.
 - (4) Close and secure panel.
 - (5) Energize circuits.
- G. Remove Aft Overhead Switch Panel
- (1) Deenergize overhead panel circuits.
 - (2) Support panel and remove attaching screws.
 - (3) Disconnect electrical connectors and lines.
 - (4) Release lanyards and remove panel.
- H. Install Aft Overhead Switch Panel
- (1) Check that overhead panel circuits are deenergized.
 - (2) Support panel and attach lanyards.
 - (3) Connect electrical connectors and lines. Tighten lines.
 - (4) Close and secure panel.
 - (5) Energize circuits.

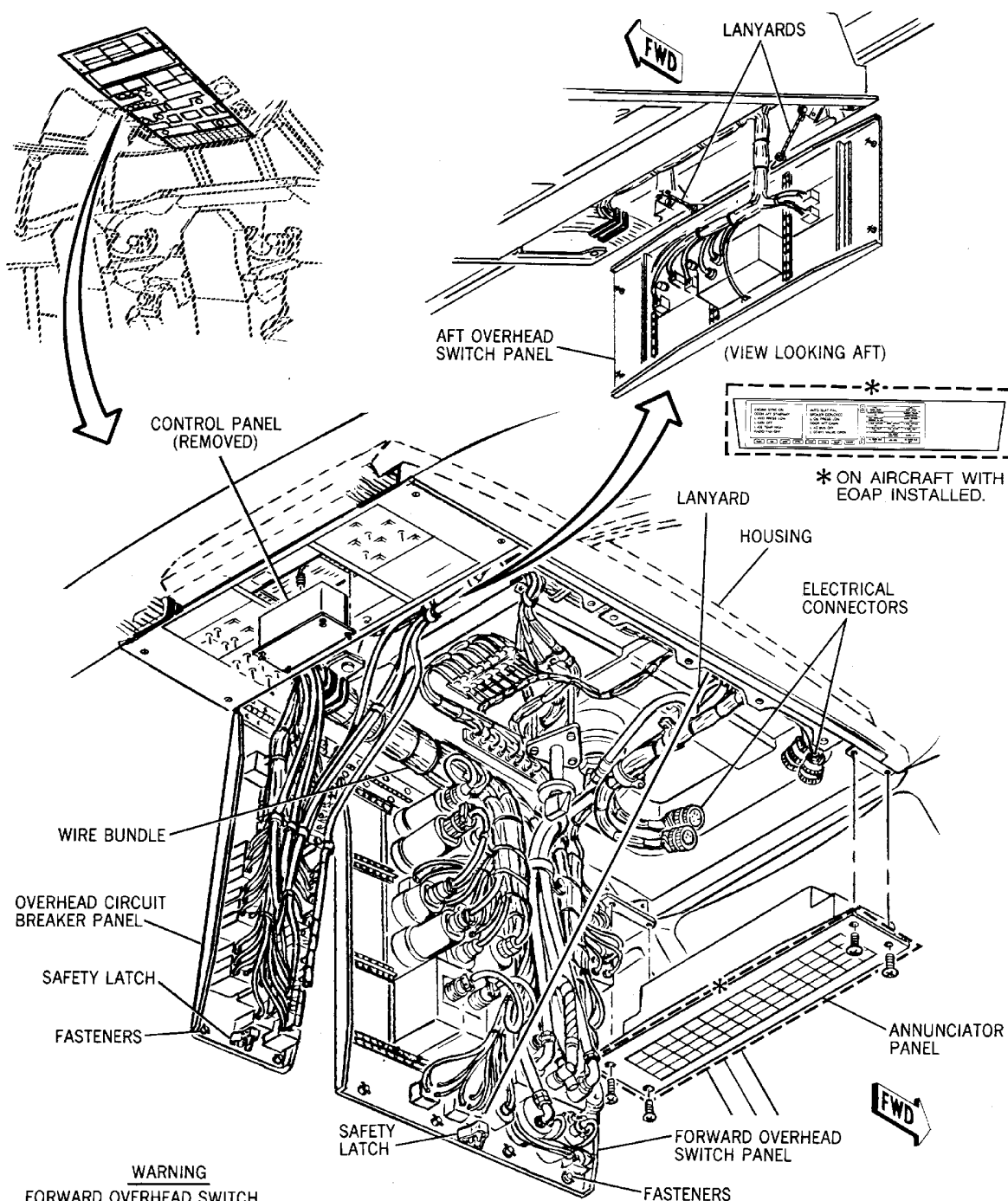
EFFECTIVITY
WJE ALL

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WARNING
FORWARD OVERHEAD SWITCH PANEL WEIGHS APPROXIMATELY 60 POUNDS. SUPPORT PANEL PRIOR TO RELEASING FASTENERS.

PANEL INSTALLATION (TYPICAL)

BBB2-31-21B

Overhead Panels - Removal/Installation
Figure 201/31-00-03-990-801

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WJE ALL

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PANELS - DESCRIPTION AND OPERATION

1. General

- A. The main instrument panel, overhead panel, control pedestal, and left and right consoles mount instruments and system control panels such as oxygen, lighting, and radio panels.
Indicating and control components pertaining to an individual system are usually grouped on the panels in adjoining positions.
- B. All flight, engine, and miscellaneous instruments have matte white dial markings on nonspecular black faces and are readable during daylight without artificial lighting. The standard instruments are graduated in U.S. or metric units of measurement, depending on customer requirement. All temperature indicators are graduated in degrees centigrade except the cabin temperature indicator which is graduated in degrees fahrenheit or degrees centigrade, depending on customer requirement. The airspeed indicators are graduated in knots or Mach number as applicable. Instrument limitation markings are located on the dial of all instruments requiring such markings. Some instruments have integral warning flags to indicate malfunction or loss of electrical power to the instrument or its associated system component, such as an amplifier, computer, or gyro.
- C. The control panels are lighted by internal lamp circuit boards (CONTROL PANEL LIGHTING - DESCRIPTION AND OPERATION, PAGEBLOCK 33-11-00/001).

EFFECTIVITY
WJE ALL

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CAPTAIN'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION

1. General

- A. The captain's instrument panel and left gusset panel are units of the main instrument panel and provide a glare-free mounting surface for the instruments most frequently monitored by the captain. The left gusset panel is adjacent to the captain's instrument panel.

2. Description

- A. Instruments and annunciators mounted on the captain's instrument panel, and left gusset panel see Figure 1 or Figure 2 or Figure 3 or Figure 4 or Figure 5.

3. Operation

- A. Instructions for operation of instruments on the captain's instrument panel are included in the specific instrument system chapter of the maintenance manual.

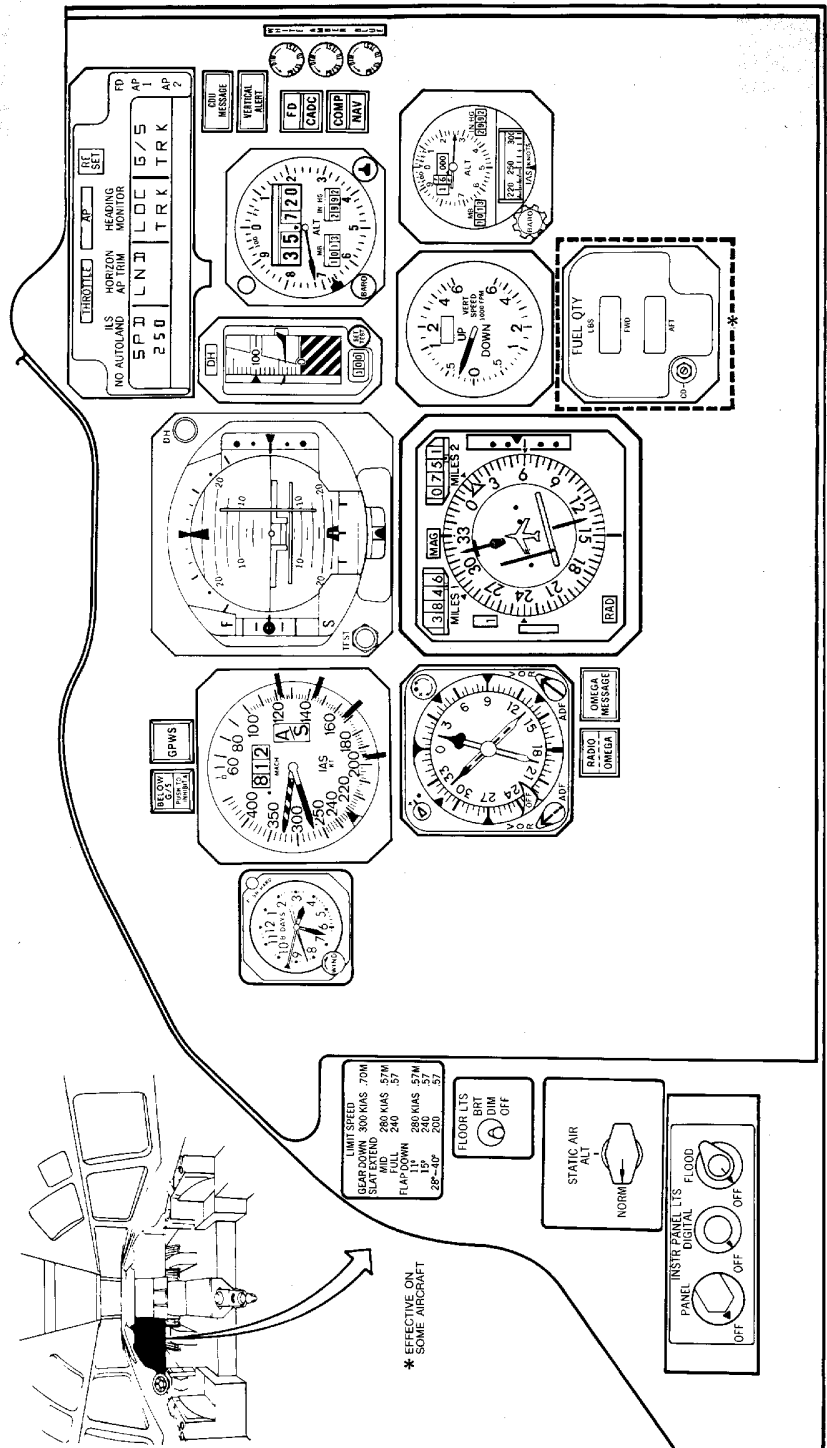
EFFECTIVITY
WJE ALL

TP-80MM-WJE

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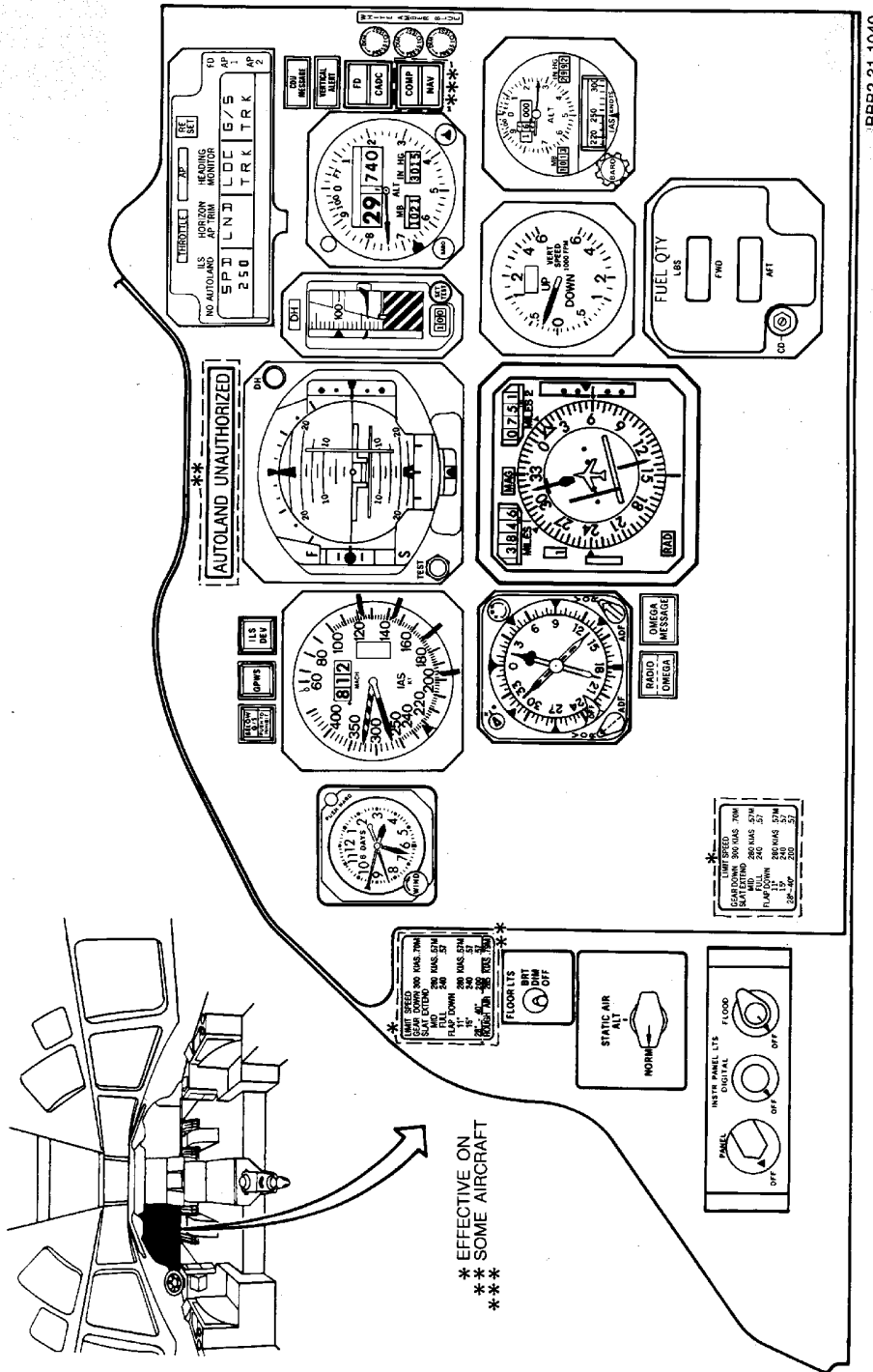


**Captain's Instrument Panel
Figure 1/31-11-01-990-801 (Sheet 1 of 5)**

EFFECTIVITY
WJE 405, 409, 884

31-11-01

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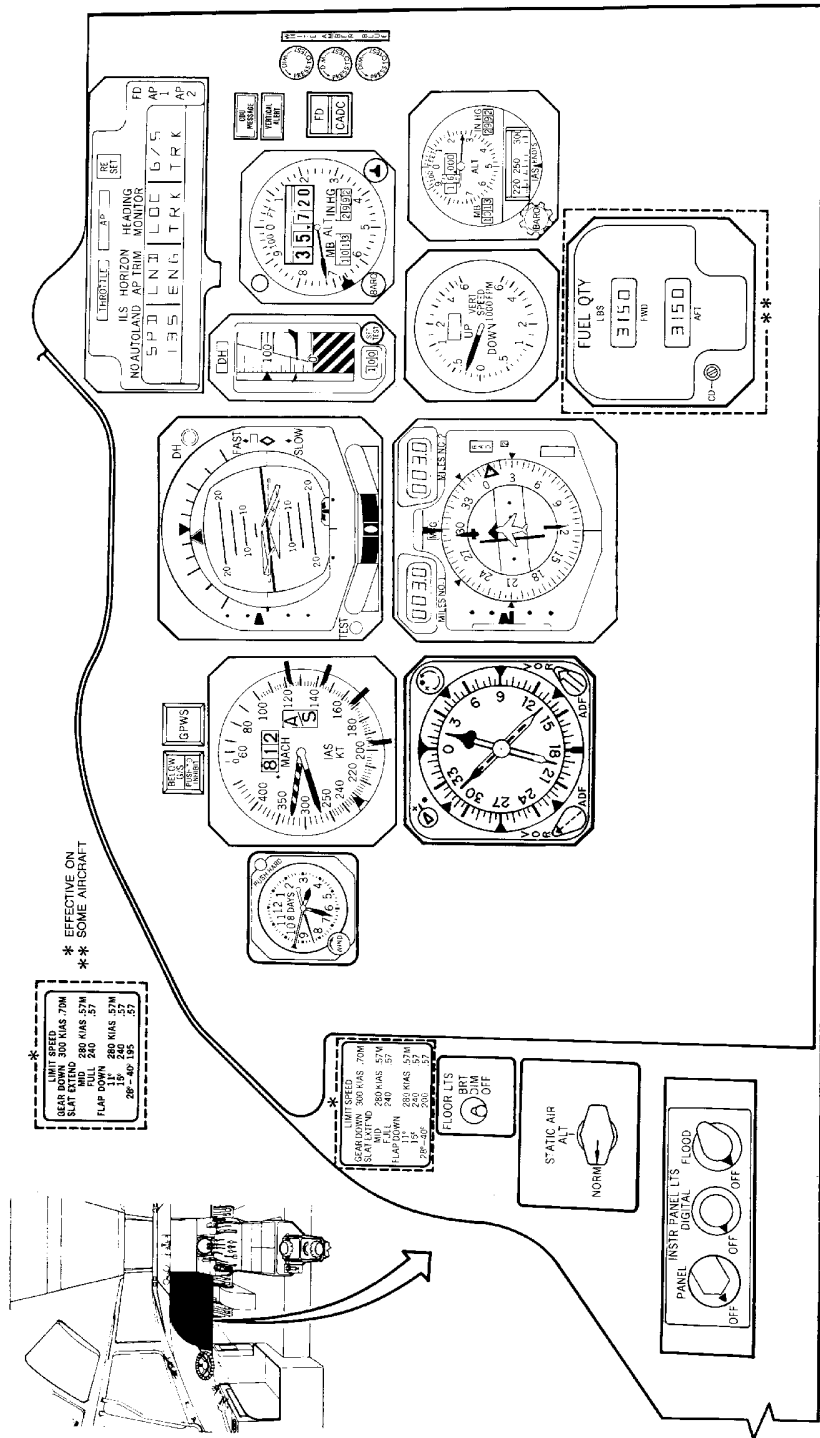
**Captain's Instrument Panel
Figure 1/31-11-01-990-801 (Sheet 2 of 5)**

EFFECTIVITY
WJE 881, 883

TP-80MM-WJE

31-11-01

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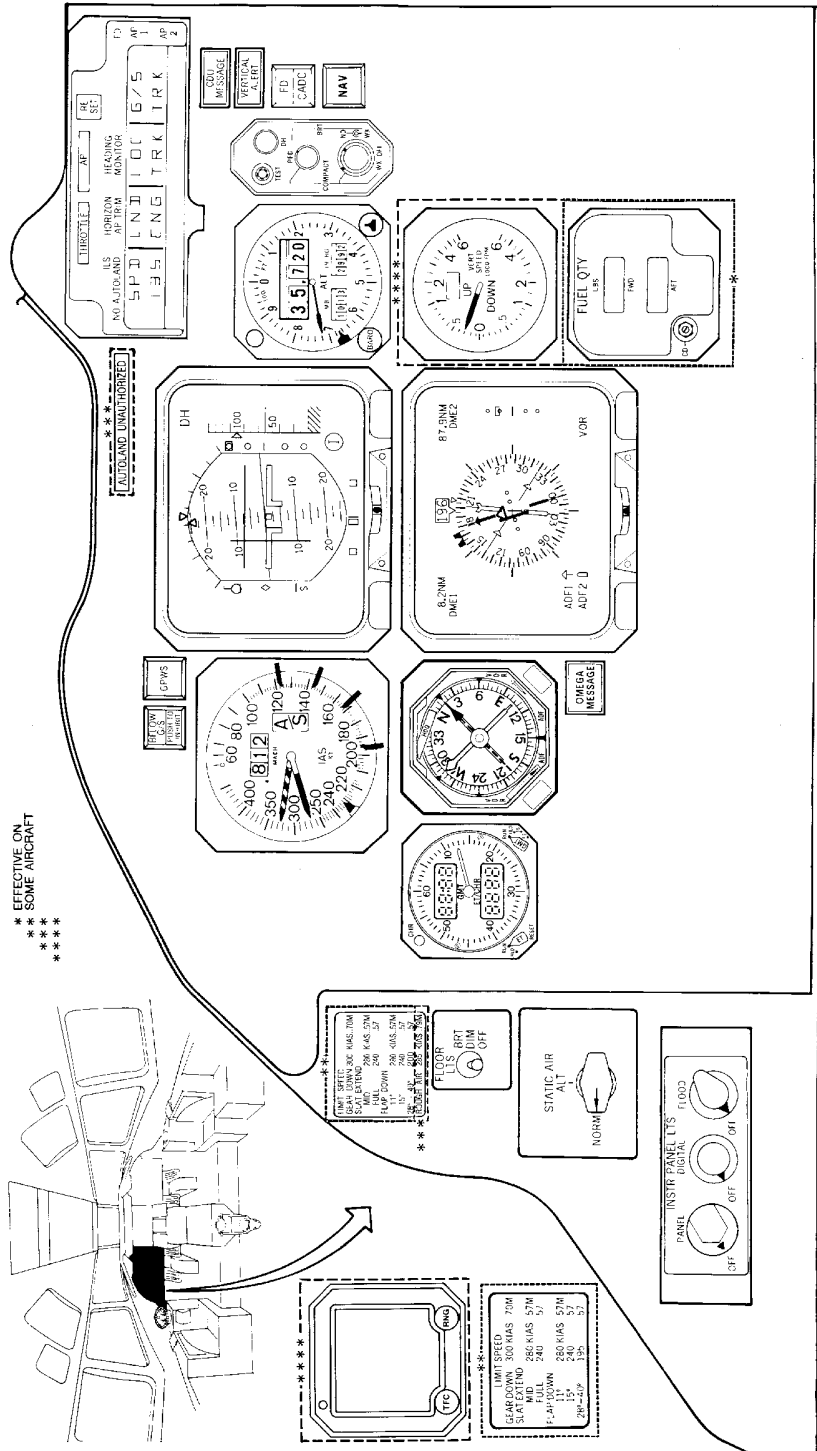
BB2-31-879A

**Captain's Instrument Panel
Figure 1/31-11-01-990-801 (Sheet 3 of 5)**

EFFECTIVITY
WJE 873, 874

31-11-01

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EBB2-31-783C

EFFECTIVE ON
SOME AIRCRAFT

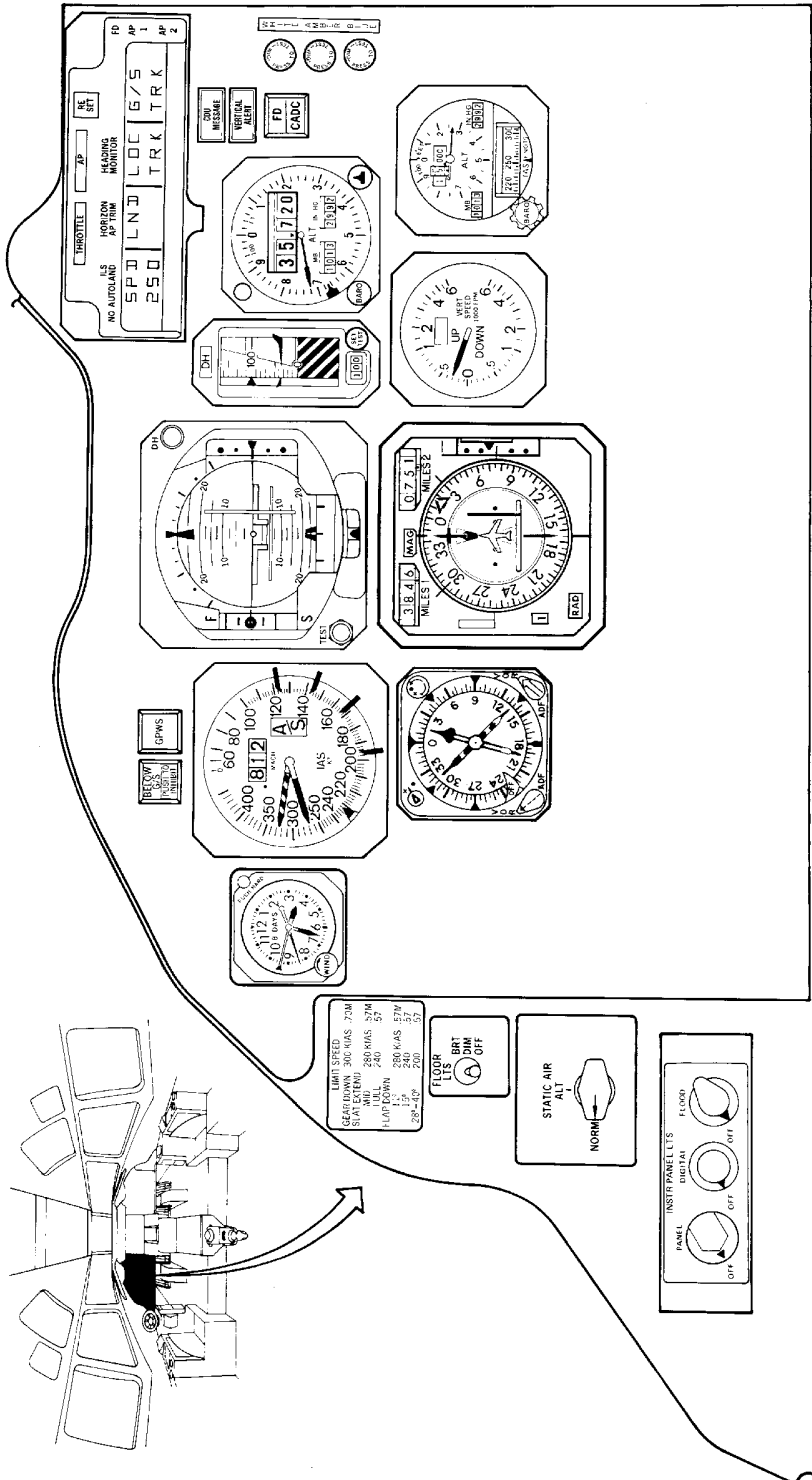
**Captain's Instrument Panel
Figure 1/31-11-01-990-801 (Sheet 4 of 5)**

EFFECTIVITY
WJE 406

31-11-01

TP-80MM-WJE

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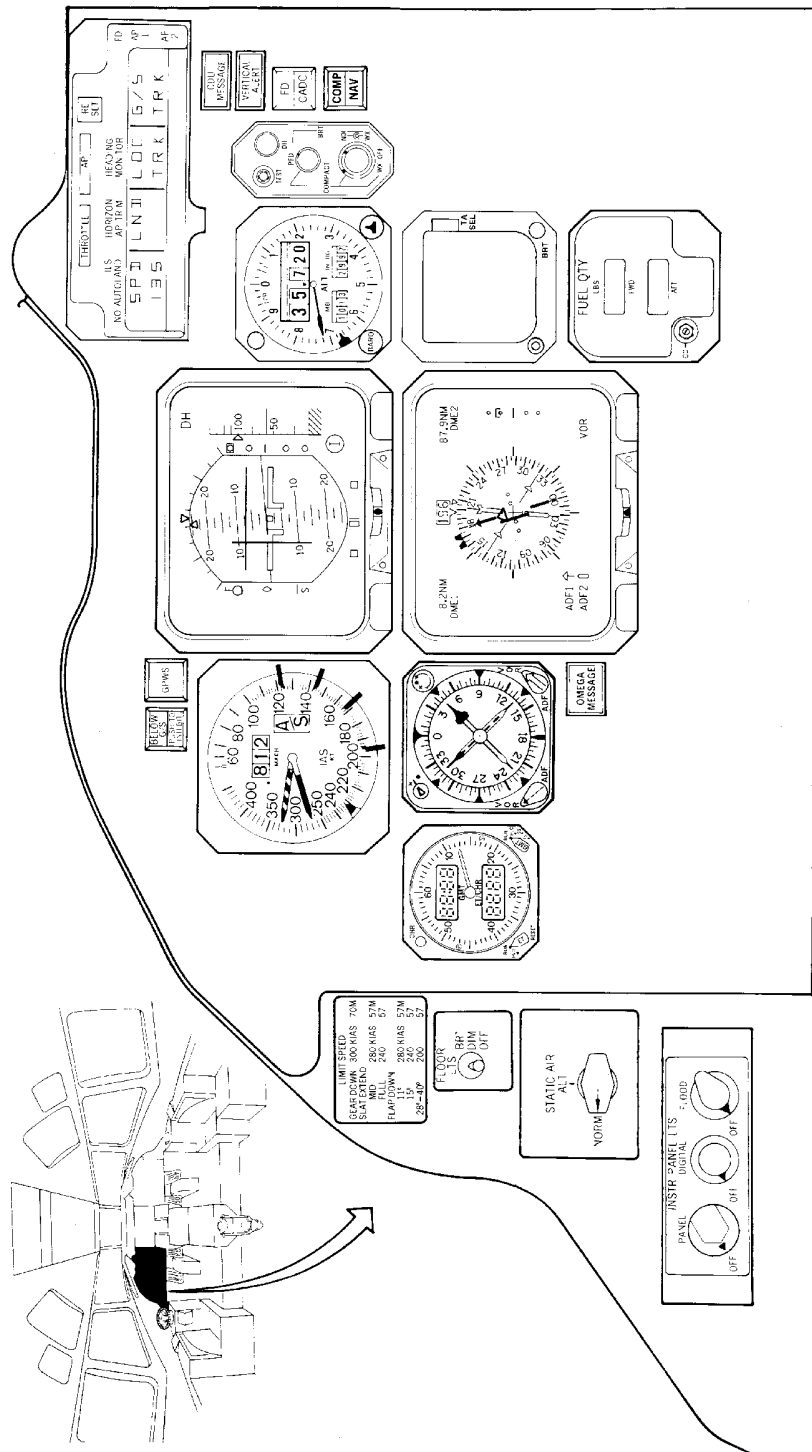
Captain's Instrument Panel
Figure 1/31-11-01-990-801 (Sheet 5 of 5)

EFFECTIVITY
WJE 893

TP-80MM-WJE

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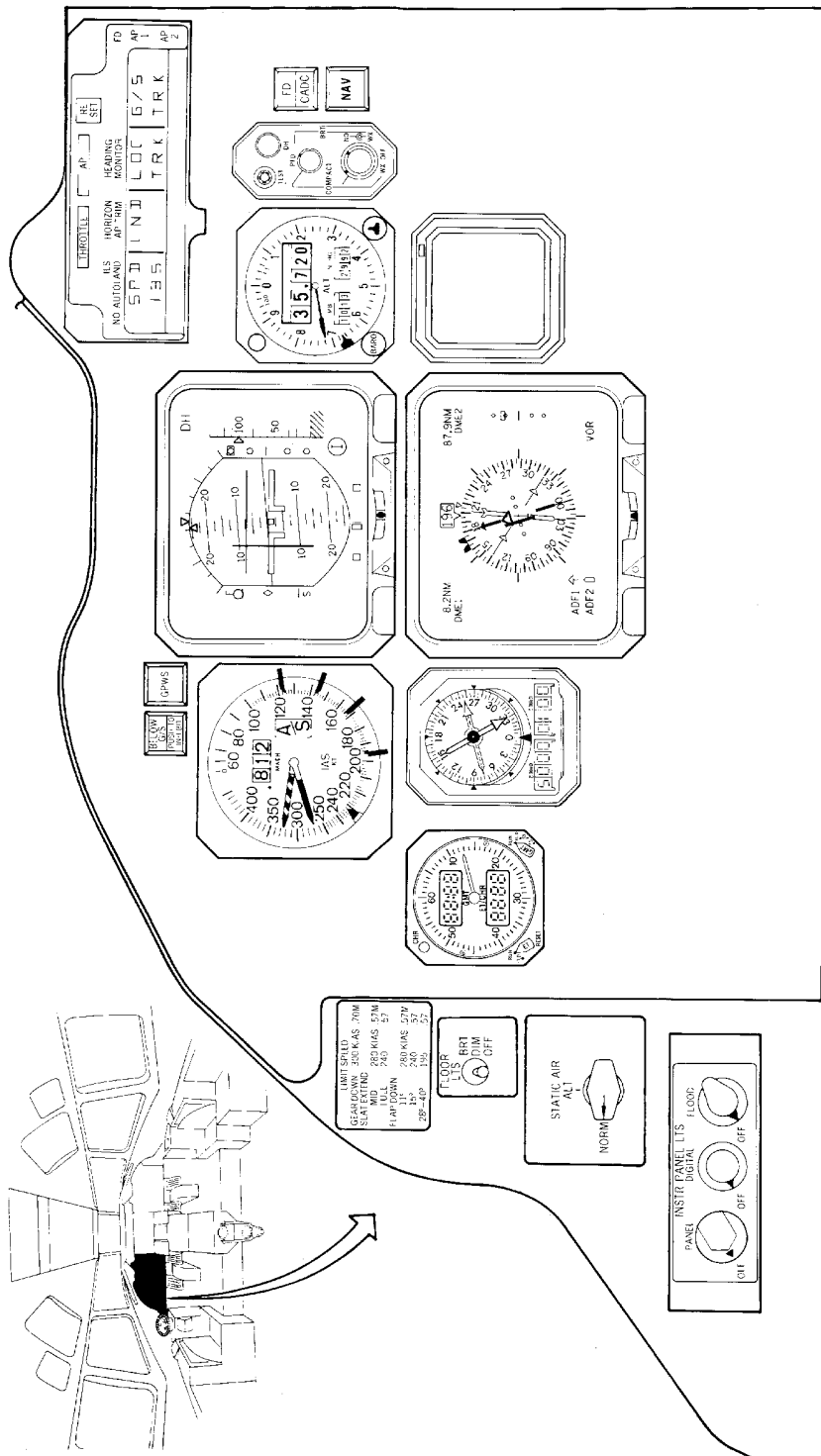
**Captain's Instrument Panel
Figure 2/31-11-01-990-802 (Sheet 1 of 3)**

EFFECTIVITY
WJE 410

31-11-01

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BB25-31-1289

Captain's Instrument Panel
Figure 2/31-11-01-990-802 (Sheet 2 of 3)

EFFECTIVITY
WJE 875, 876

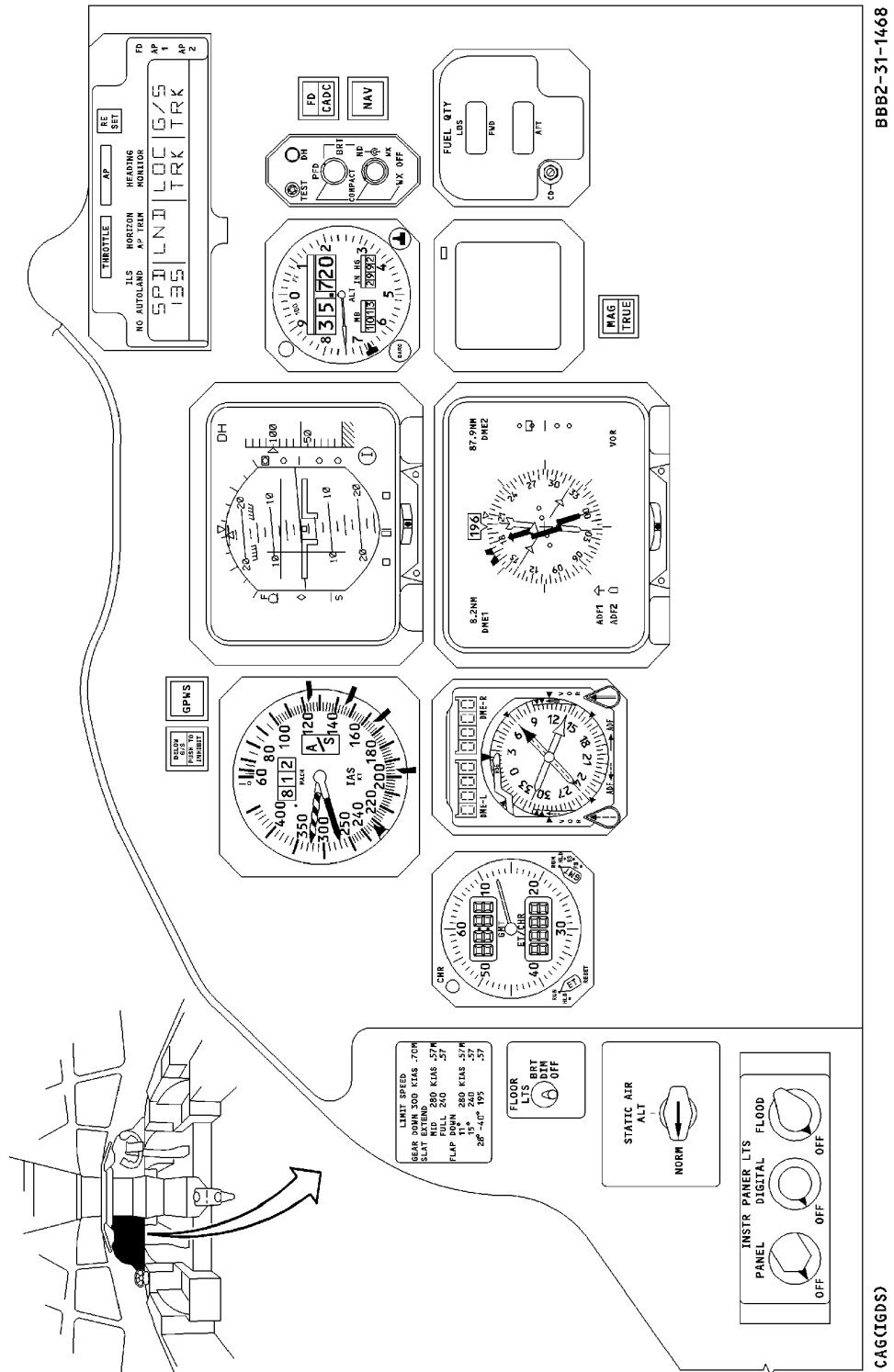
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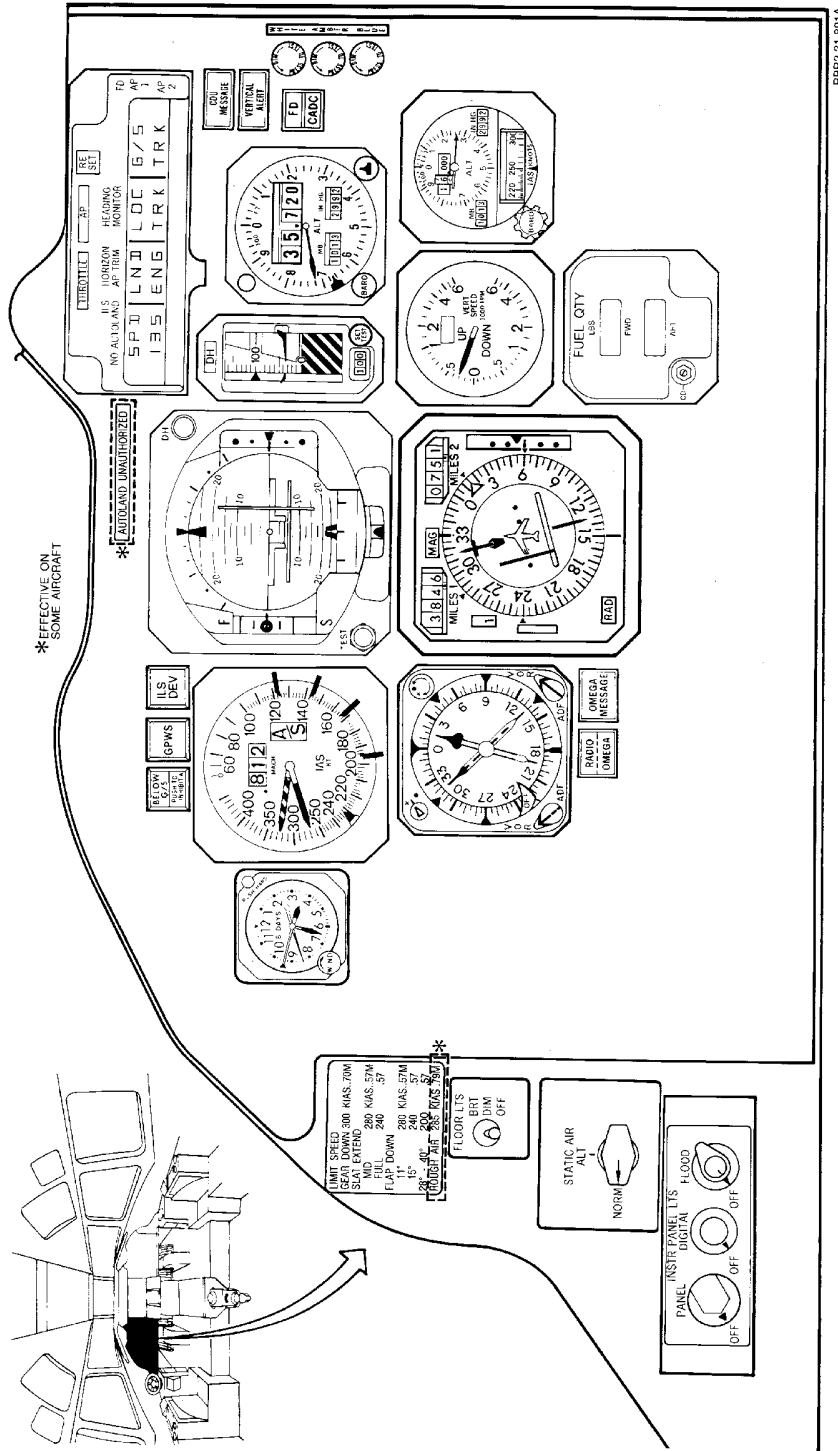
CAG(IGDS)

Captain's Instrument Panel
Figure 2/31-11-01-990-802 (Sheet 3 of 3)

EFFECTIVITY
WJE 877-879

31-11-01

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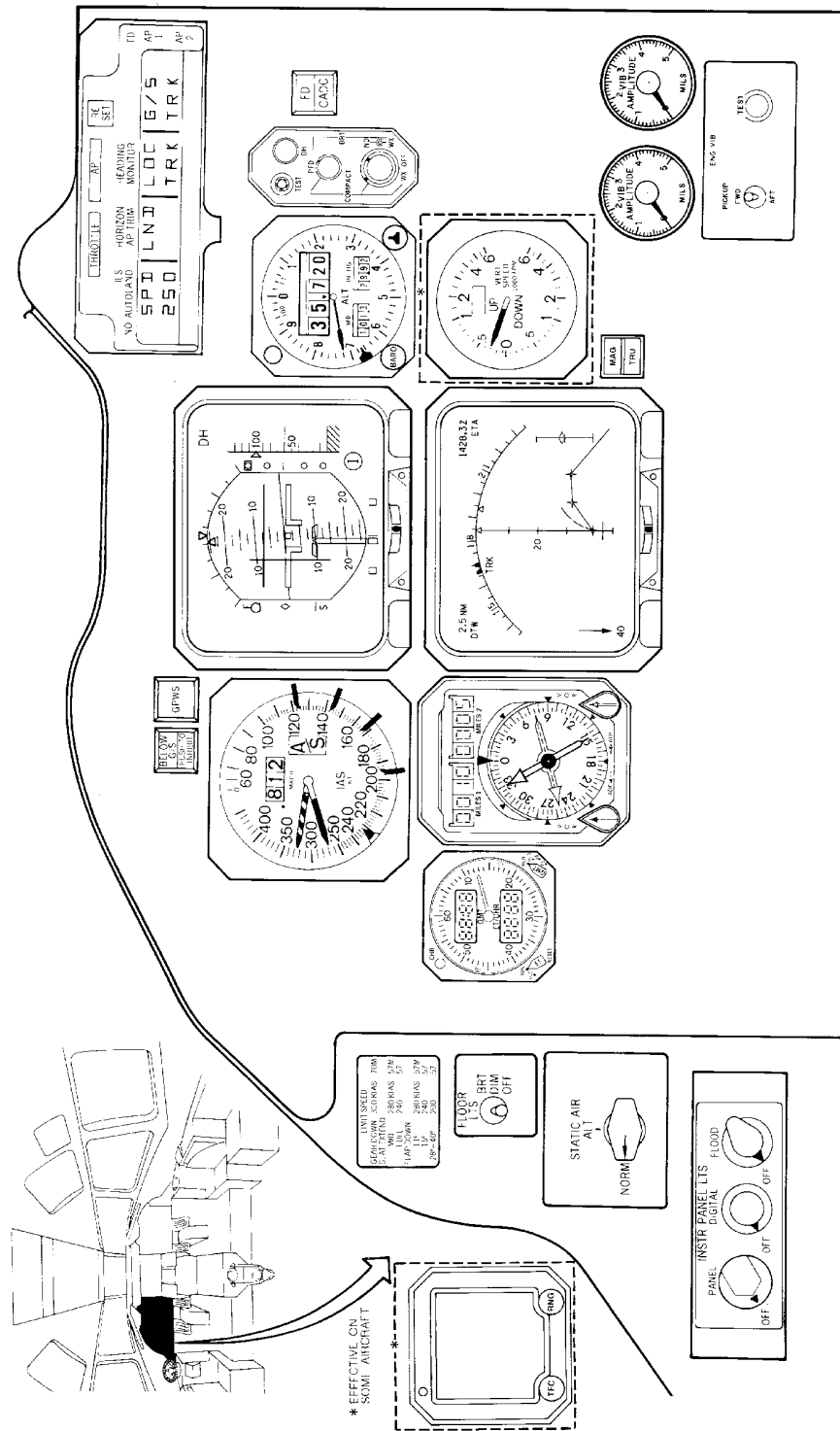
Captain's Instrument Panel
Figure 3/31-11-01-990-808 (Sheet 1 of 3)

EFFECTIVITY
WJE 892

31-11-01

TP-80MM-WJE

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Captain's Instrument Panel
Figure 3/31-11-01-990-808 (Sheet 2 of 3)

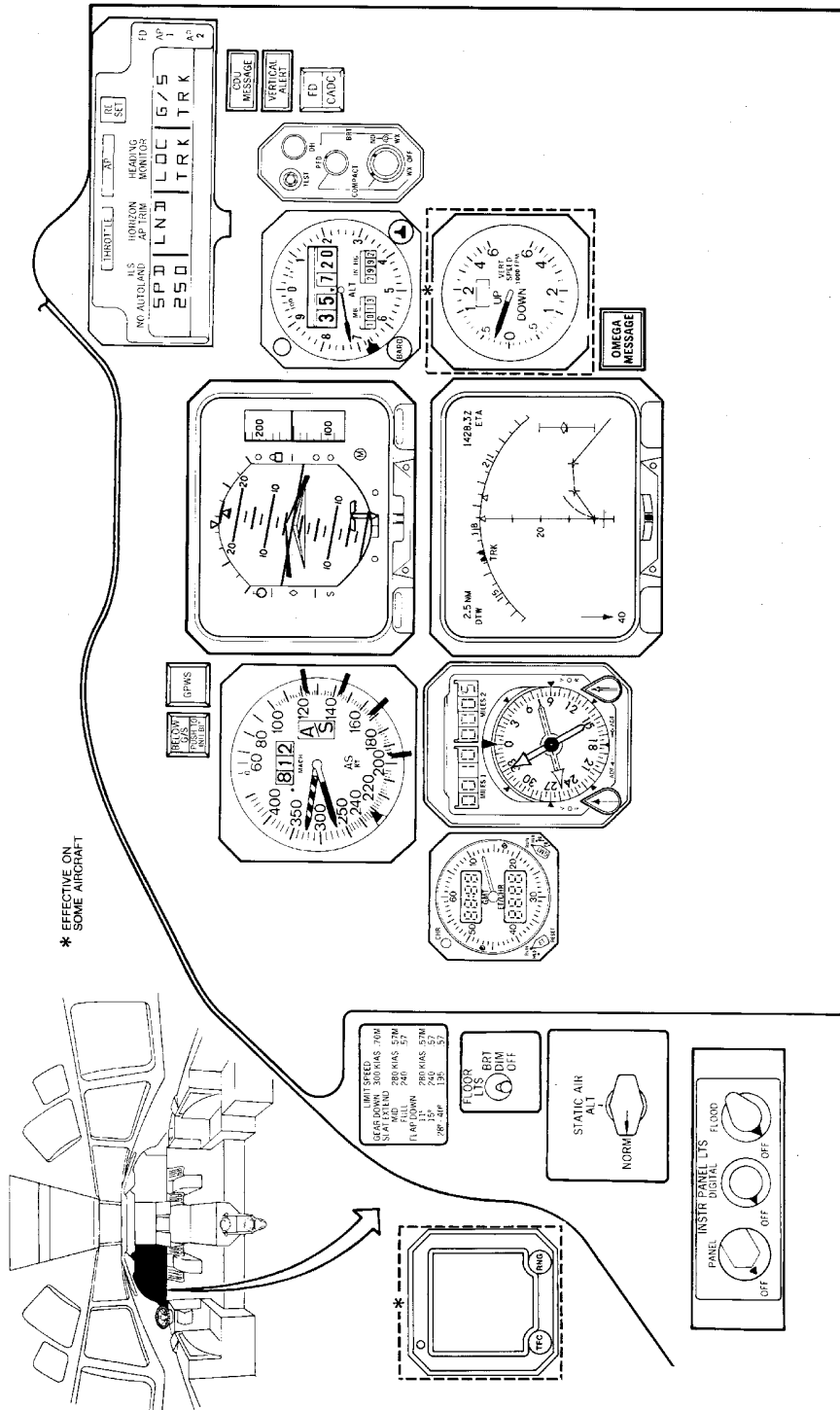
EFFECTIVITY
WJE 401-404, 412, 414

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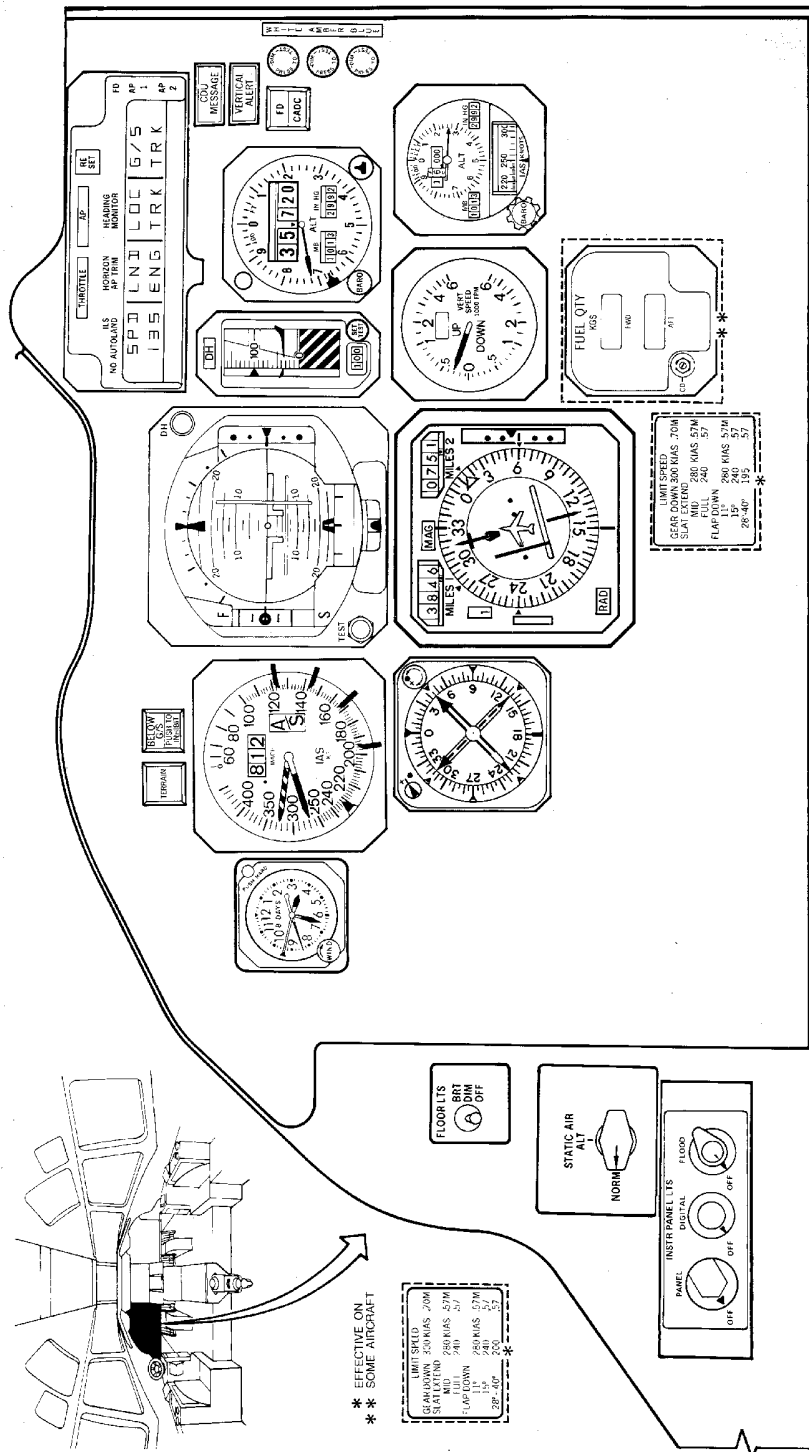
BBB2-31-1023A

Captain's Instrument Panel
Figure 3/31-11-01-990-808 (Sheet 3 of 3)

EFFECTIVITY
WJE 886, 887

31-11-01

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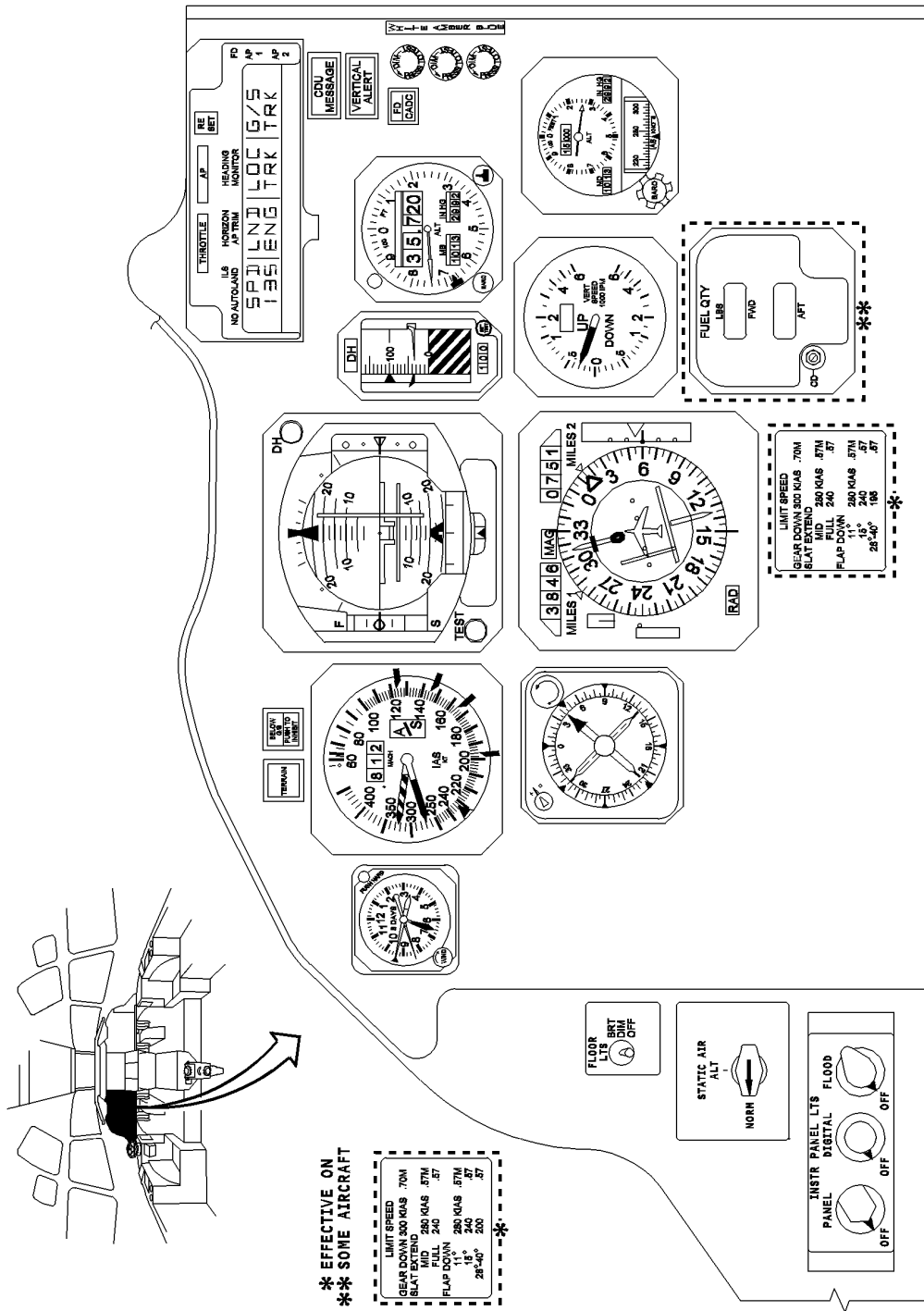


**Captain's Instrument Panel
Figure 4/31-11-01-990-867 (Sheet 1 of 4)**

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 868

31-11-01

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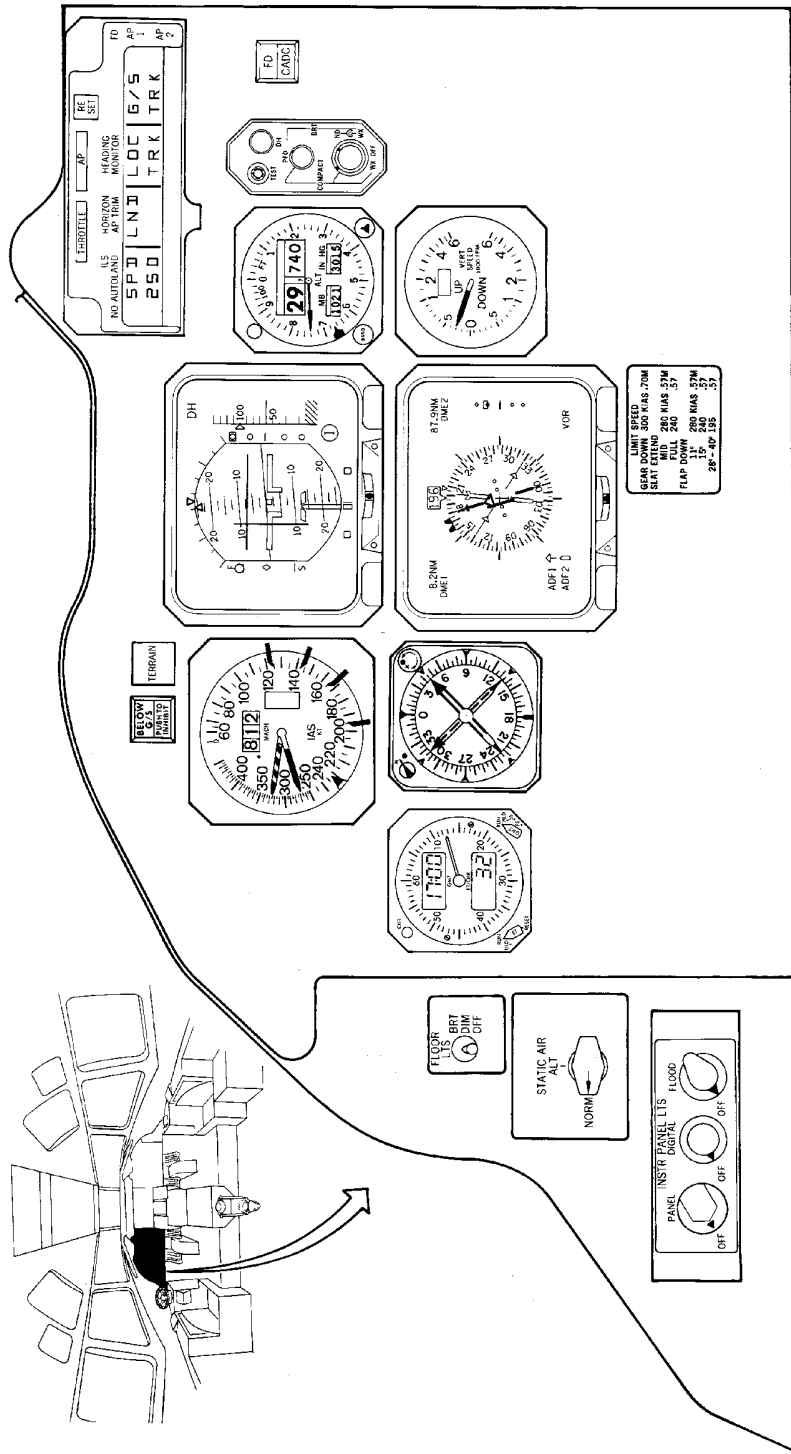
Captain's Instrument Panel
Figure 4/31-11-01-990-867 (Sheet 2 of 4)

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EFFECTIVITY
WJE 861, 862, 891

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BEB2-31-929A

**Captain's Instrument Panel
Figure 4/31-11-01-990-867 (Sheet 3 of 4)**

EFFECTIVITY
WJE 415, 418, 863, 864, 866

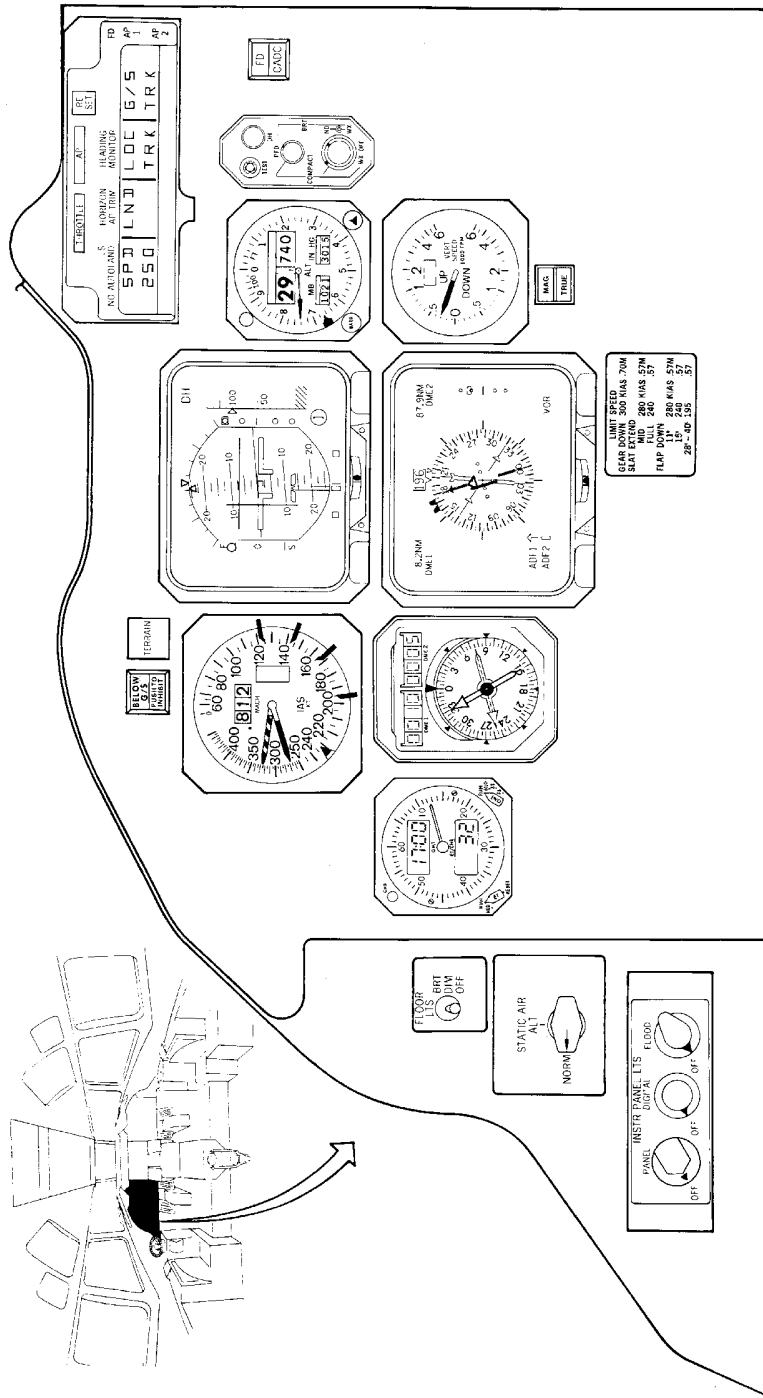
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**Captain's Instrument Panel
Figure 4/31-11-01-990-867 (Sheet 4 of 4)**

EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

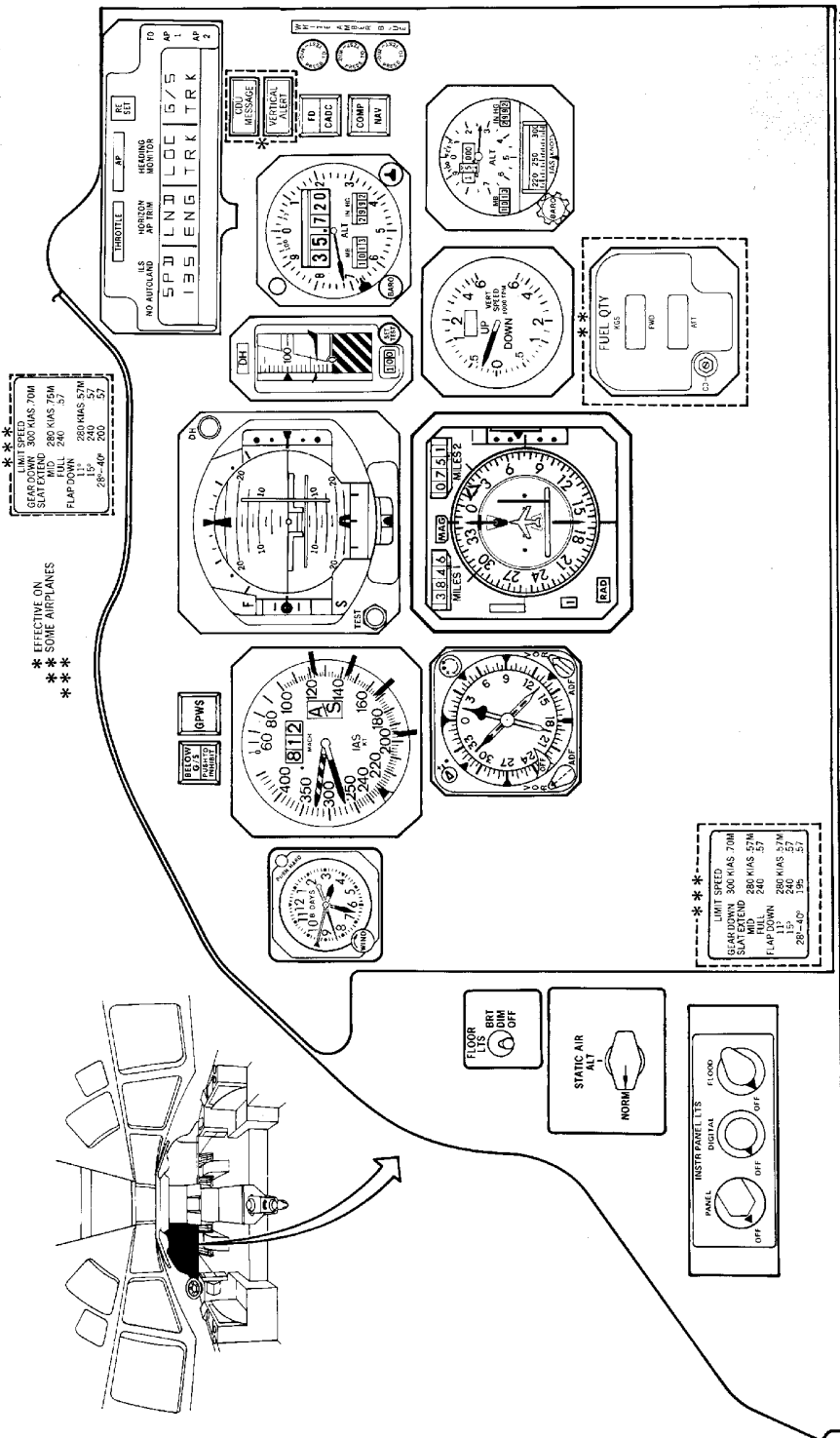
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Captain's Instrument Panel
Figure 5/31-11-01-990-868 (Sheet 1 of 2)

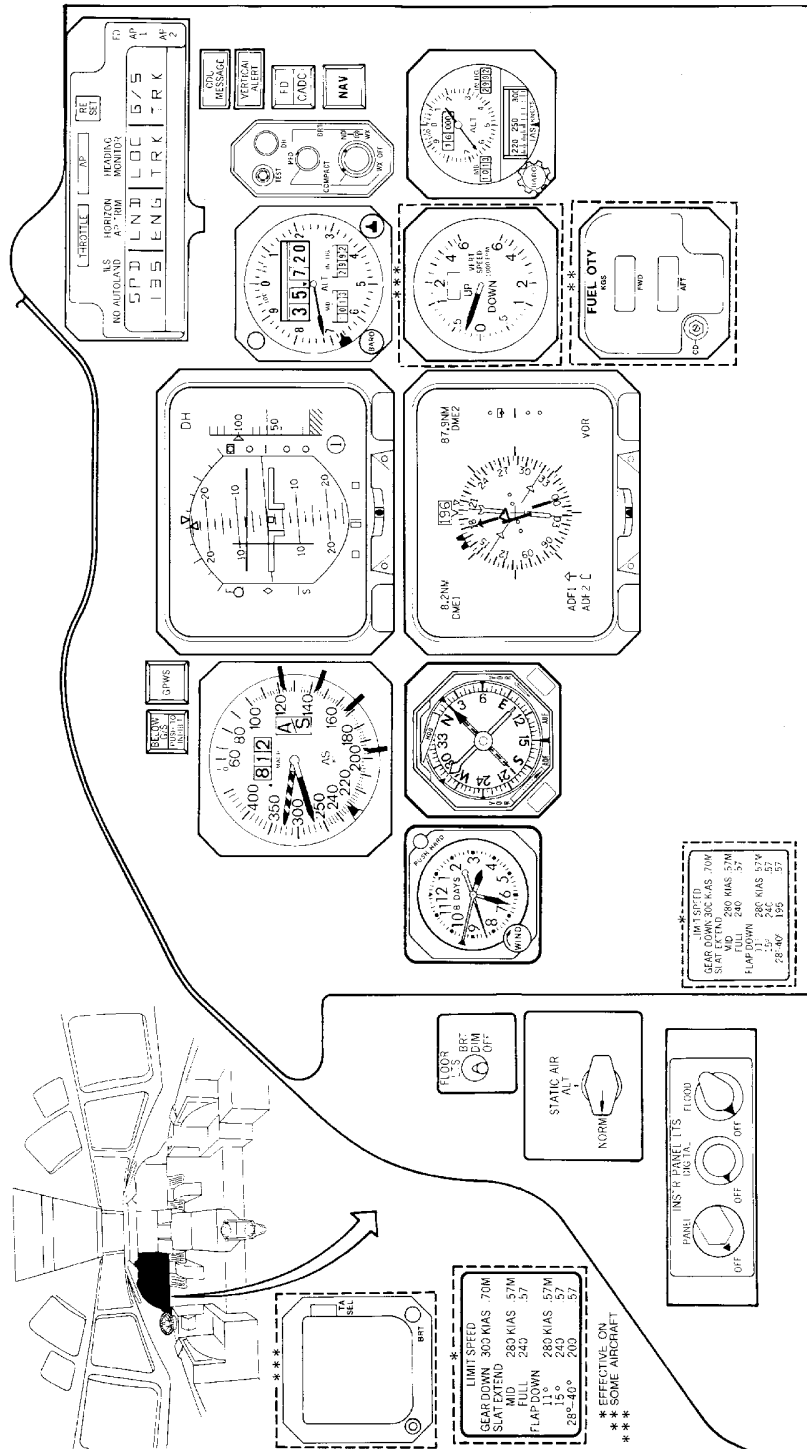
EFFECTIVITY
WJE 880

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**Captain's Instrument Panel
Figure 5/31-11-01-990-868 (Sheet 2 of 2)**

EFFECTIVITY
WJE 407, 408, 411

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FIRST OFFICER'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION

1. General

- A. The first officer's instrument panel and right gusset panel are units of the main instrument panel and provide a glare-free mounting surface for the instruments most frequently monitored by the first officer. The right gusset panel is adjacent to the first officer's instrument panel.

2. Description

WJE 875-879

- A. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, below glideslope annunciator, ground proximity warning switch annunciator, flight director and central air data computer annunciator, navigation annunciator, mach/airspeed indicator, primary flight display, altimeter, dimming panel, clock, radio distance magnetic indicator, navigation display, vertical speed/RA/TA indicator, hydraulic engine pump switches, hydraulic alternate gear pump switch, hydraulic auxiliary pump switch, brake temperature indicator, and a compass correction card and holder.

WJE 886, 887

- B. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, below glideslope annunciator, ground proximity warning switch annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, mach/airspeed indicator, primary flight display, altimeter, dimming panel, clock, radio magnetic indicator, navigation display, vertical speed indicator, omega message annunciator, hydraulic engine pump switches, hydraulic alternate gear pump switch, hydraulic auxiliary pump switch, brake temperature indicator, and a compass correction card and holder.

WJE 410

- C. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, comp/nav annunciator, mach/airspeed indicator, primary flight display, below glideslope annunciator, GPWS annunciator, altimeter, dimming panel, hydraulic pumps switches, radio magnetic indicator, omega message annunciator, navigation display, vertical speed/RA/TA indicator, clock indicator, brake temperature indicator, and a compass correction card and holder.

WJE 410, 875-879, 886, 887

- D. Mounted on the right gusset panel are: limit speed placard, floor light panel, static air panel, and instrument light panel.

WJE 873, 874, 893

- E. Instruments and annunciators mounted on the first officer's panel are: flight mode annunciator, control display unit annunciator, vertical alert annunciator, flight director and central air data computer annunciator, TAS/SAT indicator, effective on some aircraft, mach/airspeed indicator, attitude director indicator, radio altimeter indicator, altimeter indicator, below glideslope annunciator, ground proximity warning switch annunciator, marker beacon annunciators, hydraulic pressure indicators, hydraulic alternate gear pump switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, compass indicator, horizontal situation indicator, vertical speed indicator, clock, hydraulic quantity indicators, brake temperature indicator, and compass correction card holder.

EFFECTIVITY

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883,
884, 886, 887, 892, 893

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WJE 893

- F. Effective on aircraft 115 - instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, navigation annunciator, TAS/SAT indicator, mach/airspeed indicator, primary flight display, below glideslope annunciator, GPWS annunciator, altimeter, dimming panel, clock, radio magnetic indicator, omega message annunciator, navigation display, vertical speed indicator/ RA/TA, hydraulic pumps switches, brake temperature indicator, and a compass correction card and holder.

WJE 892

- G. Instruments and annunciators mounted on the first officer's panel are: flight mode annunciator, control display unit annunciator, vertical alert annunciator, flight director and central air data computer annunciator, mach/airspeed indicator, attitude director indicator, radio altimeter indicator, altimeter indicator, below glideslope annunciator, ground proximity warning switch annunciator, ILS deviation annunciator, marker beacon annunciators, hydraulic pressure indicators, hydraulic alternate gear pump switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, compass indicator, horizontal situation indicator, vertical speed indicator, clock, hydraulic quantity indicators, radio omega annunciator, omega message annunciator, brake temperature indicator, and compass correction card holder.

WJE 401-404, 412, 414

- H. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, below glideslope annunciator, ground proximity warning switch annunciator, flight director and central air data computer annunciator, TAS/SAT indicator, mach/airspeed indicator, primary flight display, altimeter, dimming panel, auxiliary fuel indicator, radio magnetic indicator, navigation display, vertical speed indicator, VSI/RA/TA on some aircraft, magnetic/true annunciator, a compass correction card and holder, hydraulic engine pump switches, hydraulic alternate gear pump switch, hydraulic auxiliary pump switch, brake temperature indicator, and clock.

WJE 401-404, 412, 414, 873, 874, 892, 893

- I. Mounted on the right gusset panel are: airspeed limit placard, floor light panel, static air panel, and instrument light panel.

WJE 405, 406, 409, 884

- J. On aircraft 134, 135, 137 - Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, compass/navigation annunciator, mach/airspeed indicator, attitude director indicator, radio altimeter, altimeter, below glide slope annunciator, GPWS annunciator, ILS deviation annunciator on some aircraft, marker beacon annunciators, hydraulic pressure indicators, hydraulic power transfer switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, compass, horizontal situation indicator, vertical speed indicator, clock, hydraulic quantity indicators, radio/omega annunciator, omega message annunciator brake temperature indicator, and a compass correction card and holder.

EFFECTIVITY

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

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WJE 405, 406, 409, 881, 883, 884

- K. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, compass/navigation annunciator effective on some aircraft, mach/airspeed indicator, attitude director indicator, radio altimeter, altimeter, below glide slope annunciator, GPWS annunciator, ILS deviation annunciator on some aircraft, marker beacon annunciators, hydraulic pressure indicators, hydraulic power transfer switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, compass, horizontal situation indicator, vertical speed indicator, clock, hydraulic quantity indicators, radio/omega annunciator, omega message annunciator, brake temperature indicator, limit speed placard and a compass correction card and holder.

WJE 405, 406, 409, 884

- L. On aircraft 110 - Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, control display unit message annunciator, vertical alert annunciator, flight director and central air data computer annunciator, navigation annunciator, mach/airspeed indicator, primary flight display, below glideslope annunciator, GPWS annunciator, altimeter, dimming panel, hydraulic pumps switches, radio magnetic indicator, omega message annunciator, navigation display, vertical speed indicator or VSI/RA/TA, clock indicator, brake temperature indicator, an engine vibration monitor on aircraft 144, and a compass correction card and holder.
- M. On aircraft 110, 134, 135, 137 - Mounted on the right gusset panel are: limit speed placard, floor light panel, static air panel, and instrument light panel.

WJE 405, 406, 409, 881, 883, 884

- N. Mounted on the right gusset panel are: floor light panel, static air panel, and instrument light panel.

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

3. Operation

- A. Instructions for operation of instruments on the first officer's instrument panel are included in the specific instrument system chapter of the maintenance manual.

EFFECTIVITY

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

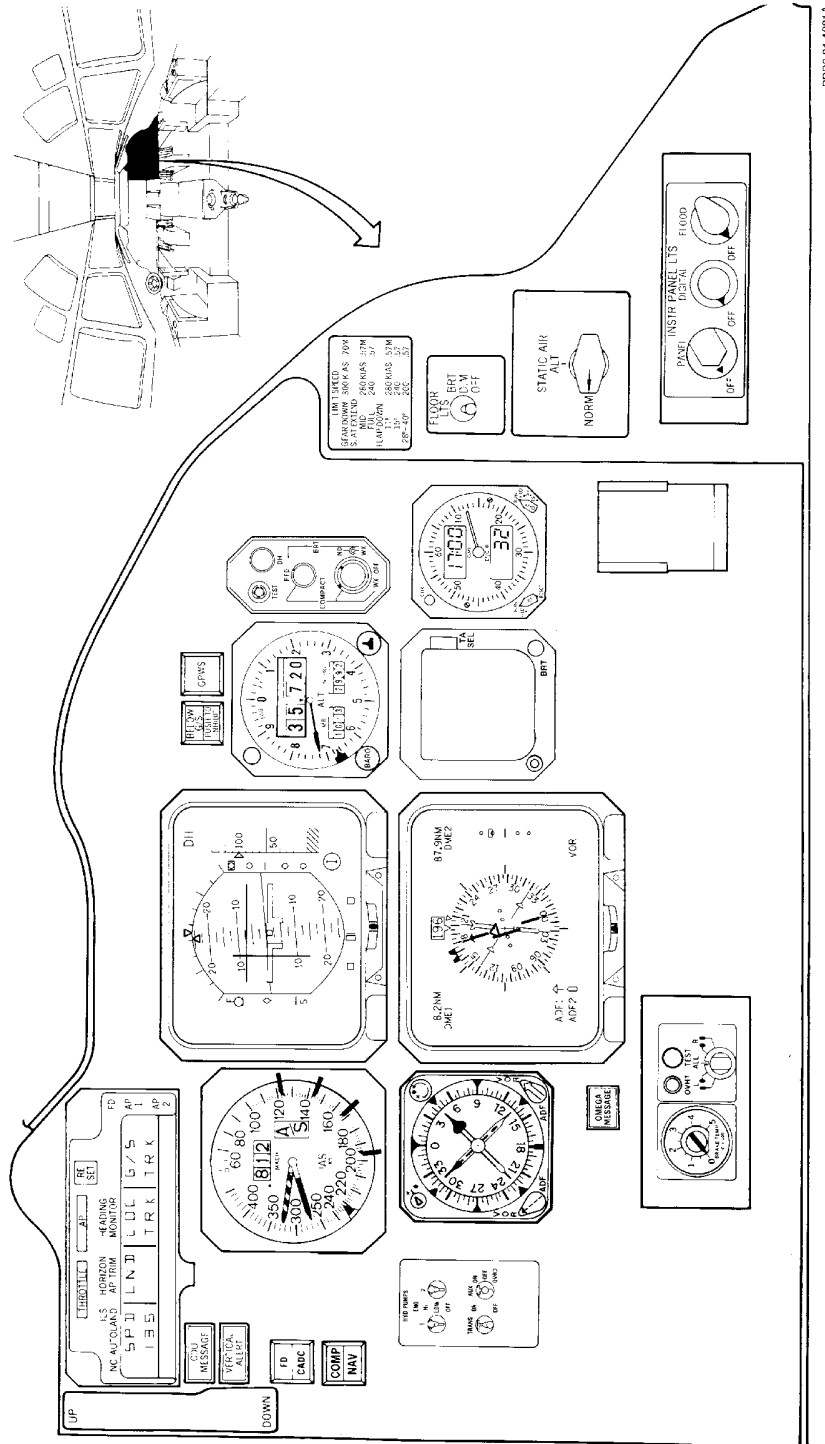
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**First Officer's Instrument Panel
Figure 1/31-11-02-990-802 (Sheet 1 of 3)**

EFFECTIVITY
WJE 410

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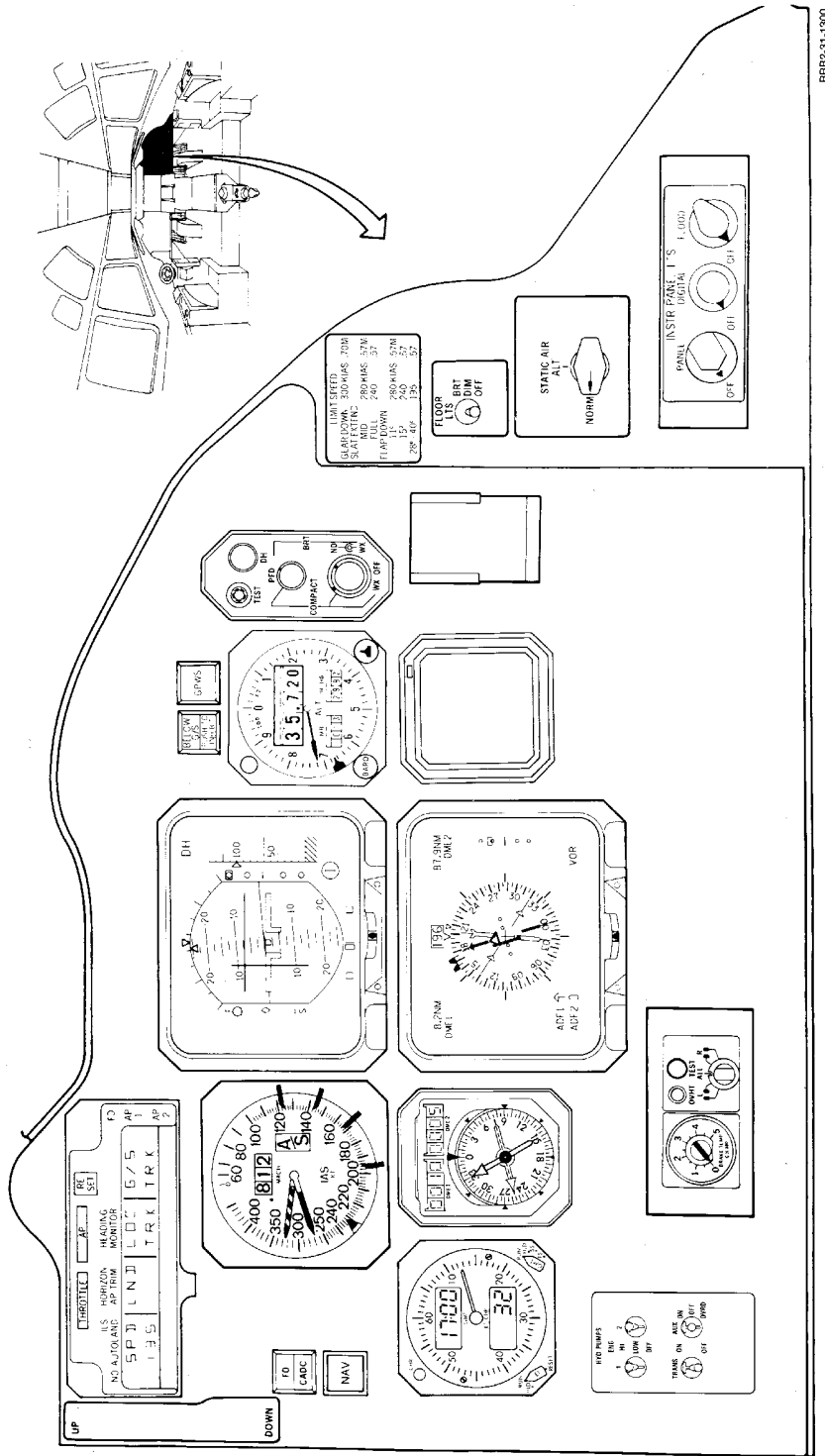
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**First Officer's Instrument Panel
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EFFECTIVITY
WJE 875, 876, 878, 879

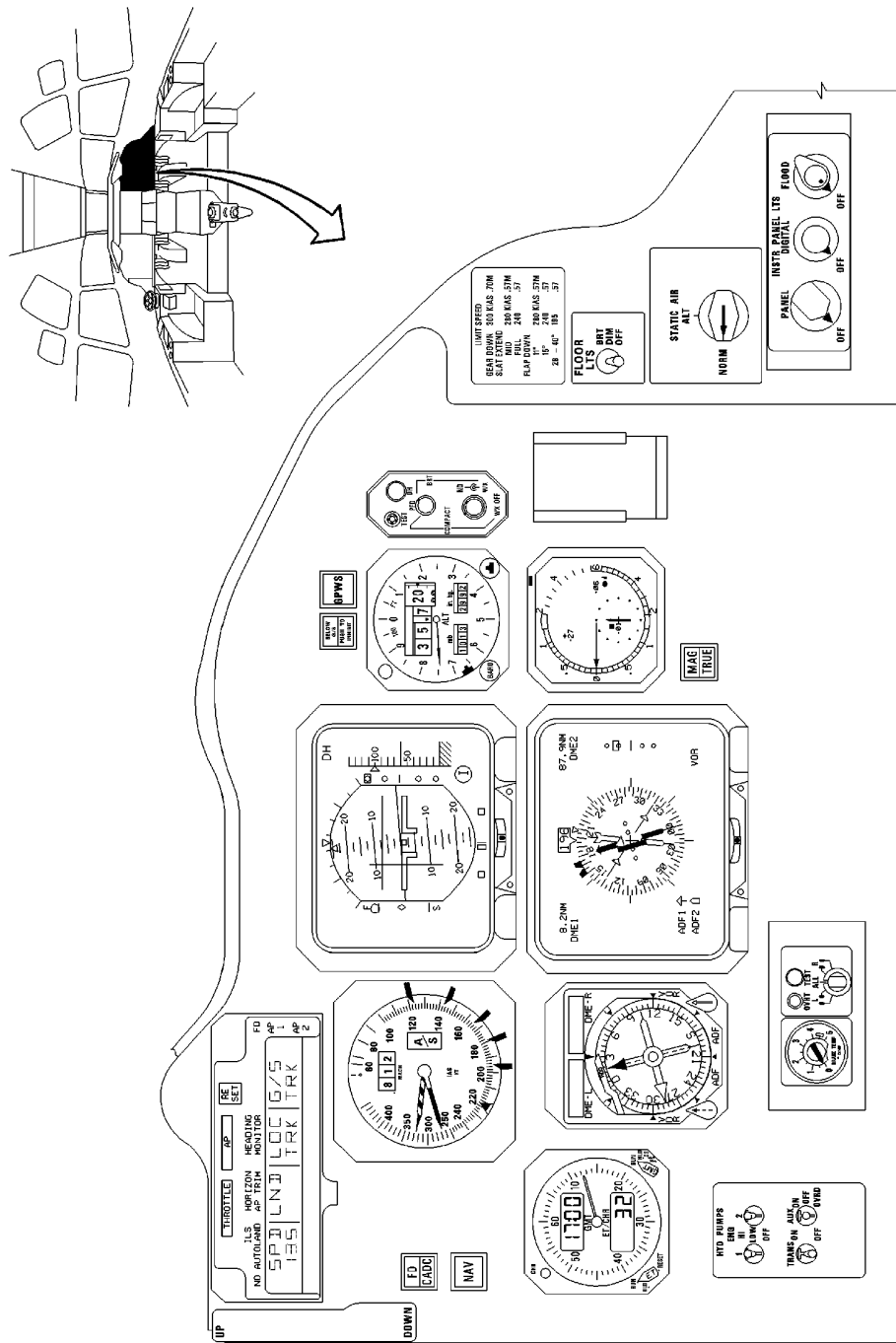
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CAG(I/GDS)

First Officer's Instrument Panel
Figure 1/31-11-02-990-802 (Sheet 3 of 3)

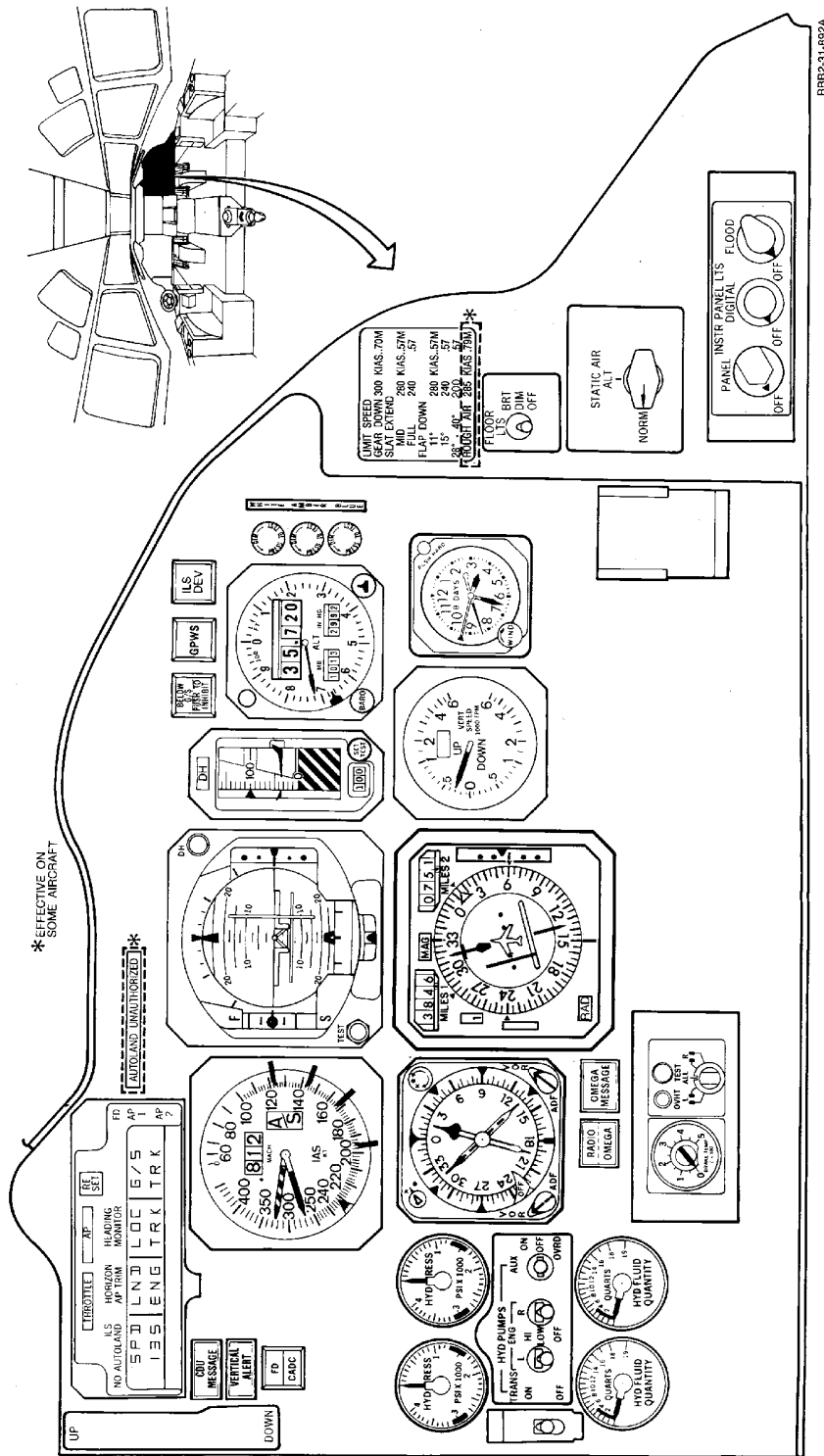
EFFECTIVITY
WJE 877

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**First Officer's Instrument Panel
Figure 2/31-11-02-990-807 (Sheet 1 of 3)**

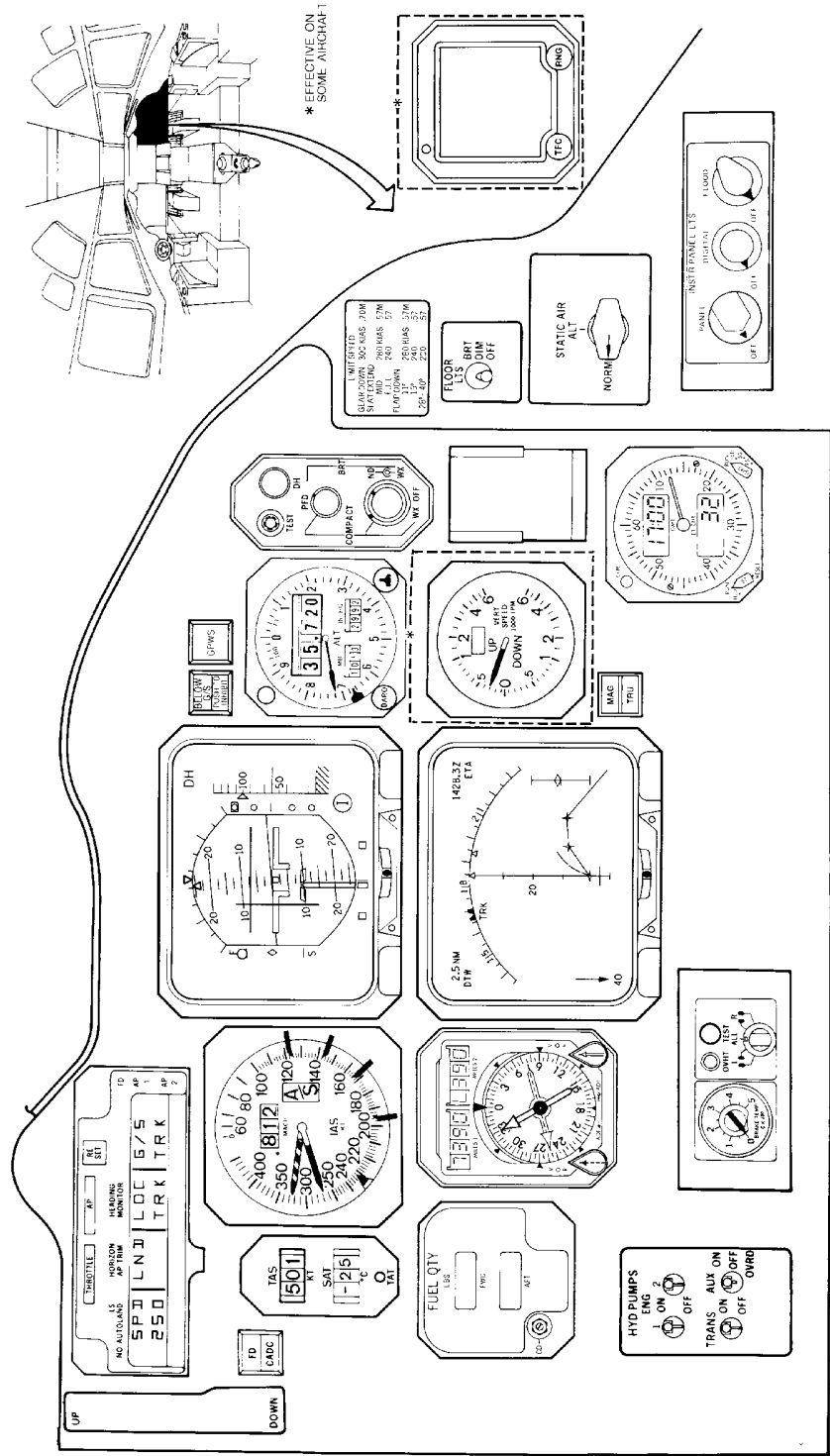
EFFECTIVITY
WJE 892

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TP-80MM-WJE

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First Officer's Instrument Panel
Figure 2/31-11-02-990-807 (Sheet 2 of 3)

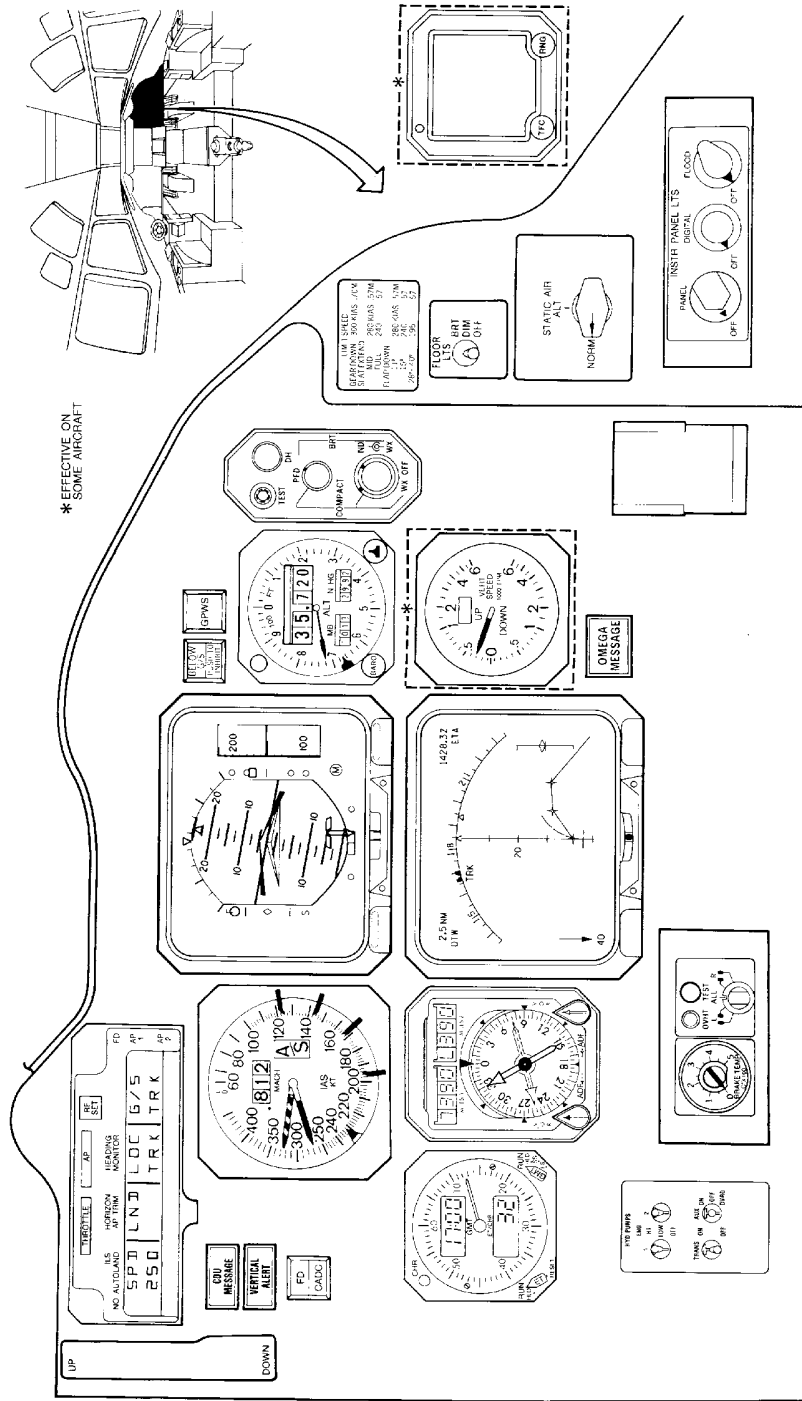
EFFECTIVITY
WJE 401-404, 412, 414

TP-80MM-WJE

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**First Officer's Instrument Panel
Figure 2/31-11-02-990-807 (Sheet 3 of 3)**

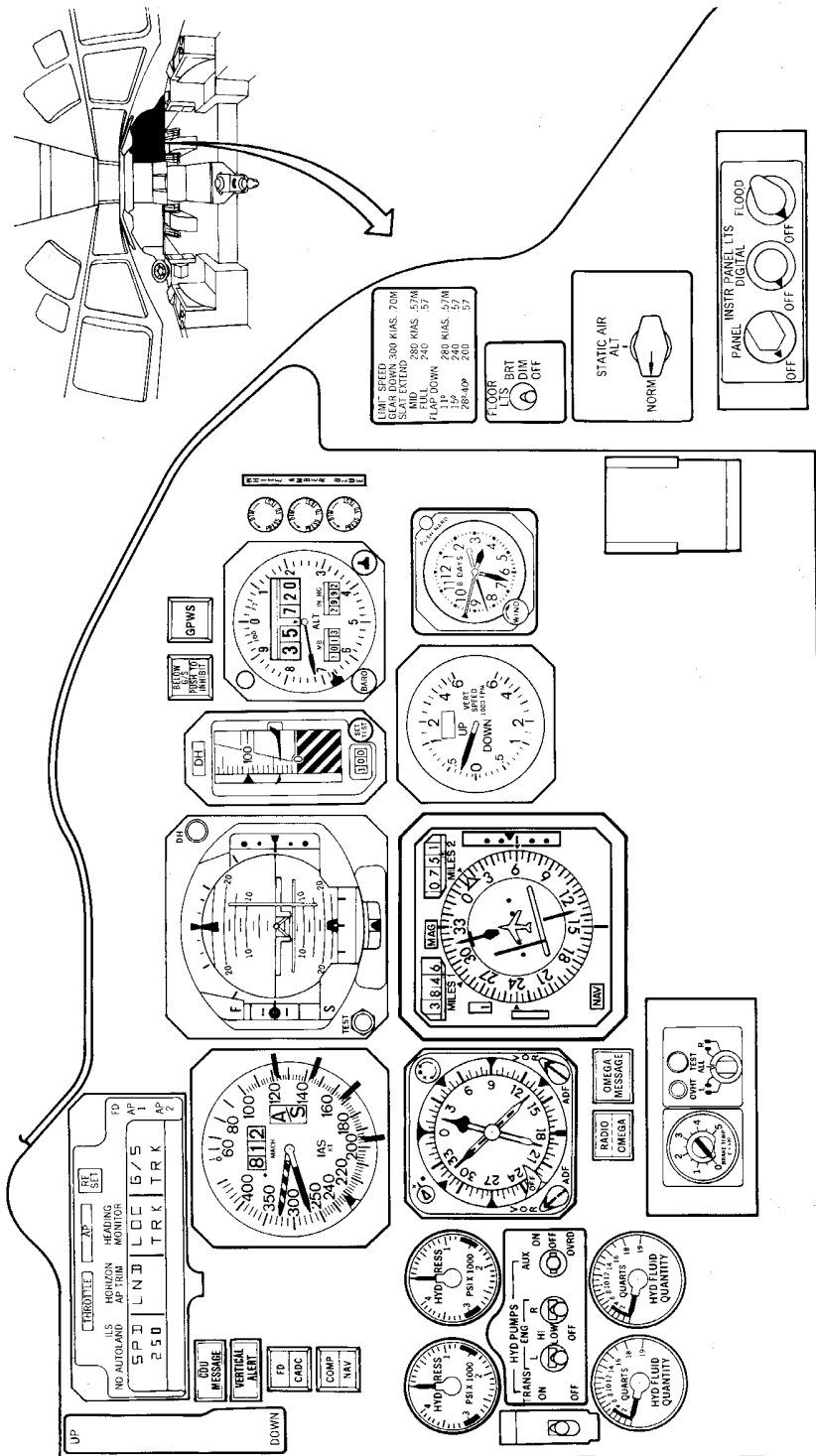
EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

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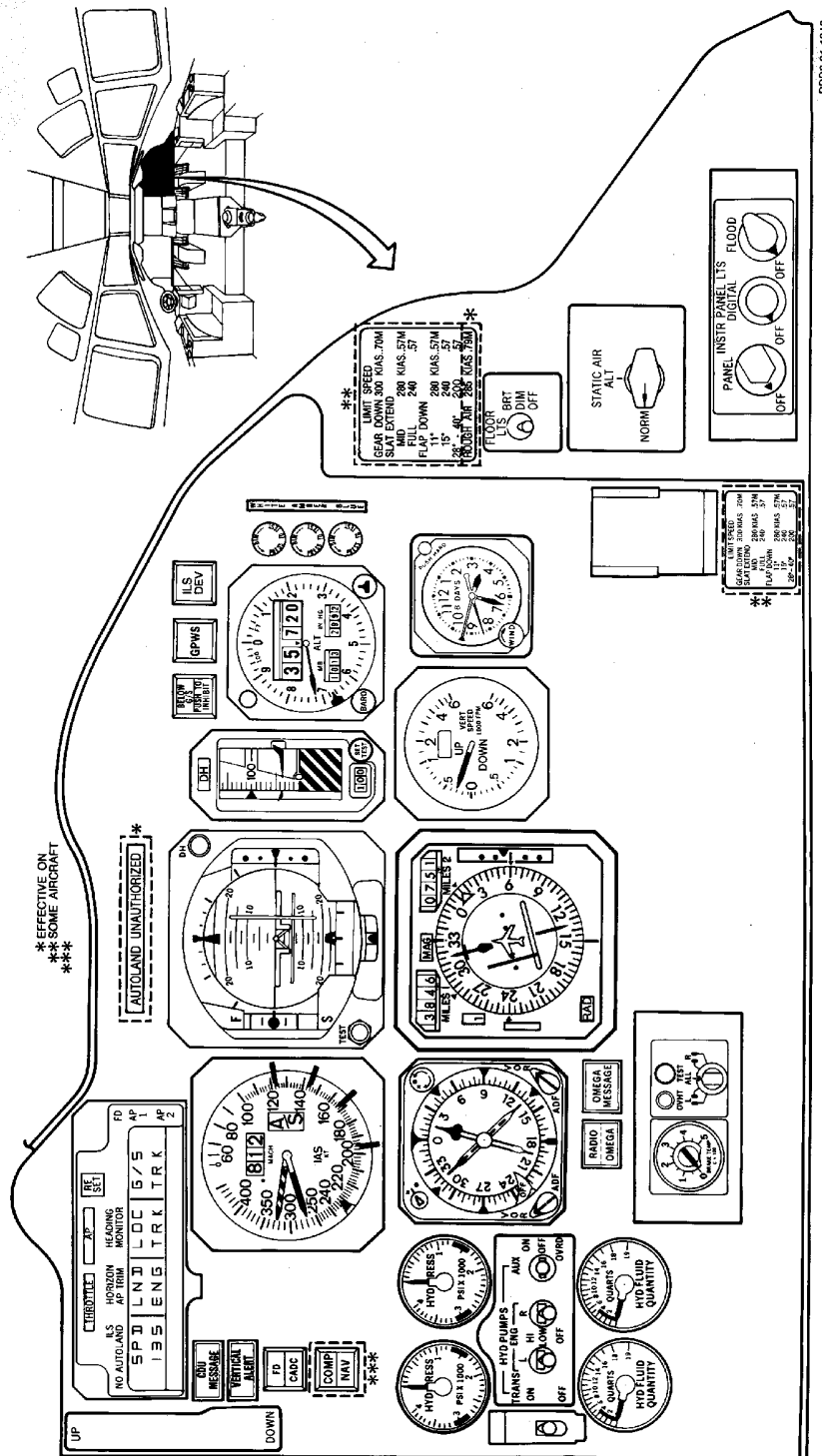
**First Officer's Instrument Panel
Figure 3/31-11-02-990-808 (Sheet 1 of 5)**

EFFECTIVITY
WJE 405, 409, 884

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BBB2-31-1042

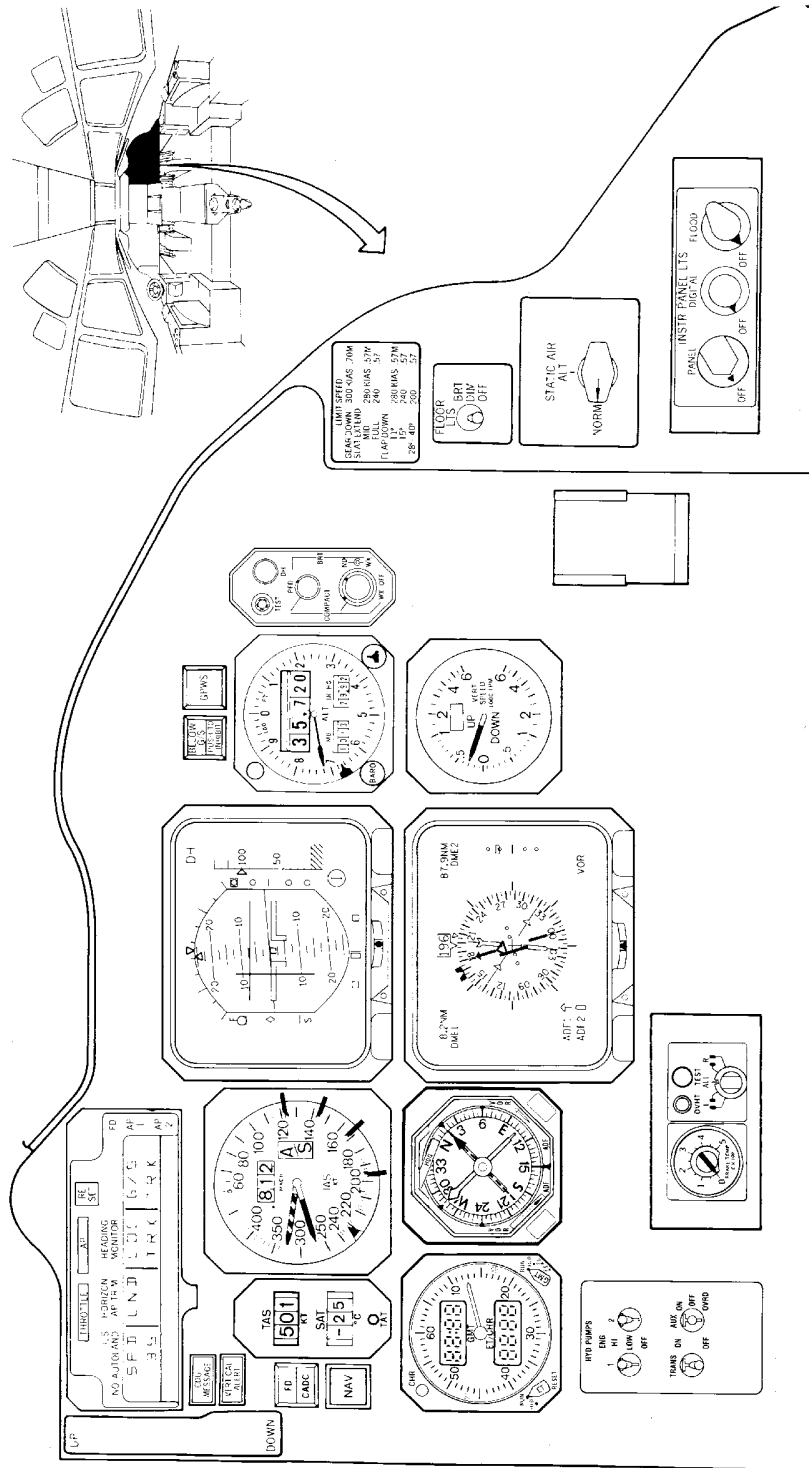
**First Officer's Instrument Panel
Figure 3/31-11-02-990-808 (Sheet 2 of 5)**

EFFECTIVITY
WJE 881, 883

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BB92-31-1275

**First Officer's Instrument Panel
Figure 3/31-11-02-990-808 (Sheet 3 of 5)**

EFFECTIVITY
WJE 406

TP-80MM-WJE

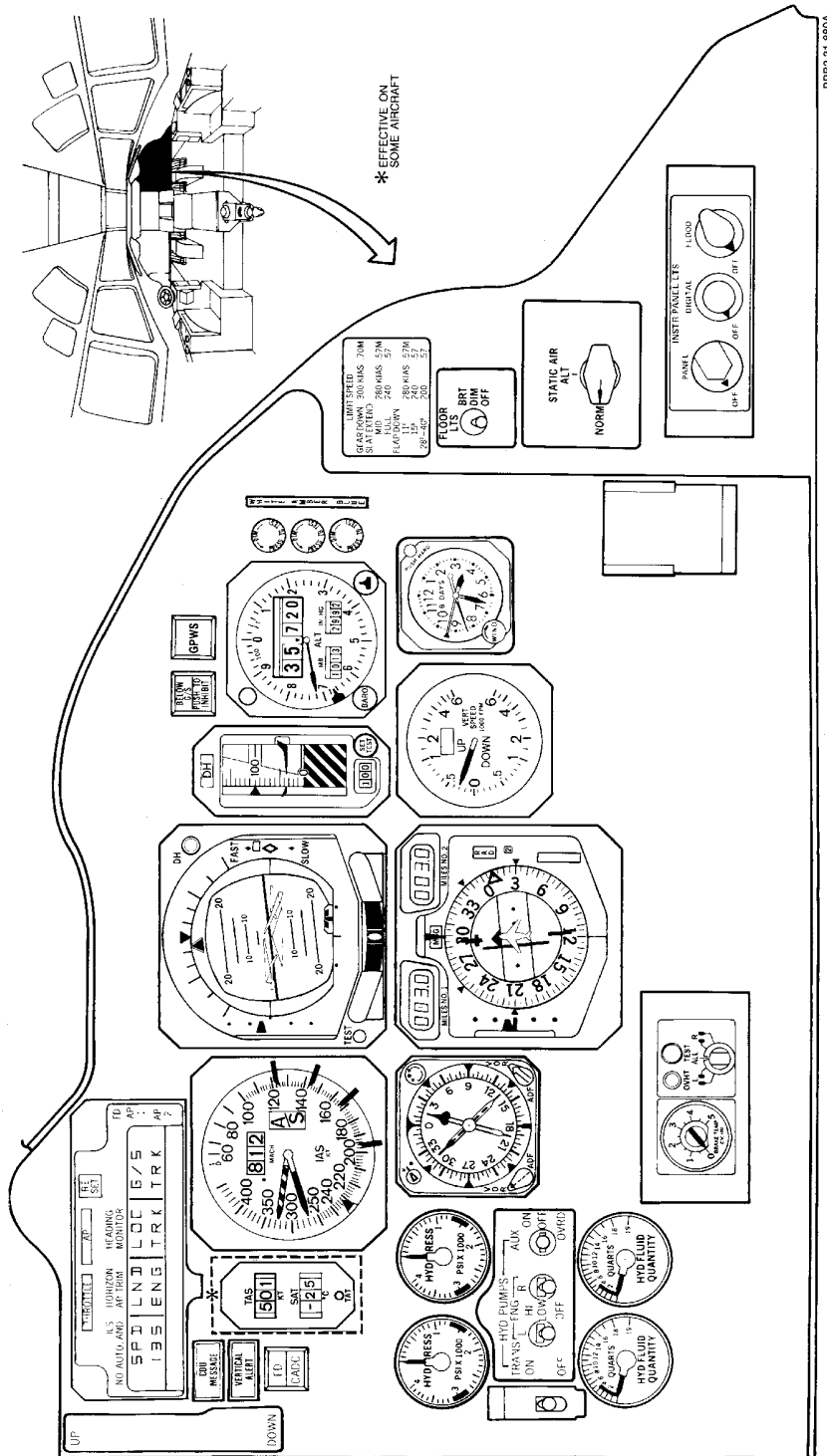
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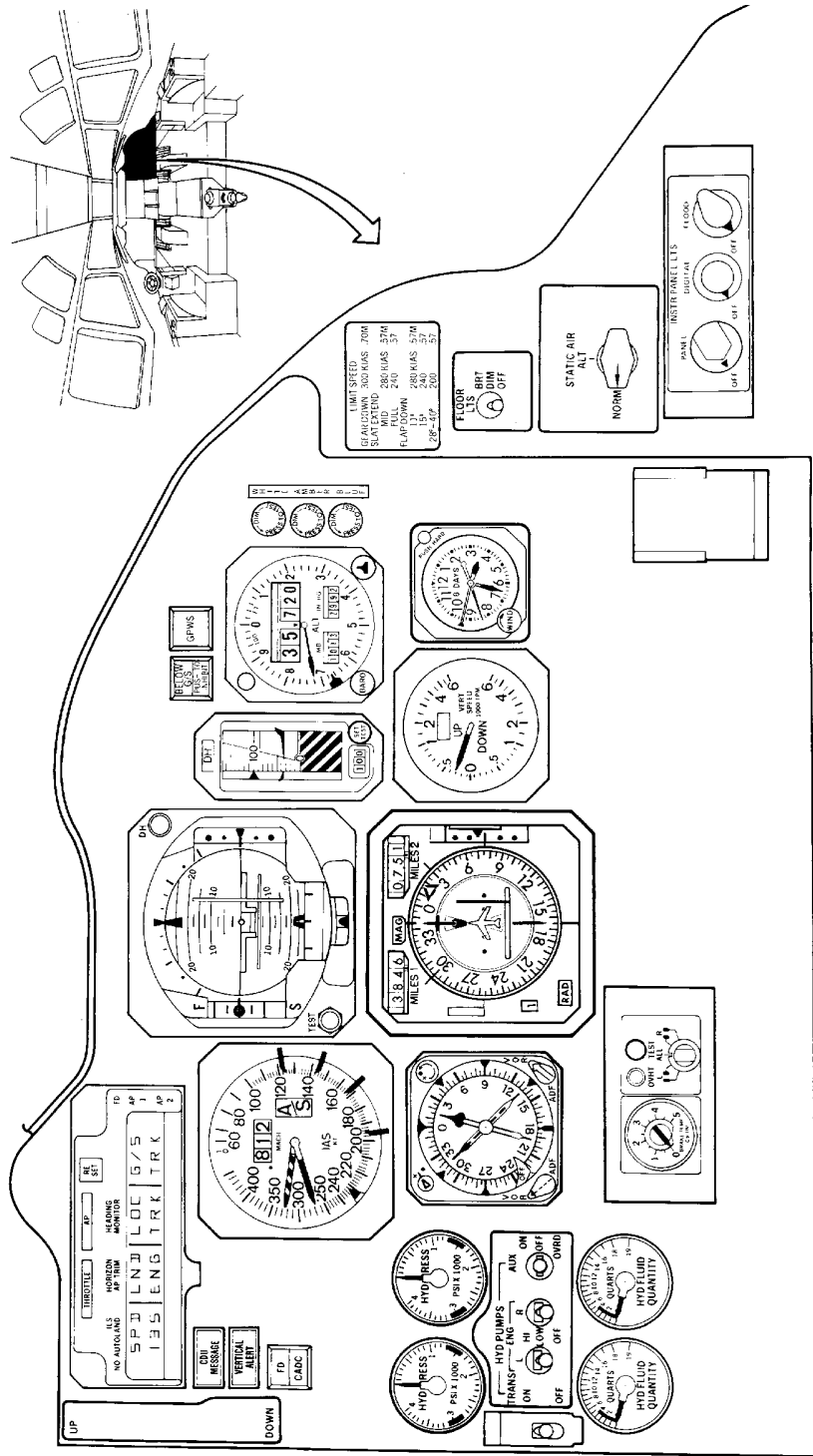
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First Officer's Instrument Panel
Figure 3/31-11-02-990-808 (Sheet 4 of 5)

EFFECTIVITY
WJE 873, 874

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BBB2-31-699A

**First Officer's Instrument Panel
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EFFECTIVITY
WJE 893

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FIRST OFFICER'S INSTRUMENT PANEL - DESCRIPTION AND OPERATION

1. General

- A. The first officer's instrument panel and right gusset panel are units of the main instrument panel and provide a glare-free mounting surface for the instruments most frequently monitored by the first officer. The right gusset panel is adjacent to the first officer's instrument panel.

2. Description

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- A. Instruments and annunciators mounted on the first officer's panel are: flight mode annunciator, control display unit annunciator, vertical alert annunciator, flight director and CADC annunciator, mach airspeed indicator, flight director, radio altimeter, altimeter, below glideslope annunciator, ground proximity terrain annunciator, marker beacon annunciators, hydraulic pressure indicators, hydraulic power transfer switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, hydraulic quantity indicators, radio magnetic indicator, brake temperature indicator, radio direction indicator, vertical speed indicator, TAS/SAT indicator, limit speed placard and a compass correction card and holder.

WJE 407, 408, 411, 880

- B. Instruments mounted on the first officer's panel are: flight mode annunciator, control display unit annunciator, vertical alert annunciator, flight director and central air data computer annunciator, compass and navigation annunciator, TAS/SAT indicator, mach airspeed indicator, attitude director indicator, radio altimeter, below glideslope annunciator, ground proximity warning switch annunciator, altimeter, marker beacon annunciators, hydraulic pressure indicators, hydraulic power transfer switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, hydraulic quantity indicators, radio magnetic indicator, brake temperature indicator, radio direction indicator, vertical speed indicator, 8-day clock, engine vibration indicators, engine vibration pickup and test switches, compass correction card holder, and airspeed limit placard.

WJE 407, 408, 411, 880 POST MD80-34-285

- C. Instruments and annunciators mounted on the first officer's instrument panel are: flight mode annunciator, flight director and central air data computer annunciator, mach/airspeed indicator, Electronic Flight Instrument System (EFIS) primary flight display, altimeter, below glide slope annunciator, GPWS annunciator, hydraulic pressure indicators, hydraulic power transfer switch, hydraulic engine pump switches, hydraulic auxiliary pump switch, compass, EFIS navigational display, vertical speed indicator, hydraulic quantity indicators, brake temperature indicator, and a compass correction card and holder.
- D. Mounted on the right gusset panel are: limit speed placard, floor light panel, static air panel, and instrument light panel.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- E. Mounted on the right gusset panel are: floor light panel, static air panel, and instrument light panel.

3. Operation

- A. Instructions for operation of instruments on the first officer's instrument panel are included in the specific instrument system chapter of the maintenance manual.

EFFECTIVITY

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

TP-80MM-WJE

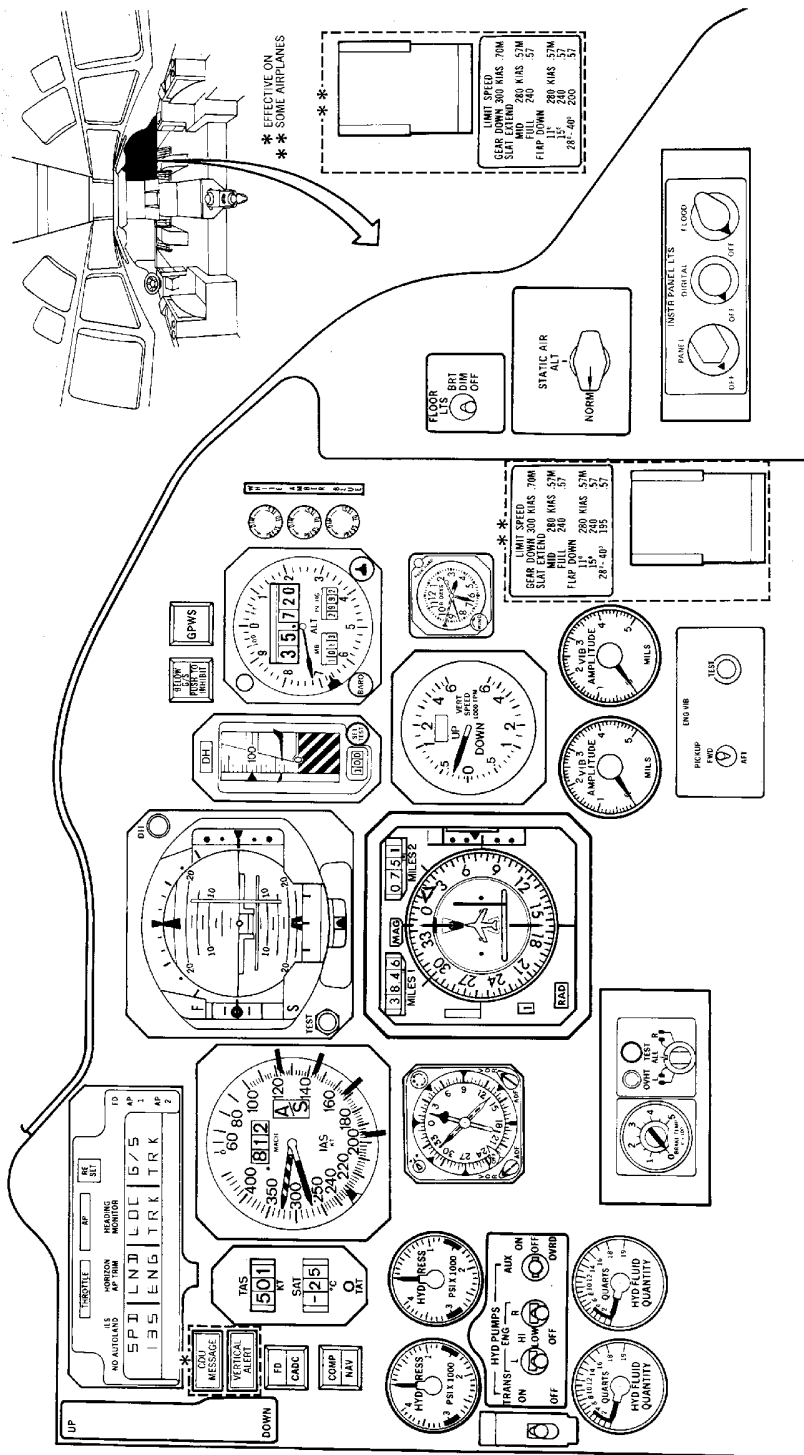
31-11-02

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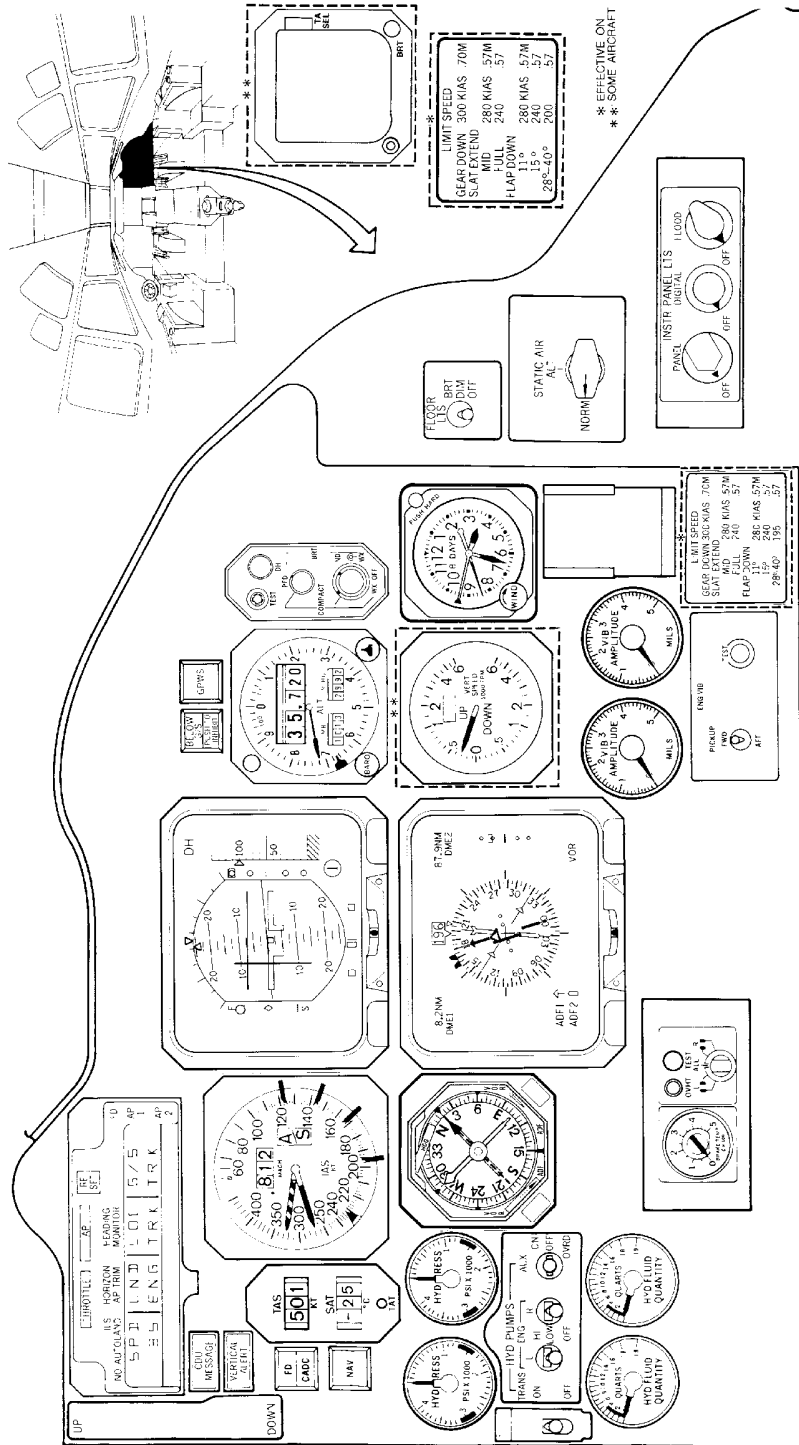
**First Officer's Instrument Panel
Figure 1/31-11-02-990-810 (Sheet 1 of 2)**

EFFECTIVITY
WJE 880

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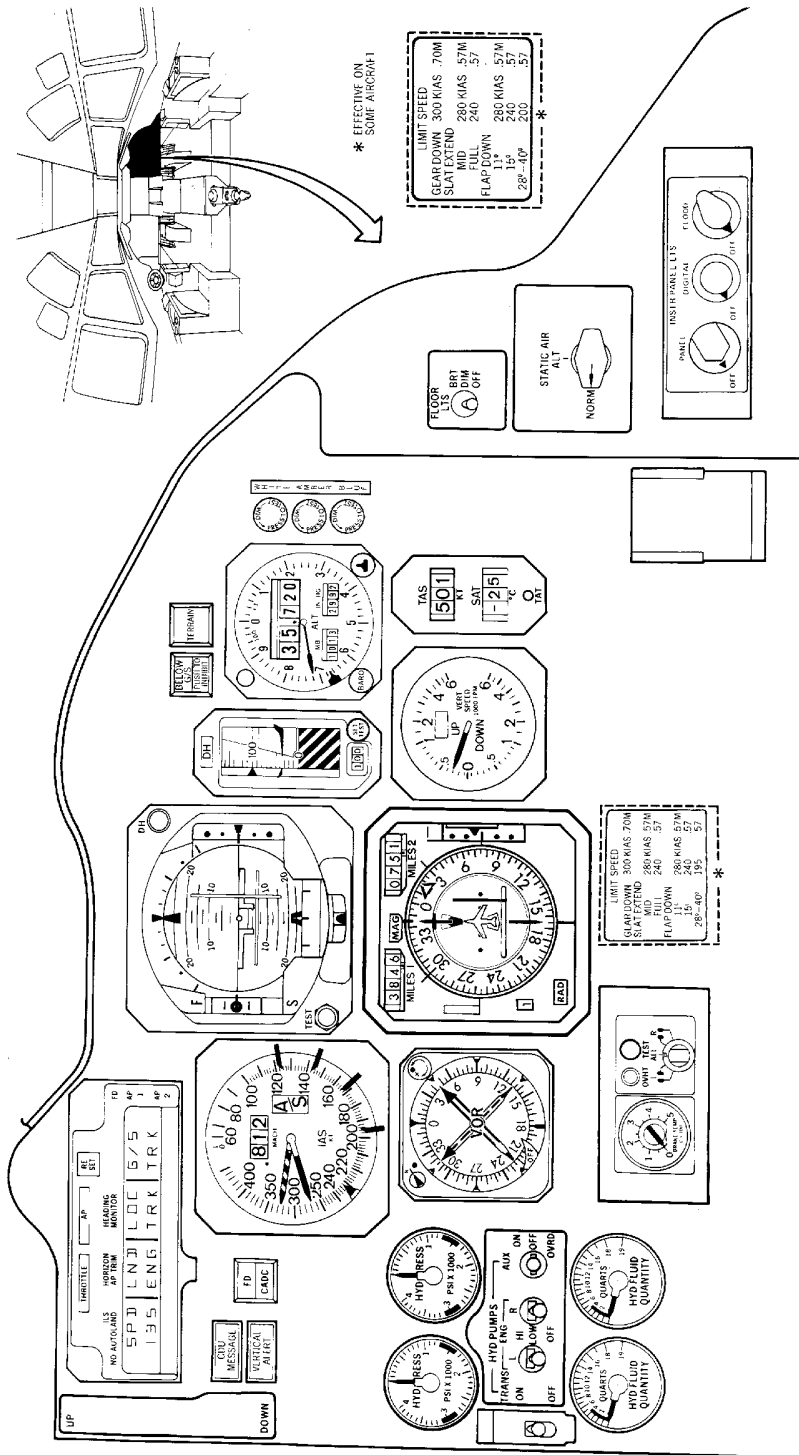
**First Officer's Instrument Panel
Figure 1/31-11-02-990-810 (Sheet 2 of 2)**

EFFECTIVITY
WJE 407, 408, 411

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BBBC-31-685A

**First Officer's Instrument Panel
Figure 2/31-11-02-990-811 (Sheet 1 of 3)**

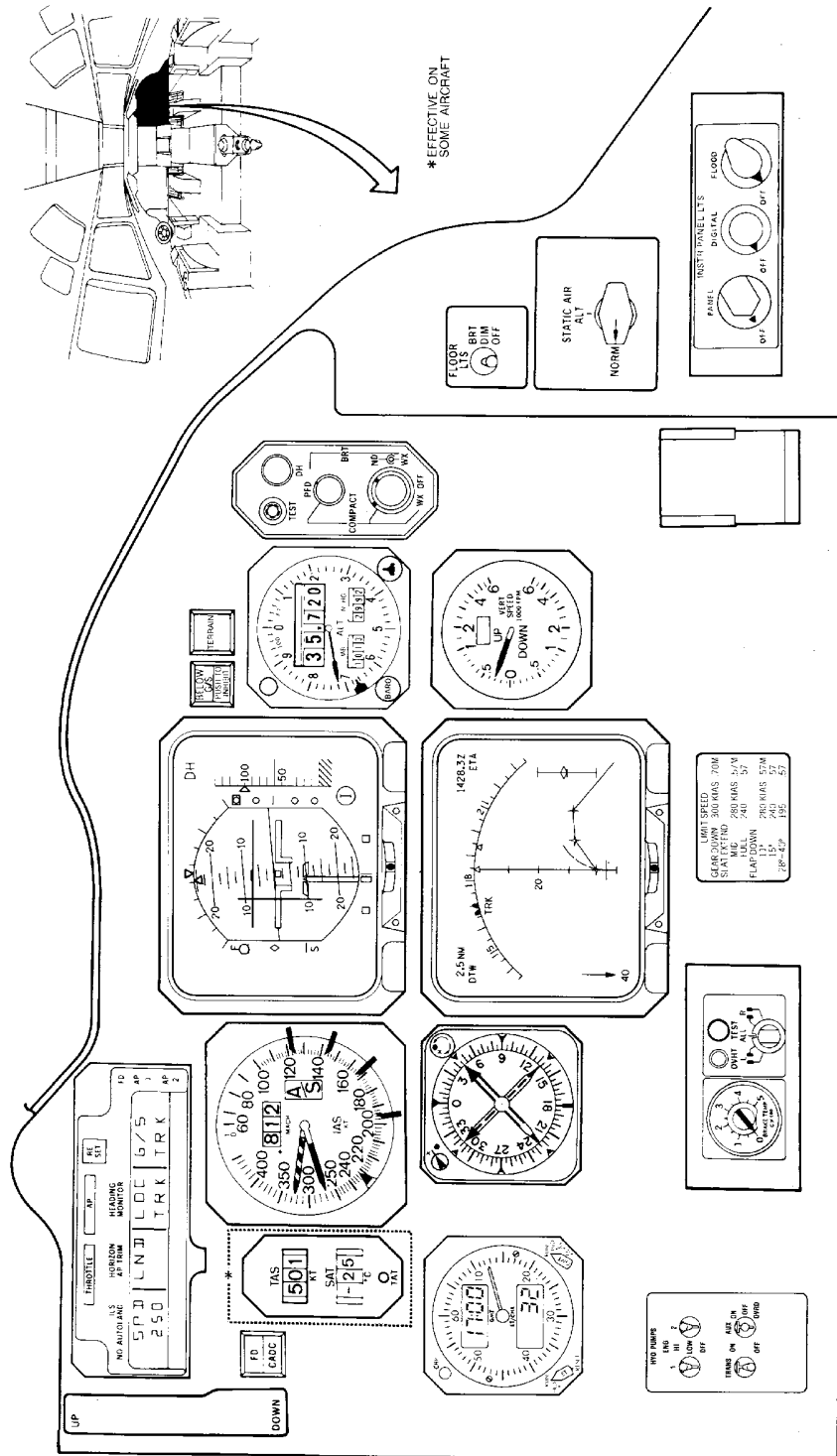
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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TP-80MM-WJE

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BBB2-31-990B

**First Officer's Instrument Panel
Figure 2/31-11-02-990-811 (Sheet 2 of 3)**

EFFECTIVITY
WJE 415, 418, 863, 864, 866

TP-80MM-WJE

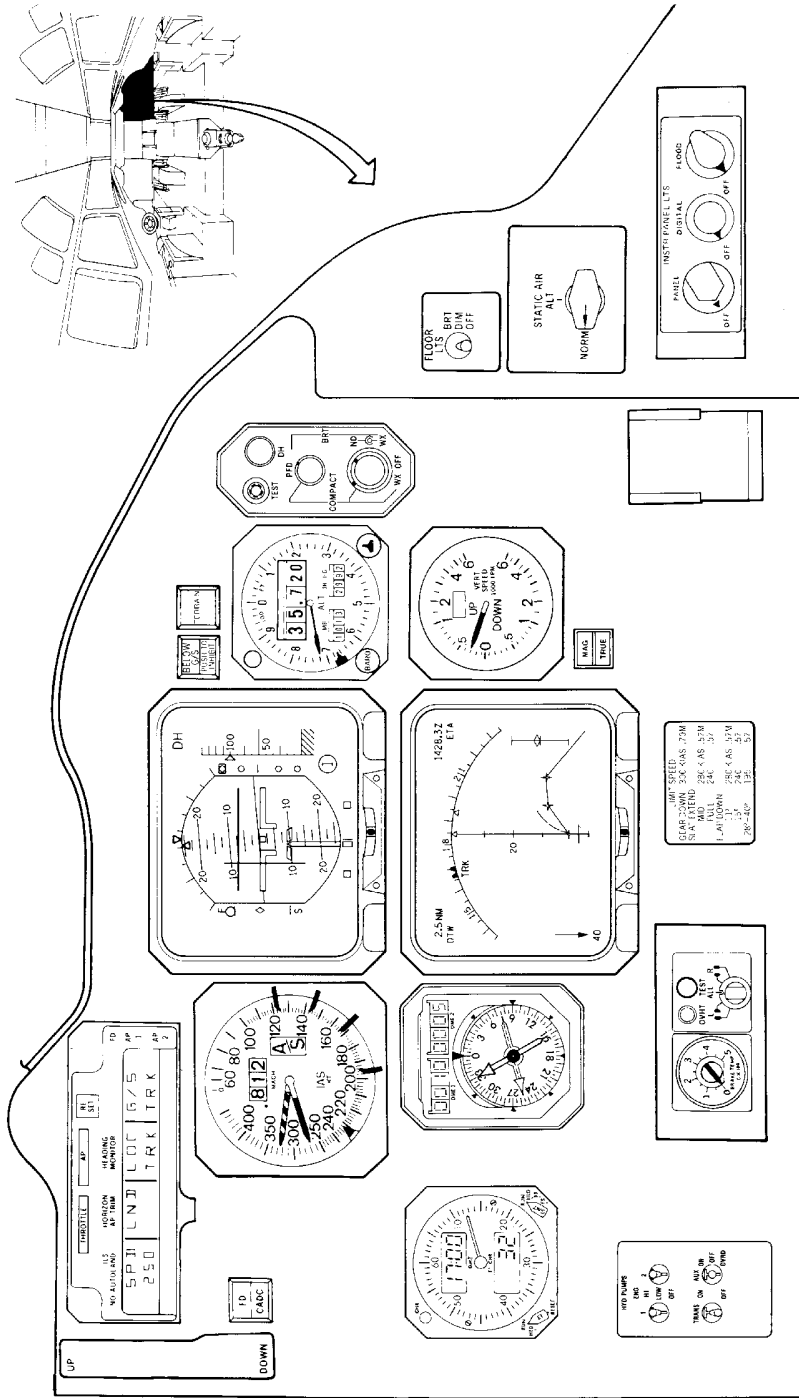
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First Officer's Instrument Panel
Figure 2/31-11-02-990-811 (Sheet 3 of 3)

EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

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CENTER INSTRUMENT PANEL - DESCRIPTION AND OPERATION

1. General

- A. The center instrument panel, which is a unit of the main instrument panel, provides a glarefree mounting surface for the instruments monitored jointly by the captain and first officer.

2. Description

WJE 405, 409, 416, 420, 422, 424-427, 429, 884, 893

- A. Instruments mounted on the center instrument panel are: standby horizon indicator, thrust rating indicator, engine reverse thrust annunciators, engine reverse thrust unlock annunciators, wheel not turning annunciator, automatic reverse thrust annunciator, engine pressure ratio indicators, oil pressure indicators, N₁ tachometer indicator, oil temperature indicator, fuel quantity indicator, fuel temperature indicator, exhaust gas temperature indicators, fuel used reset switch, oil quantity indicators, fuel flow/fuel used indicators, N₂ tachometer indicators, flap position indicator, slat takeoff annunciator, slat disagree annunciator, slat auto annunciator, slat land annunciator, and gear handle release panel.

WJE 407, 408, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 891, 892

- B. Instruments mounted on the center instrument panel are: radio card holder, standby horizon indicator, thrust rating indicator, engine reverse thrust annunciators, engine reverse thrust unlock annunciators, wheel not turning annunciator, automatic reverse thrust annunciator, engine pressure ratio indicators, oil pressure indicators, N₁ tachometer indicator, oil temperature indicator, fuel quantity indicator, fuel temperature indicator, exhaust gas temperature indicators, fuel used reset switch, oil quantity indicators, fuel flow/fuel used indicators, N₂ tachometer indicators, flap position indicator, slat takeoff annunciator, slat disagree annunciator, slat extend annunciator, slat land annunciator, and gear handle release panel.

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- C. Instruments mounted on the center instrument panel are: standby horizon indicator, primary engine display, systems display panel, automatic reverse thrust annunciator, wheel not turning annunciator, thrust rating panel, standby airspeed/altimeter indicator, fuel quantity indicator, and gear handle release panel.

WJE ALL

3. Operation

- A. Instructions for operation of instruments on the center instrument panel are included in the specific instrument system chapter of the maintenance manual.

EFFECTIVITY
WJE ALL

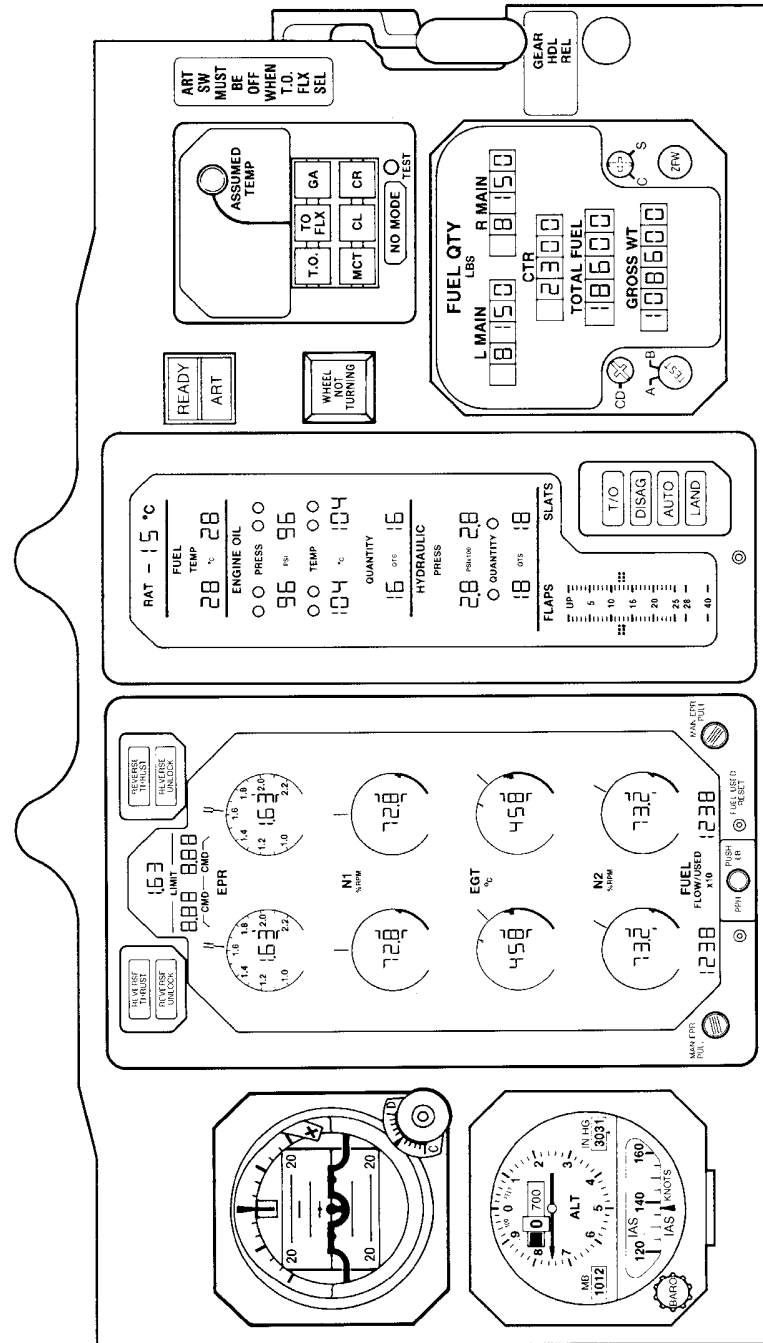
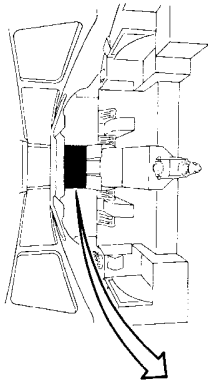
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Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 1 of 10)

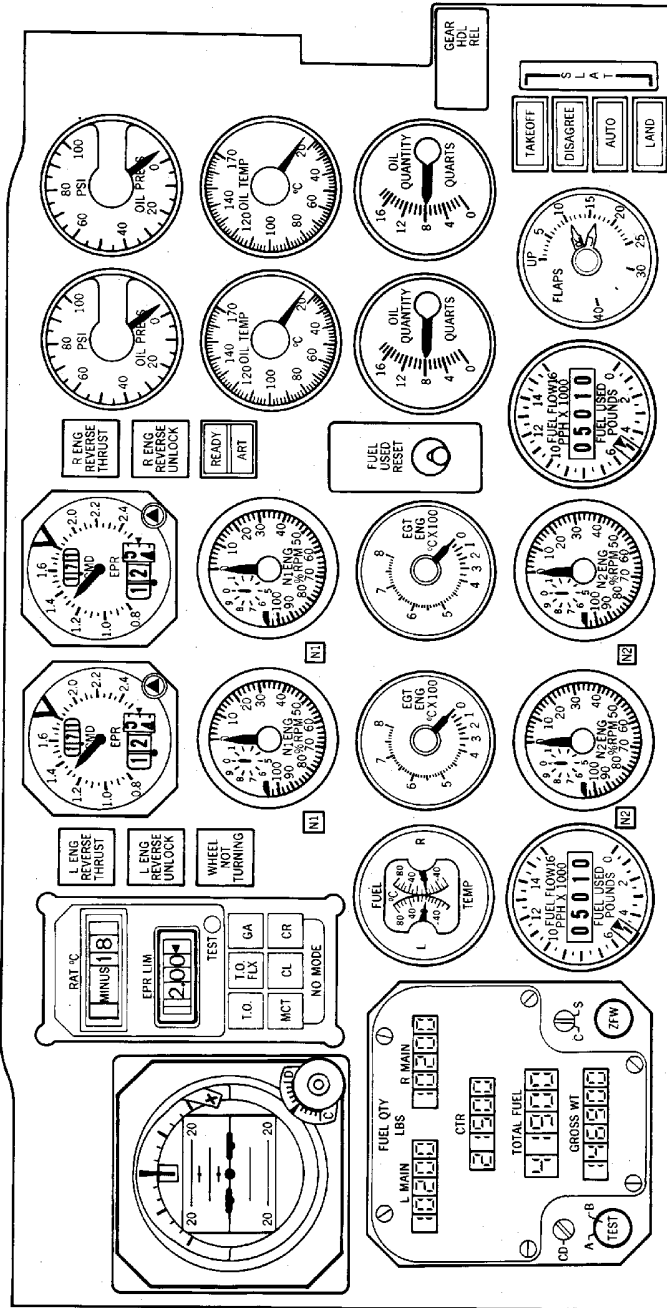
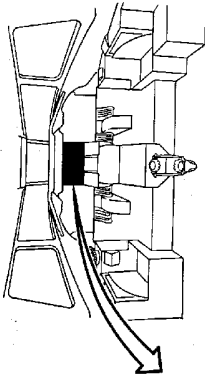
EFFECTIVITY
WJE 406, 410

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BB62-31-395



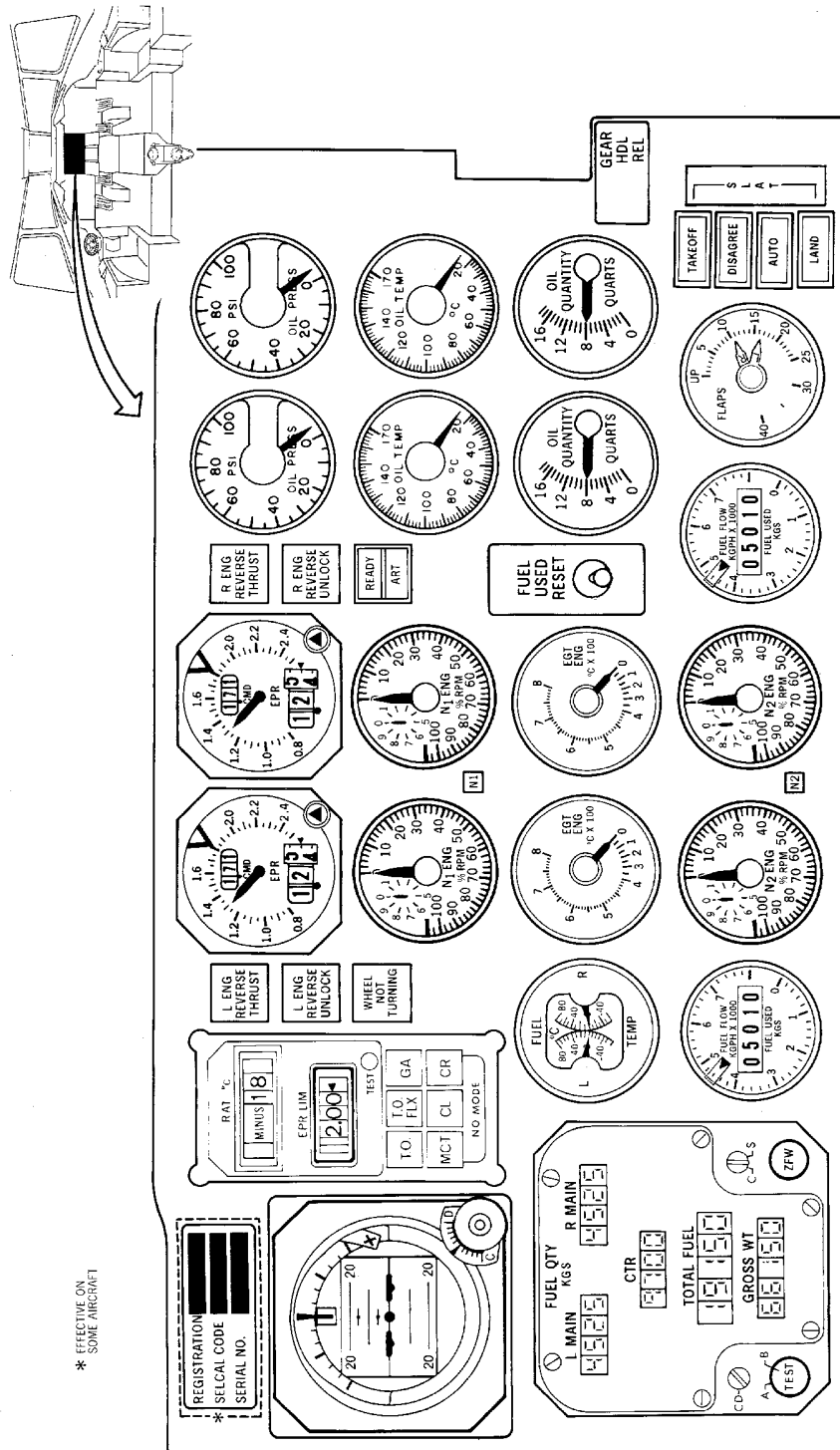
Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 2 of 10)

EFFECTIVITY
WJE 405, 409, 873, 874, 881, 883, 884, 892, 893

31-11-03

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* EFFECTIVE ON SOME AIRCRAFT

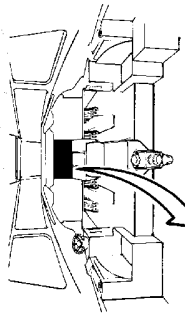
Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 3 of 10)

EFFECTIVITY
WJE 407, 408, 411, 880

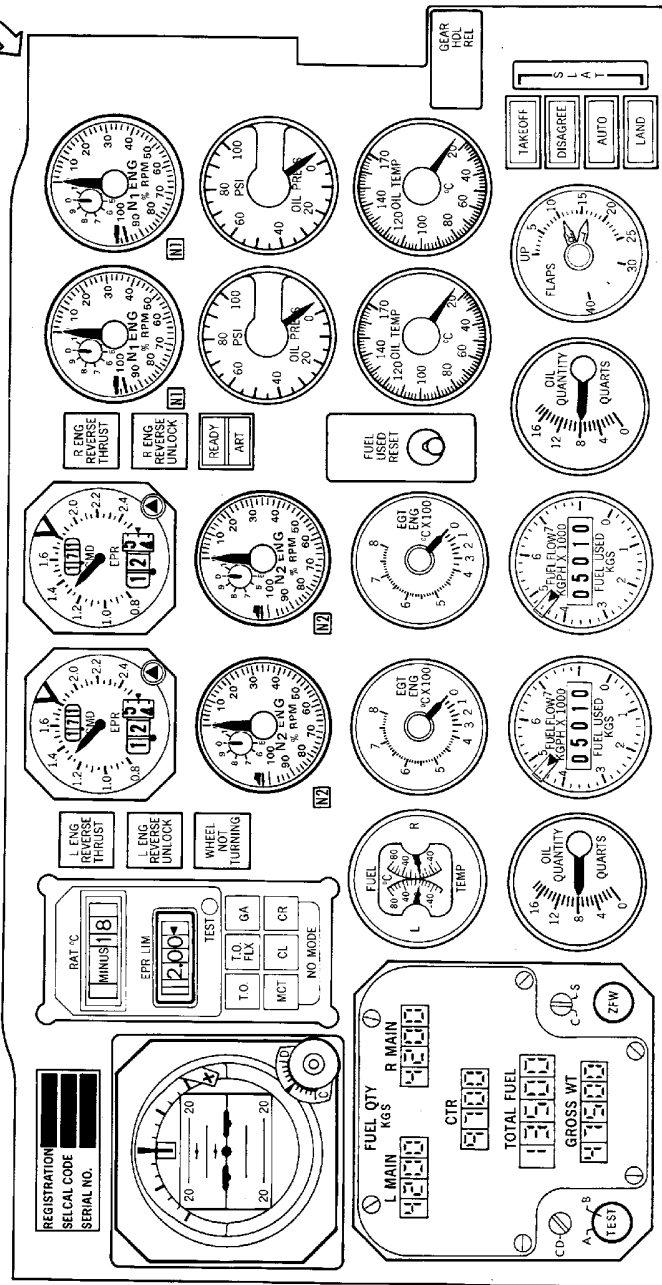
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TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



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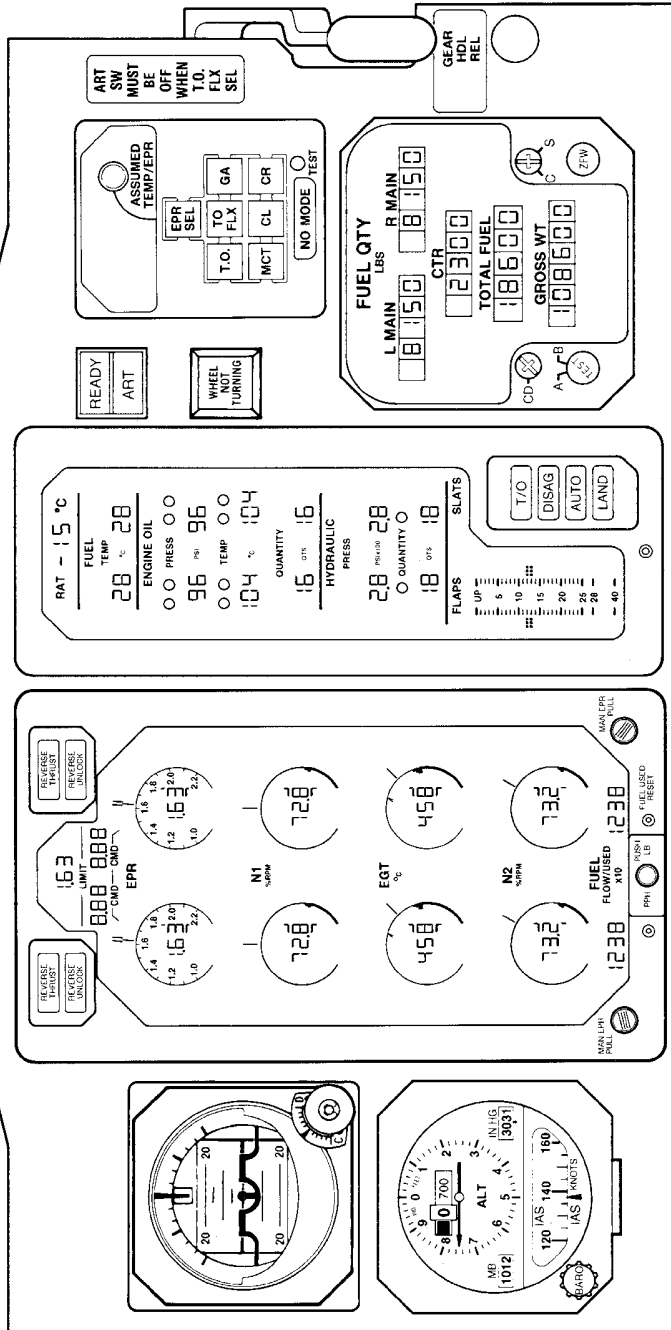
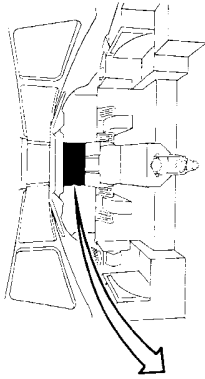
**Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 4 of 10)**

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 868

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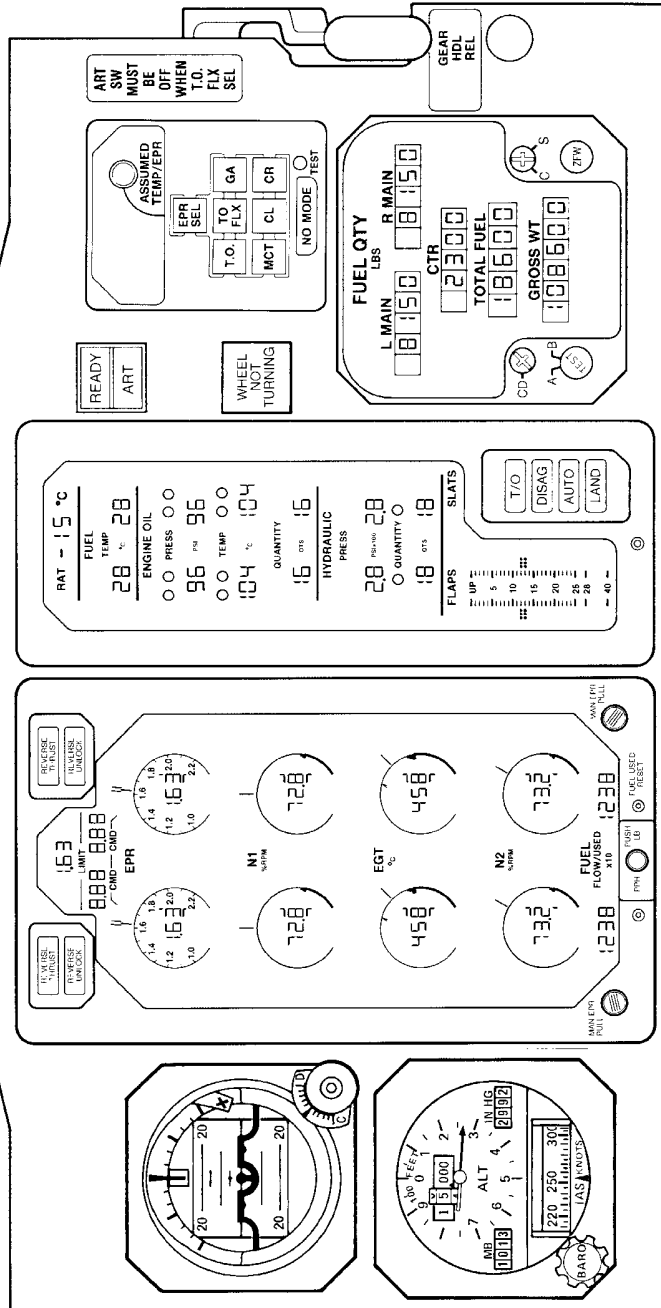
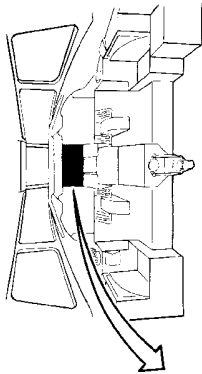
Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 5 of 10)

EFFECTIVITY
WJE 401-404, 412, 414

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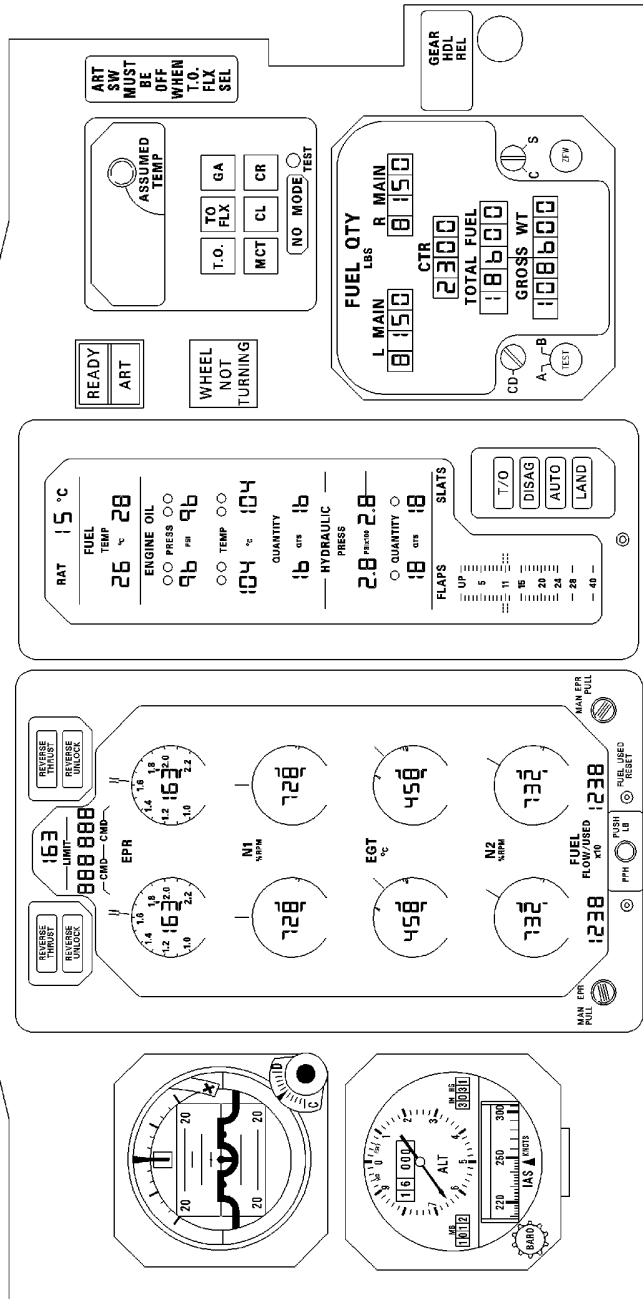
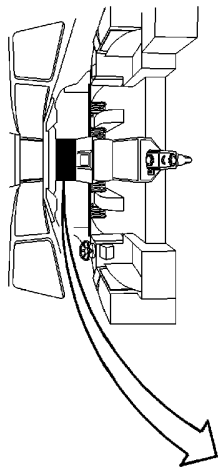


Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 6 of 10)

EFFECTIVITY
WJE 875-879

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CAG(I/GDS)

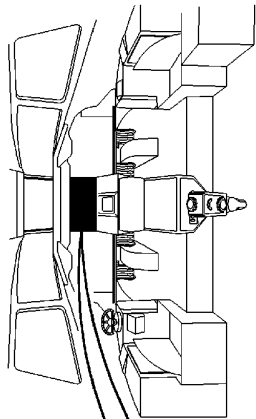
Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 7 of 10)

EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

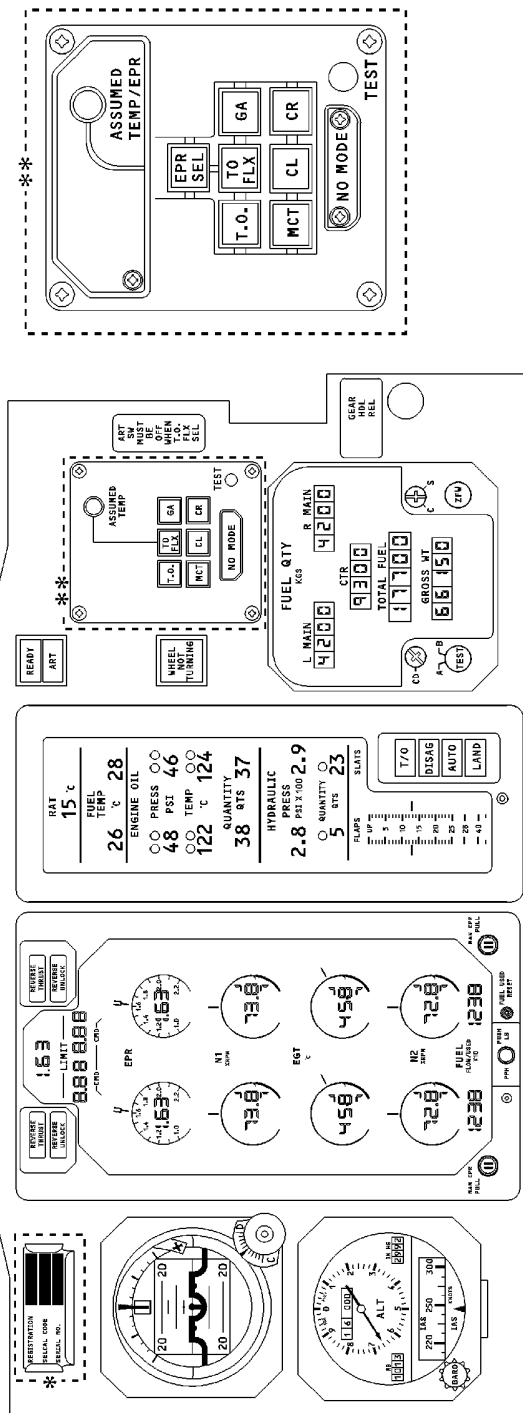
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** EFFECTIVE ON AIRCRAFT - 109-121, 123-134, 159, 161-165, 201-999

* EFFECTIVE ON SOME AIRCRAFT



BBB2-31-1659

CAG (IGDS)

Center Instrument Panel
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EFFECTIVITY
WJE 415, 417-419, 421, 423, 866, 869, 871, 872

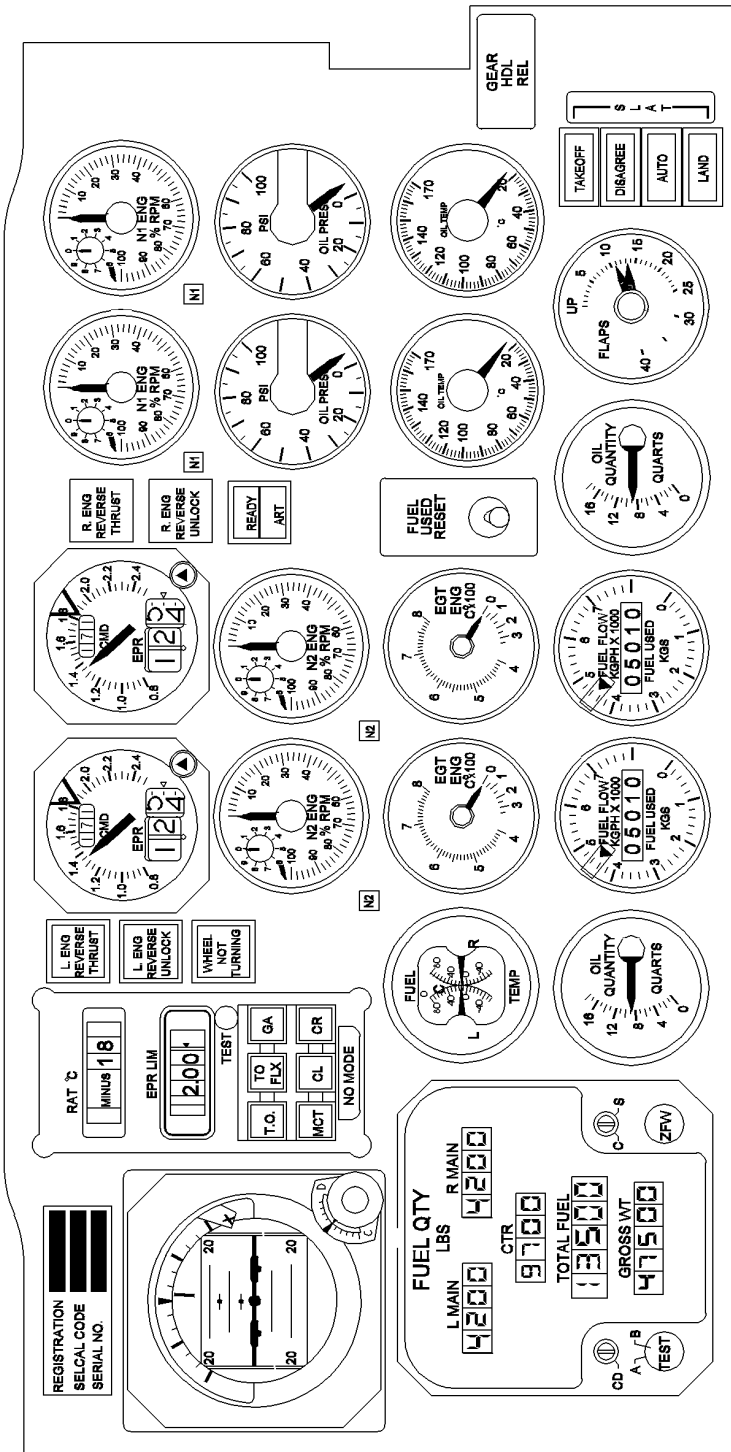
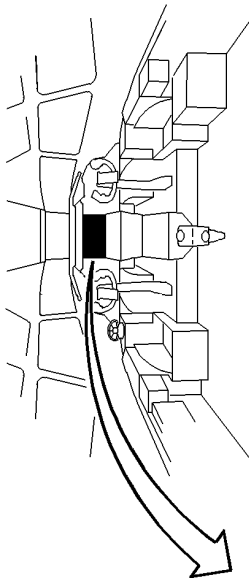
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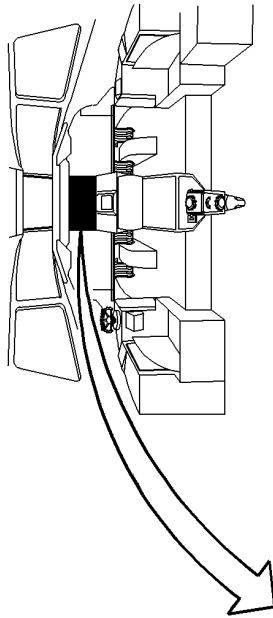
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Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 9 of 10)

EFFECTIVITY
WJE 861, 862, 891

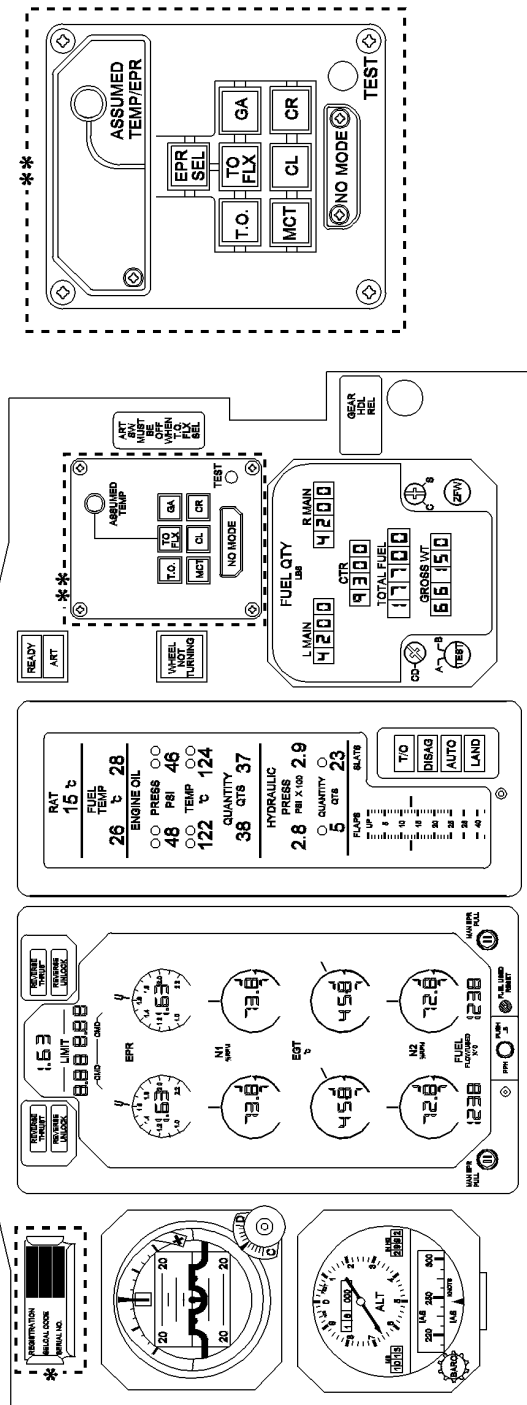
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** EFFECTIVE ON AIRCRAFT. 108-121,123-134,159,
181-165,201-999

* EFFECTIVE ON
SOME AIRCRAFT



Center Instrument Panel
Figure 1/31-11-03-990-801 (Sheet 10 of 10)

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EFFECTIVITY
WJE 863-865

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UPPER INSTRUMENT PANEL - DESCRIPTION AND OPERATION

1. General

- A. The upper instrument panel is located above the main instrument panel, shielding the main instrument panel from flight compartment window glare.

2. Description

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- A. The upper instrument panel includes the following : a hydraulic pressure indicator, an assumed temperature indicator, a fire control panel, an automatic reverse thrust switch, a gear door annunciator, landing gear annunciators, an airflow indicator, and an eight-day clock.

WJE 415, 417-419, 421, 423

- B. The upper instrument panel includes the following: a hydraulic brake pressure indicator, a fire control panel, an automatic reverse thrust switch, a gear door annunciator, landing gear annunciators, and an air flow indicator.

WJE 405, 409, 873, 874, 881, 883, 884, 892, 893

- C. The upper instrument panel includes the following: a hydraulic brake pressure indicator, an assumed temperature indicator, a fire control panel, an automatic reverse thrust switch, a gear door annunciator, landing gear annunciators, an air flow indicator, and radio card holder.

WJE 407, 408, 411, 880

- D. The upper instrument panel includes the following: a hydraulic pressure indicator, a marker beacon sensitivity switch, an assumed temperature indicator, a fire control panel, an automatic reverse thrust switch, a gear door annunciator, landing gear annunciators, and an air flow indicator.

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- E. The upper instrument panel includes the following: a hydraulic brake pressure indicator, a fire control panel, an automatic reverse thrust switch, a gear door annunciator, landing gear annunciators, an air flow indicator, and radio card holder.

WJE ALL

3. Operation

- A. Instructions for operation of equipment on the upper instrument panel are included in the specific system chapter of the maintenance manual.

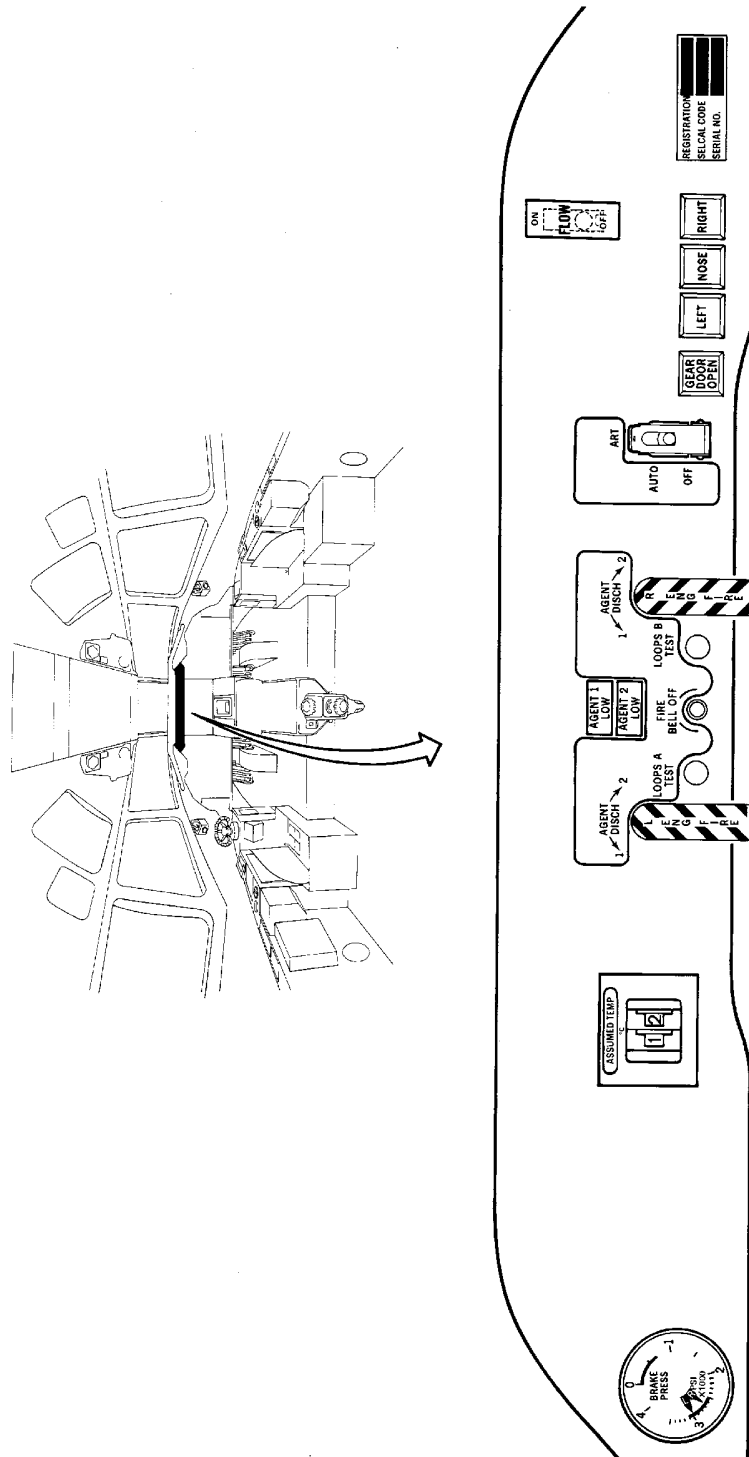
EFFECTIVITY
WJE ALL

TP-80MM-WJE

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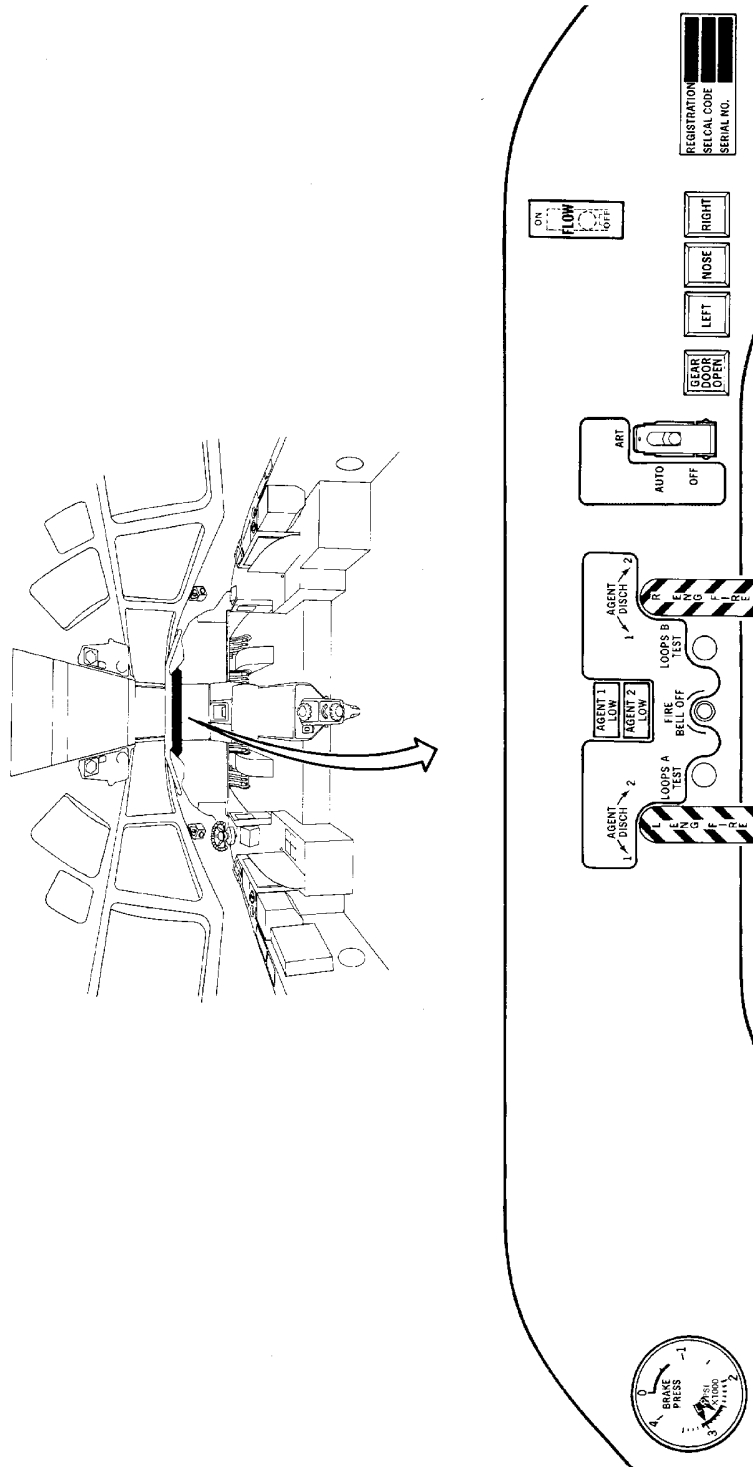
BB02-31-484

**Upper Instrument Panel
Figure 1/31-11-04-990-801 (Sheet 1 of 6)**

EFFECTIVITY
WJE 405, 409, 873, 874, 881, 883, 884, 892, 893

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Upper Instrument Panel
Figure 1/31-11-04-990-801 (Sheet 2 of 6)

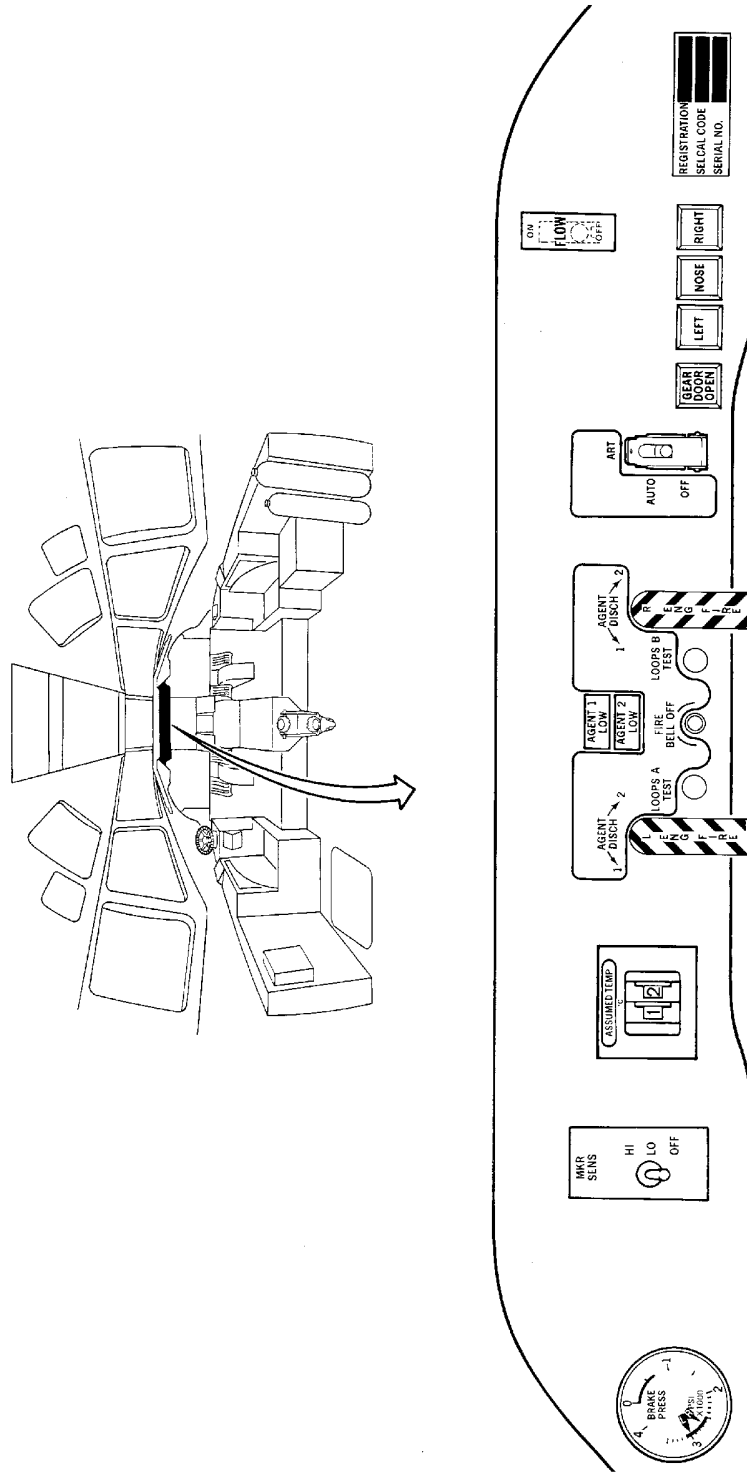
EFFECTIVITY
WJE 401-404, 406, 412, 414, 875-879

TP-80MM-WJE

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6882-31-887

**Upper Instrument Panel
Figure 1/31-11-04-990-801 (Sheet 3 of 6)**

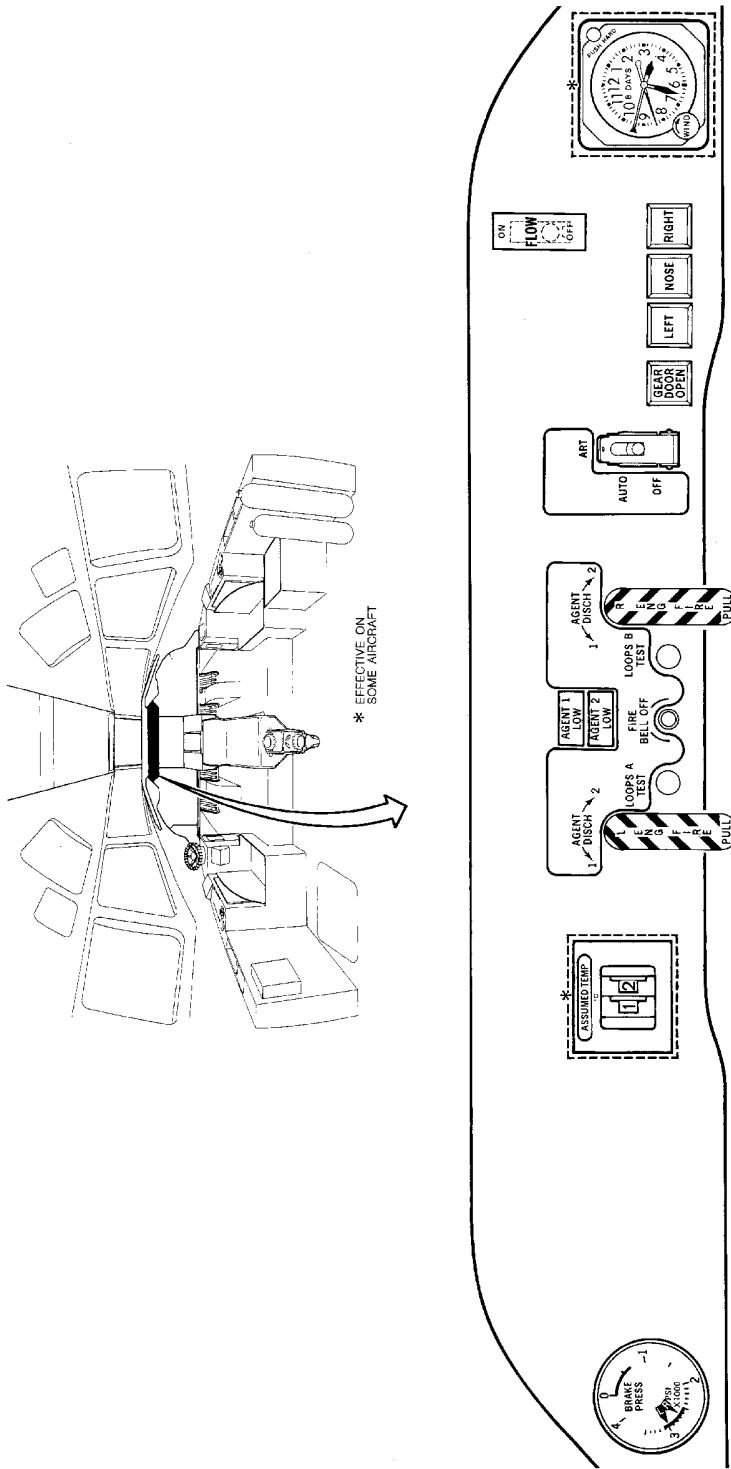
EFFECTIVITY
WJE 407, 408, 411, 880

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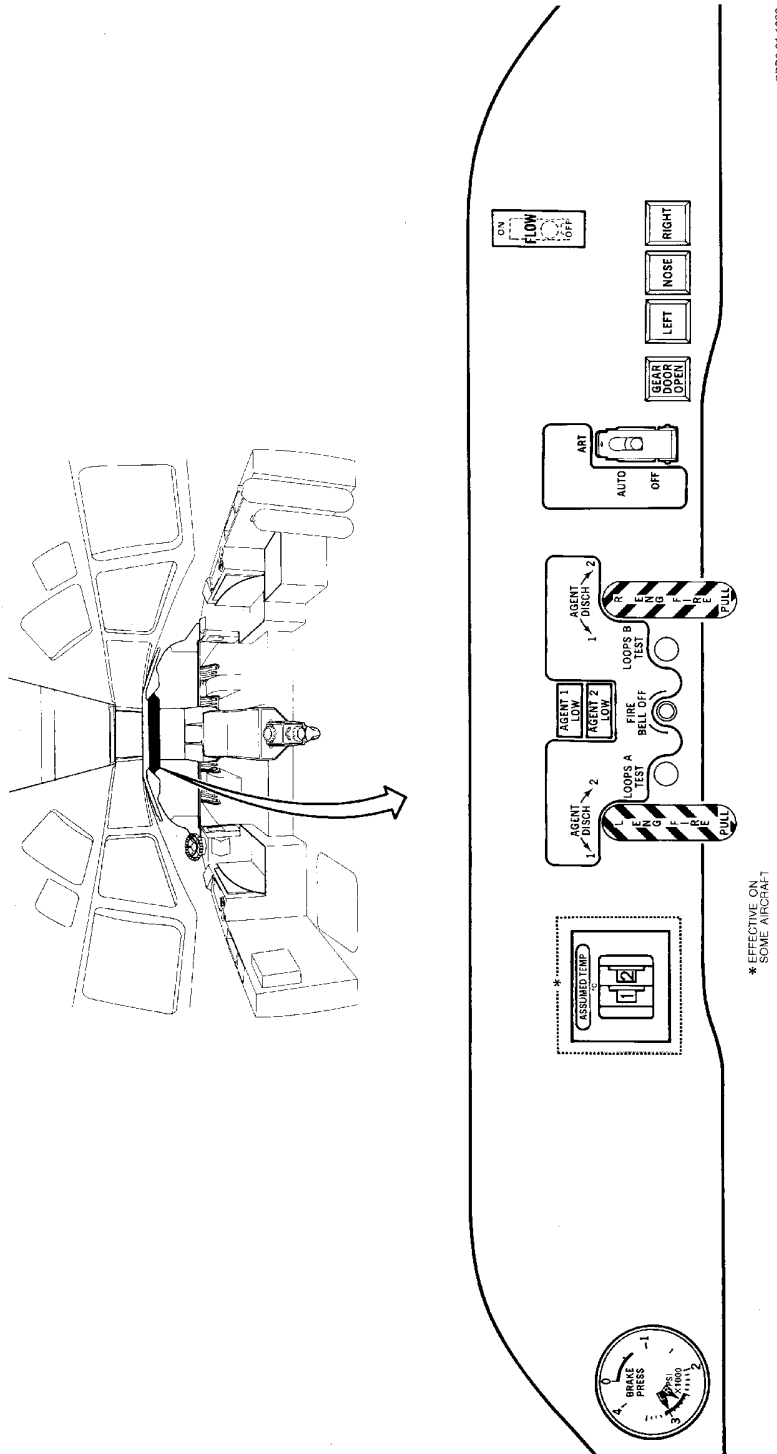
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Upper Instrument Panel
Figure 1/31-11-04-990-801 (Sheet 4 of 6)

EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

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**Upper Instrument Panel
Figure 1/31-11-04-990-801 (Sheet 5 of 6)**

EFFECTIVITY
WJE 410

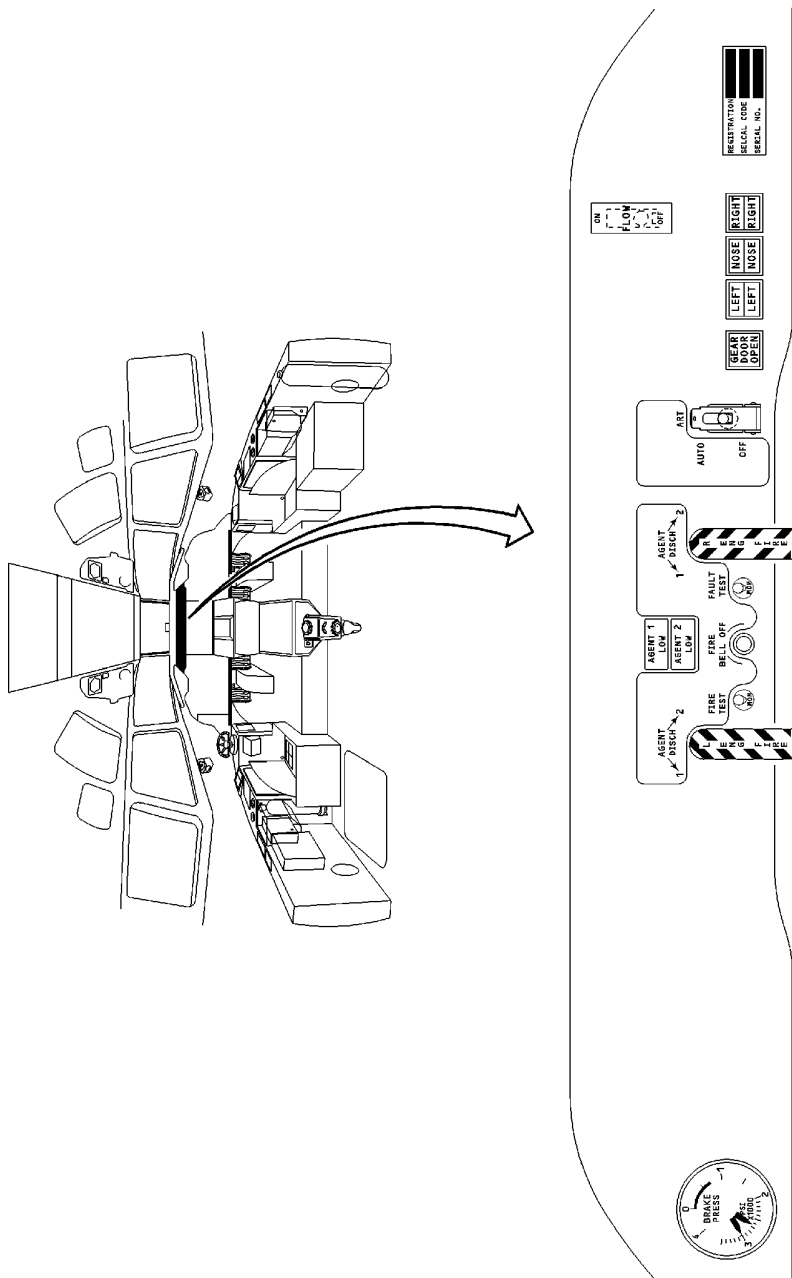
TP-80MM-WJE

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BBB2-31-1488



CAG(IGDS)

Upper Instrument Panel
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EFFECTIVITY
WJE 886, 887

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GLARESHIELD - DESCRIPTION AND OPERATION

1. General

- A. The glareshield is located above the main instrument panel, shielding the main instrument panel from flight compartment window glare.

2. Description

WJE 401-404, 412, 414

- A. The glareshield provides a mounting base for the flight guidance control rack, the automatic brake system annunciators, the master warning and master caution annunciators, the windshear annunciators, and the stall warning annunciators. The glareshield is crash padded for safety and can be used as a handgrip by the captain and first officer when adjusting seats.

WJE 873, 874, 886, 887, 892, 893

- B. The glareshield provides a mounting base for the flight guidance control rack, the master warning and master caution annunciators, the windshear annunciators effective on some aircraft, and the stall warning annunciators. The glareshield is crash padded for safety and can be used as a handgrip by the captain and first officer when adjusting seats.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-880, 891

- C. The glareshield provides a mounting base for the flight guidance control rack, the automatic brake system annunciators, the master warning and master caution annunciators, the windshear annunciators effective on some aircraft, and the stall warning annunciators. The glareshield is crash padded for safety and can be used as a handgrip by the captain and first officer when adjusting seats.

WJE 405, 406, 409, 410, 881, 883, 884

- D. The glareshield provides a mounting base for the flight guidance control rack, the automatic brake system annunciators and windshear annunciators effective on some aircraft, the master warning and master caution annunciators, and the stall warning annunciators. The glareshield is crash padded for safety and can be used as a handgrip by the captain and first officer when adjusting seats.

WJE ALL

- E. The flight guidance control rack includes the following panels: a flight guidance control panel, two navigation control panels, and two light control panels.

3. Operation

- A. Instructions for operation of controls on the glareshield are included in the specific instrument system chapter of the maintenance manual.

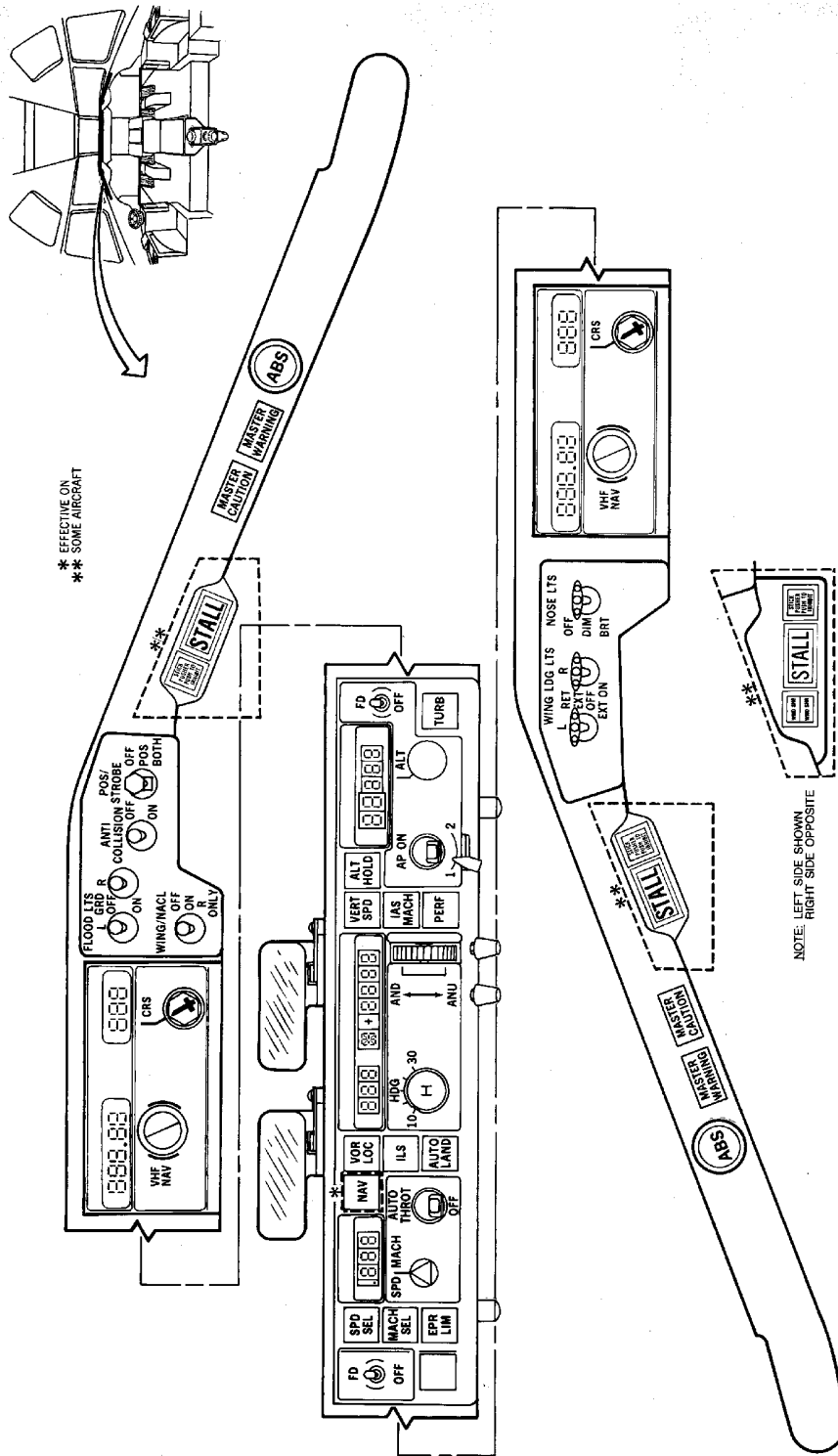
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-11-05

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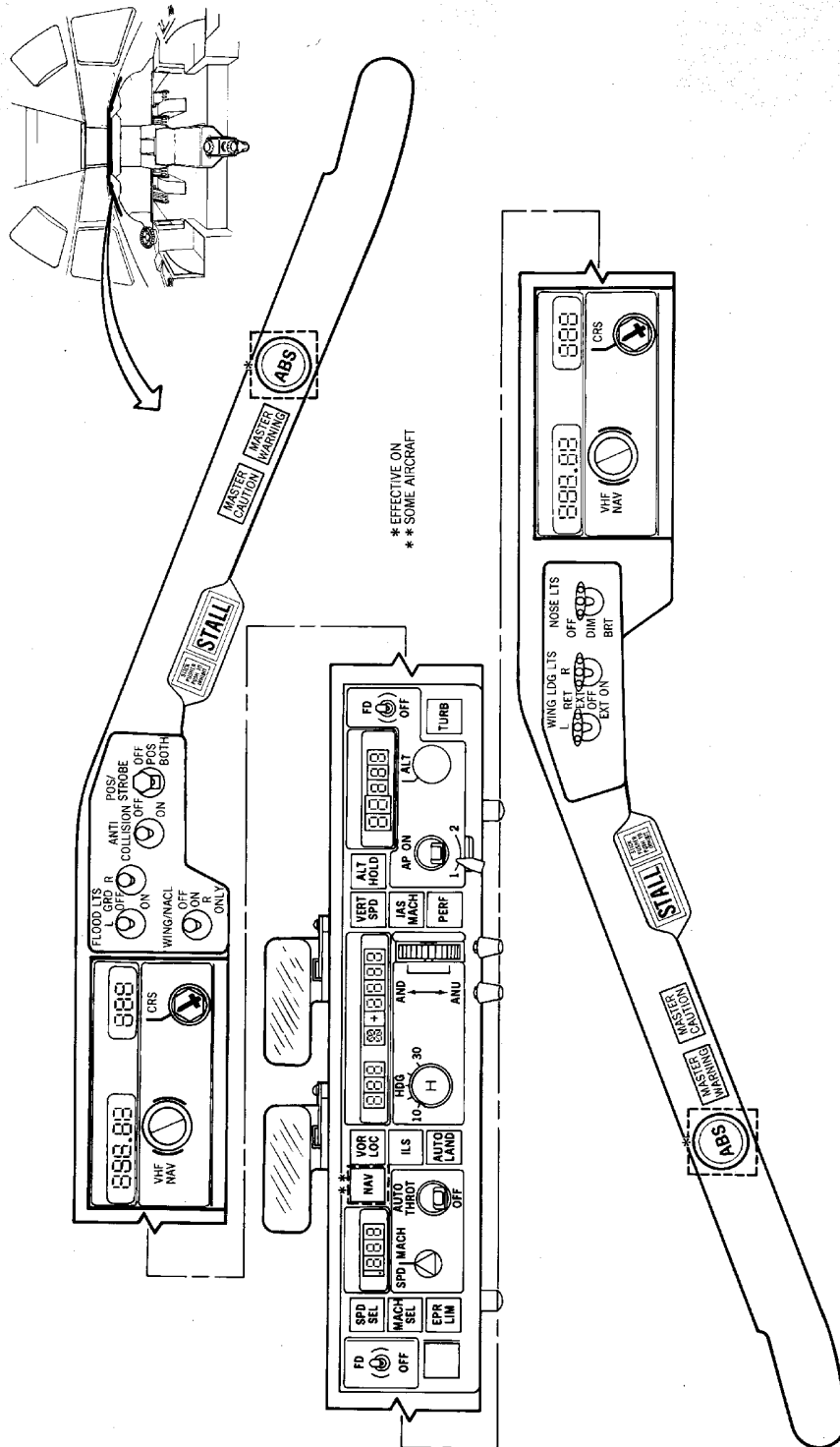
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Glareshield
Figure 1/31-11-05-990-801 (Sheet 1 of 10)

EFFECTIVITY
WJE 407, 408, 411, 880

31-11-05

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



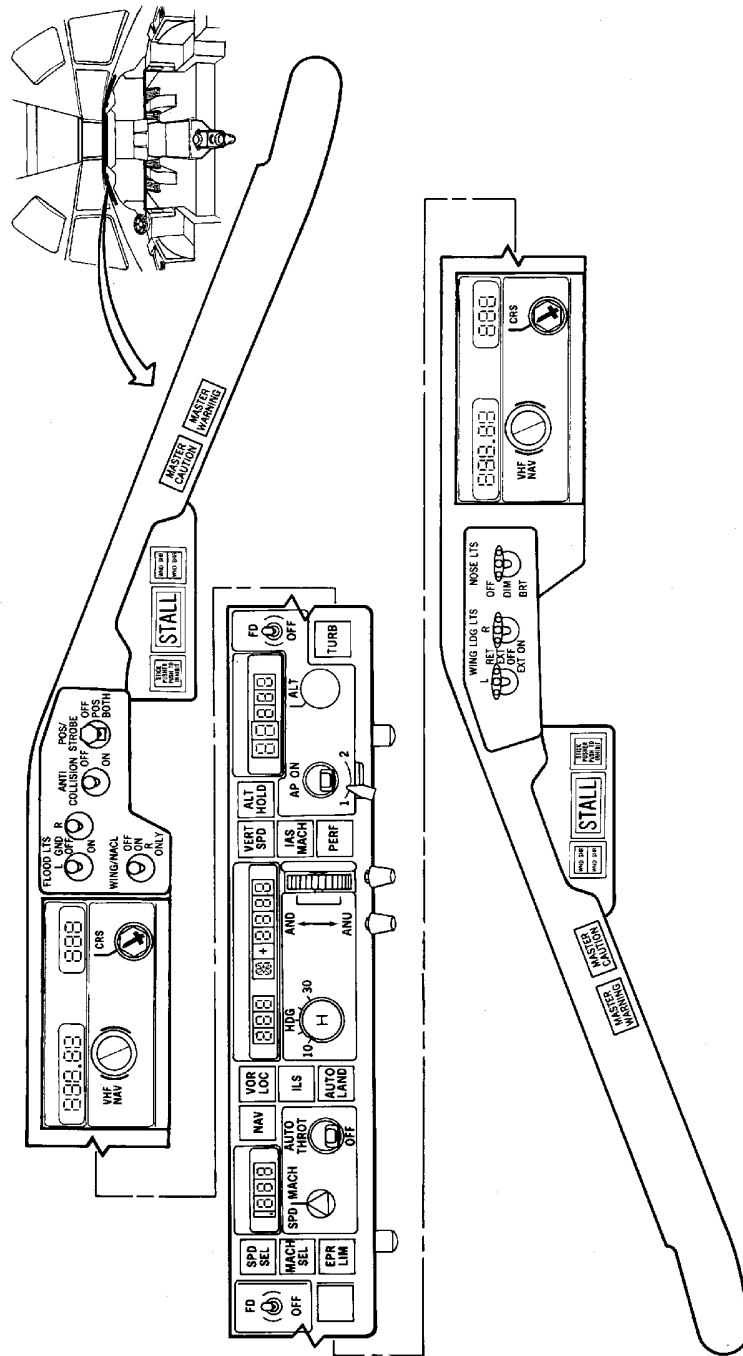
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Glareshield
Figure 1/31-11-05-990-801 (Sheet 2 of 10)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

31-11-05

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AIRCRAFT MAINTENANCE MANUAL



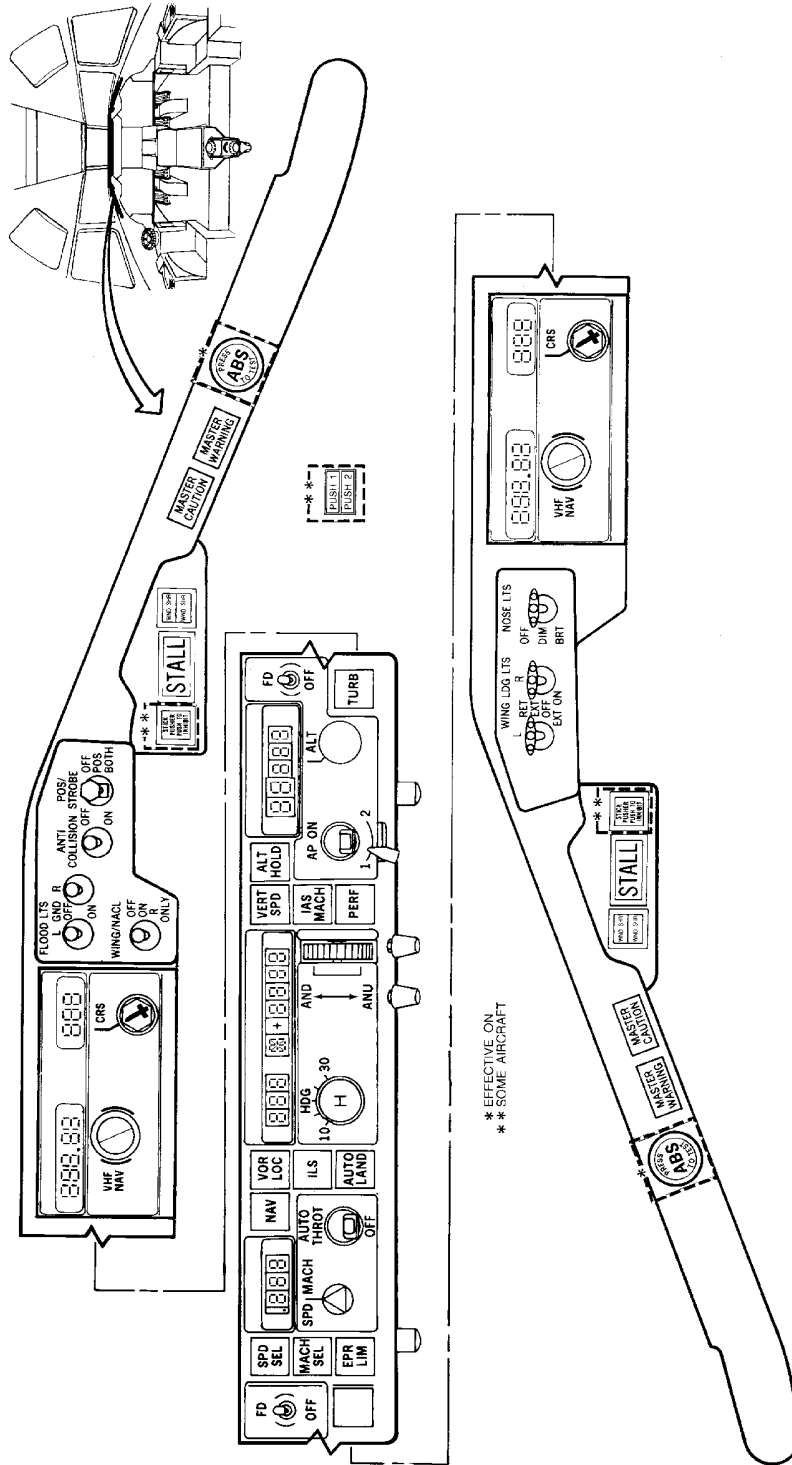
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Glareshield
Figure 1/31-11-05-990-801 (Sheet 3 of 10)

EFFECTIVITY
WJE 886, 887

31-11-05

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



8682-31-982A

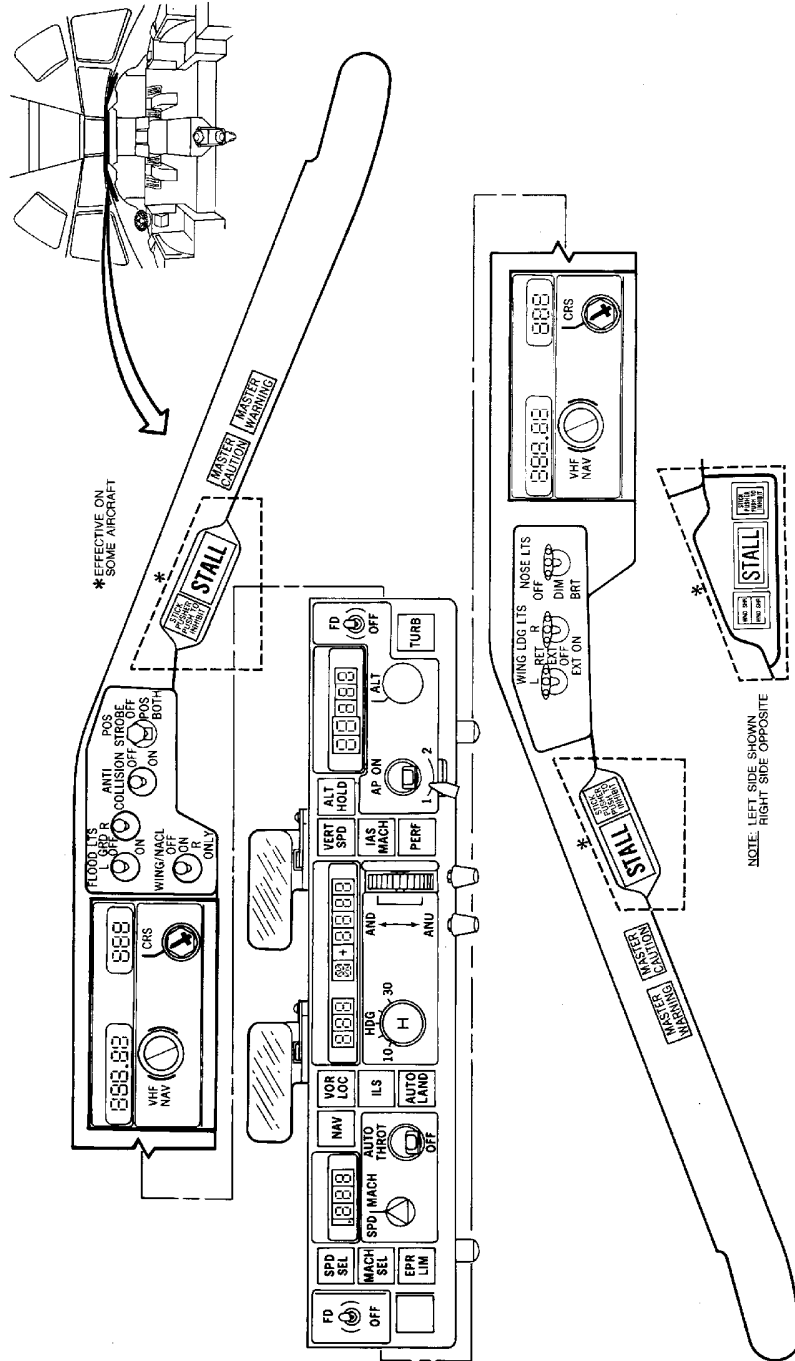
Glareshield
Figure 1/31-11-05-990-801 (Sheet 4 of 10)

EFFECTIVITY
WJE 406

TP-80MM-WJE

31-11-05

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



BBB2-31-1046

Glareshield
Figure 1/31-11-05-990-801 (Sheet 5 of 10)

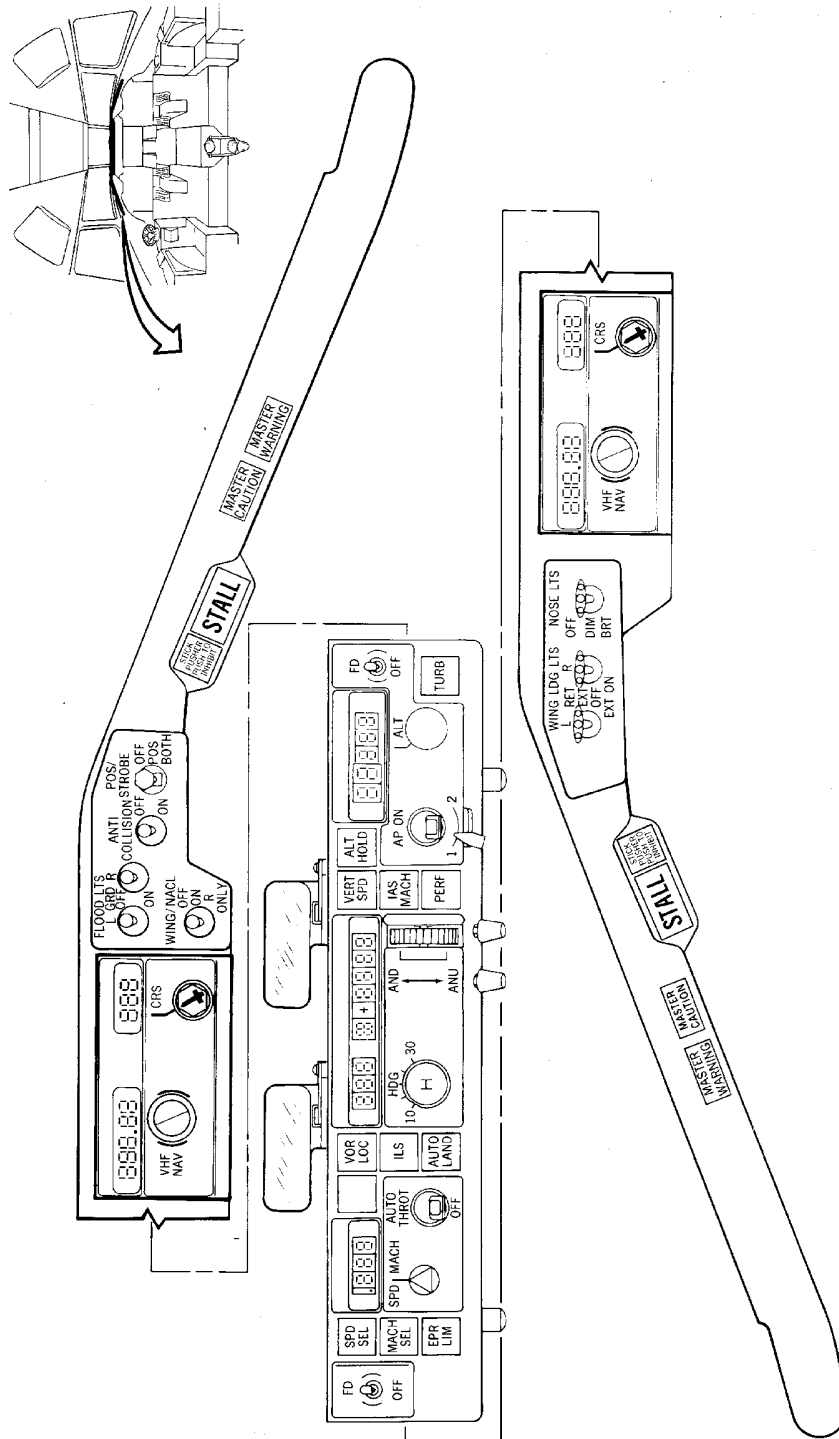
EFFECTIVITY
WJE 410

TP-80MM-WJE

31-11-05

**MD-80
AIRCRAFT MAINTENANCE MANUAL**

BB82 31-530



Glareshield
Figure 1/31-11-05-990-801 (Sheet 6 of 10)

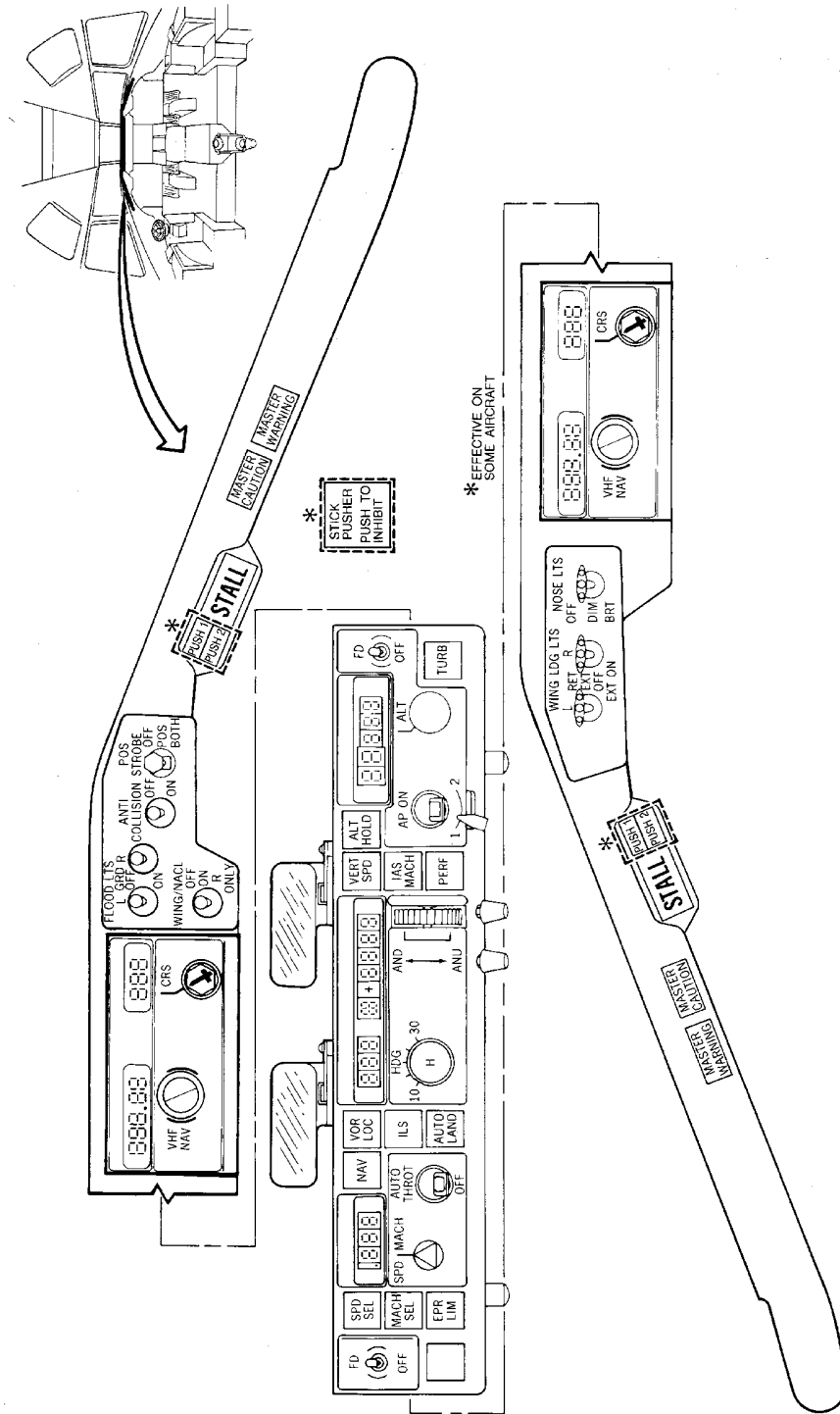
EFFECTIVITY
WJE 873, 874, 893

31-11-05

TP-80MM-WJE

**MD-80
AIRCRAFT MAINTENANCE MANUAL**

BBB2-31-893A



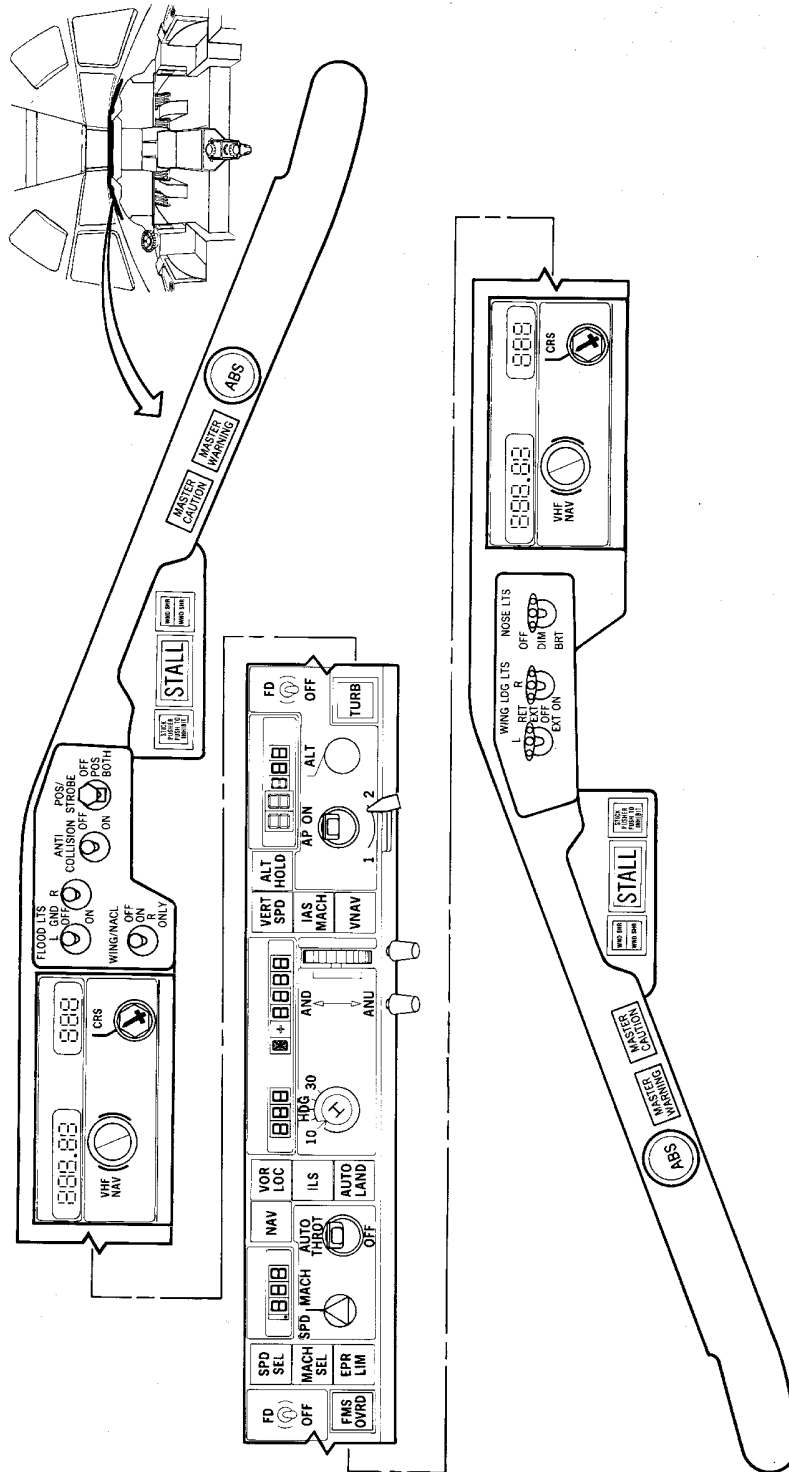
Glareshield
Figure 1/31-11-05-990-801 (Sheet 7 of 10)

EFFECTIVITY
WJE 892

TP-80MM-WJE

31-11-05

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



BBB2-31-356C

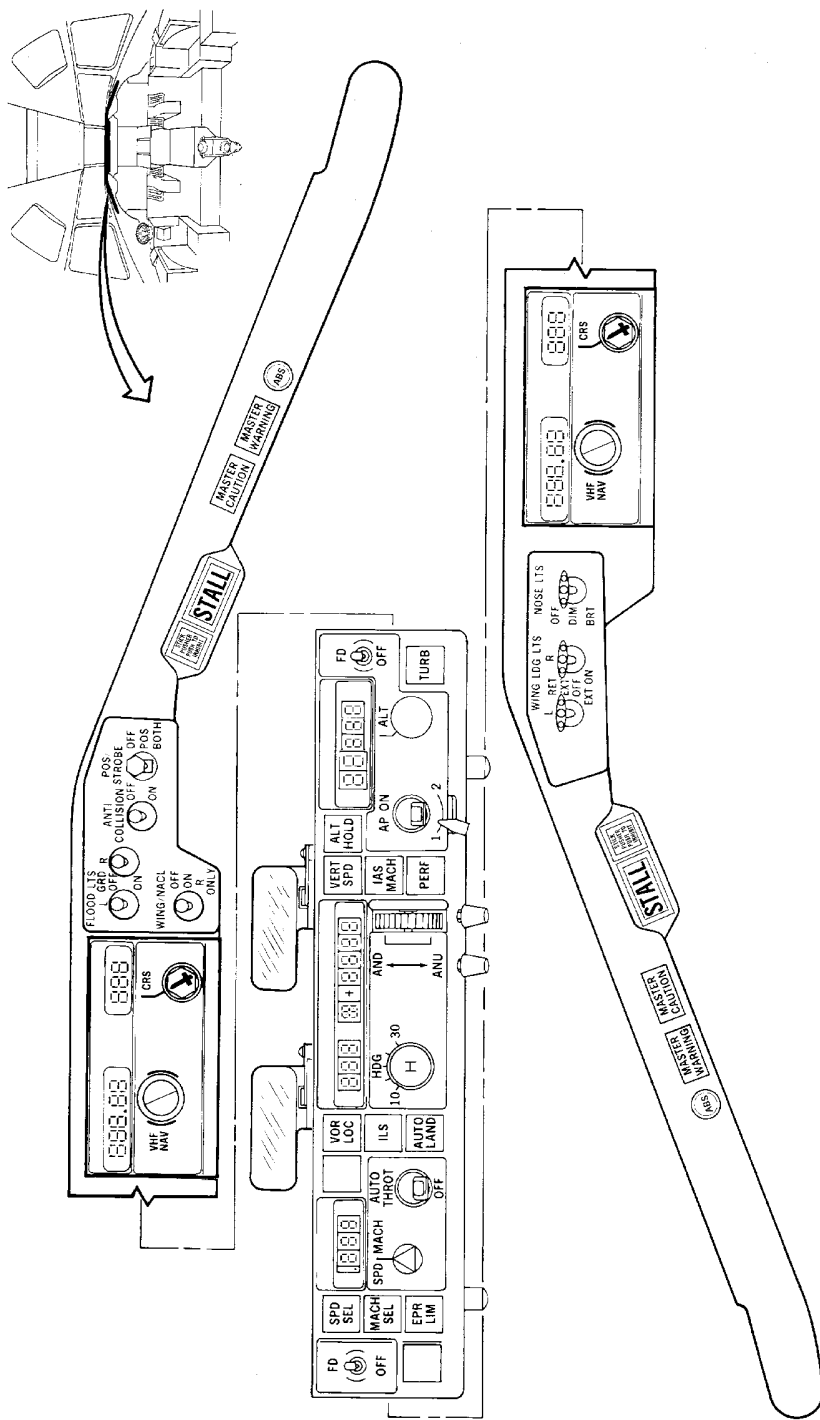
Glareshield
Figure 1/31-11-05-990-801 (Sheet 8 of 10)

EFFECTIVITY
WJE 401-404, 412, 414, 875-879

31-11-05

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBE2 31-799



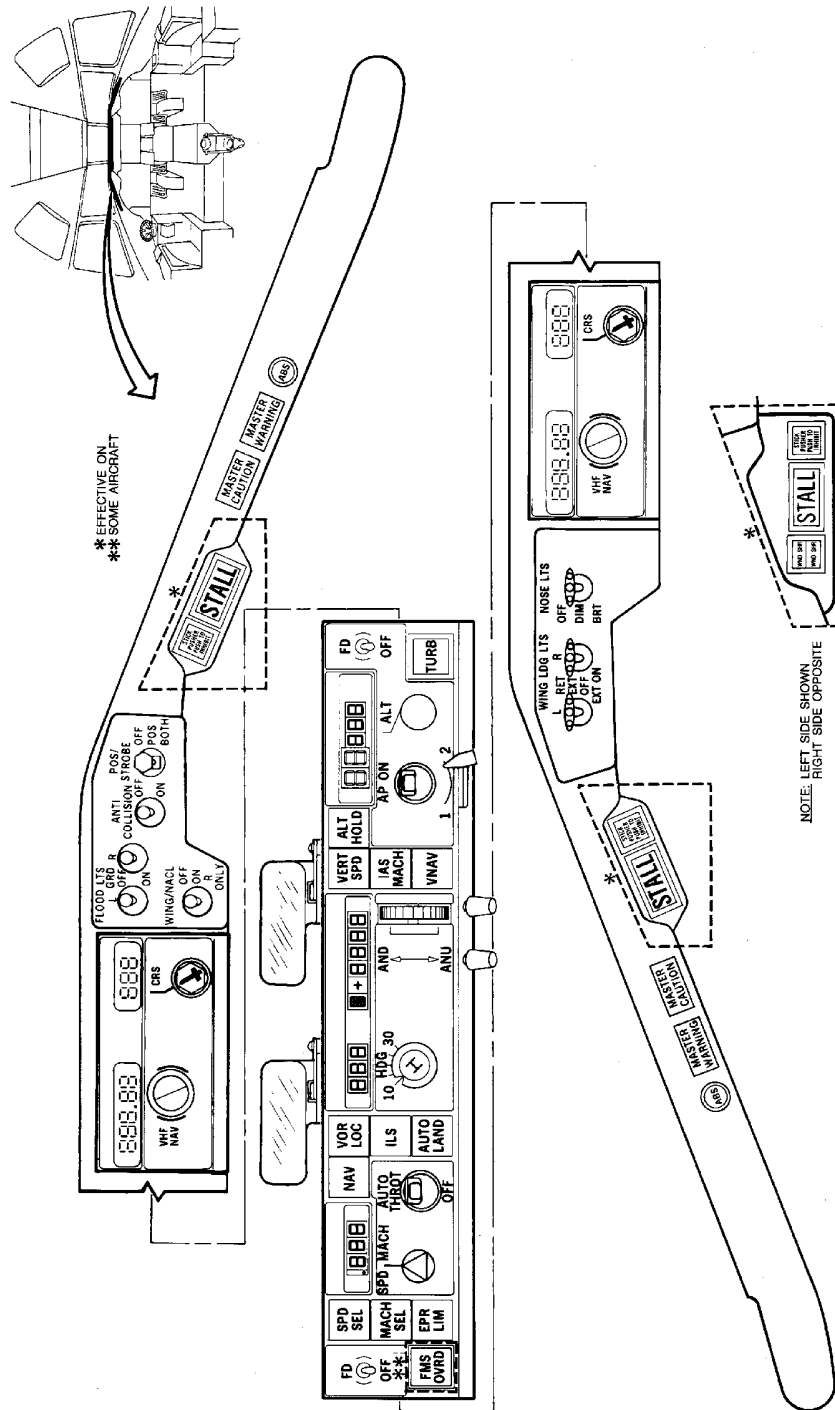
Glareshield
Figure 1/31-11-05-990-801 (Sheet 9 of 10)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-11-05

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BBB2-31-953A



Glareshield
Figure 1/31-11-05-990-801 (Sheet 10 of 10)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

31-11-05

MD-80 AIRCRAFT MAINTENANCE MANUAL

CONTROL WHEEL - DESCRIPTION AND OPERATION

1. General

WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891

- A. There are two control wheels located in the flight compartment, the captain's and first officer's. The first officer's is an opposite of the captain's and contains a primary longitudinal trim control switch, autopilot release switch, and an oxygen mask microphone keying switch. A chart holder is attached to the center post of the control wheel.

WJE 405-411, 880, 881, 883, 884

NOTE: On some aircraft, instead of a primary longitudinal-trim control switch, there is a horizontal stab trim switch. Instead of an oxygen mask microphone keying switch, there is a radio interphone switch.

WJE 401-404, 412, 414, 873-879, 886, 887, 892, 893

- B. There are two control wheels located in the flight compartment, the captain's and first officer's. The first officer's is an opposite of the captain's and contains a horizontal stab trim switch, autopilot release switch, and a radio interphone switch. A chart holder is attached to the center post of the control wheel.

WJE ALL

2. Description

- A. The chart holder is lighted and has a spring clip to retain the necessary charts against the holder back.

3. Operation

- A. Rotate knob on top of holder to operate light. Instructions for operation of switches are included in the specific chapter of the maintenance manual.

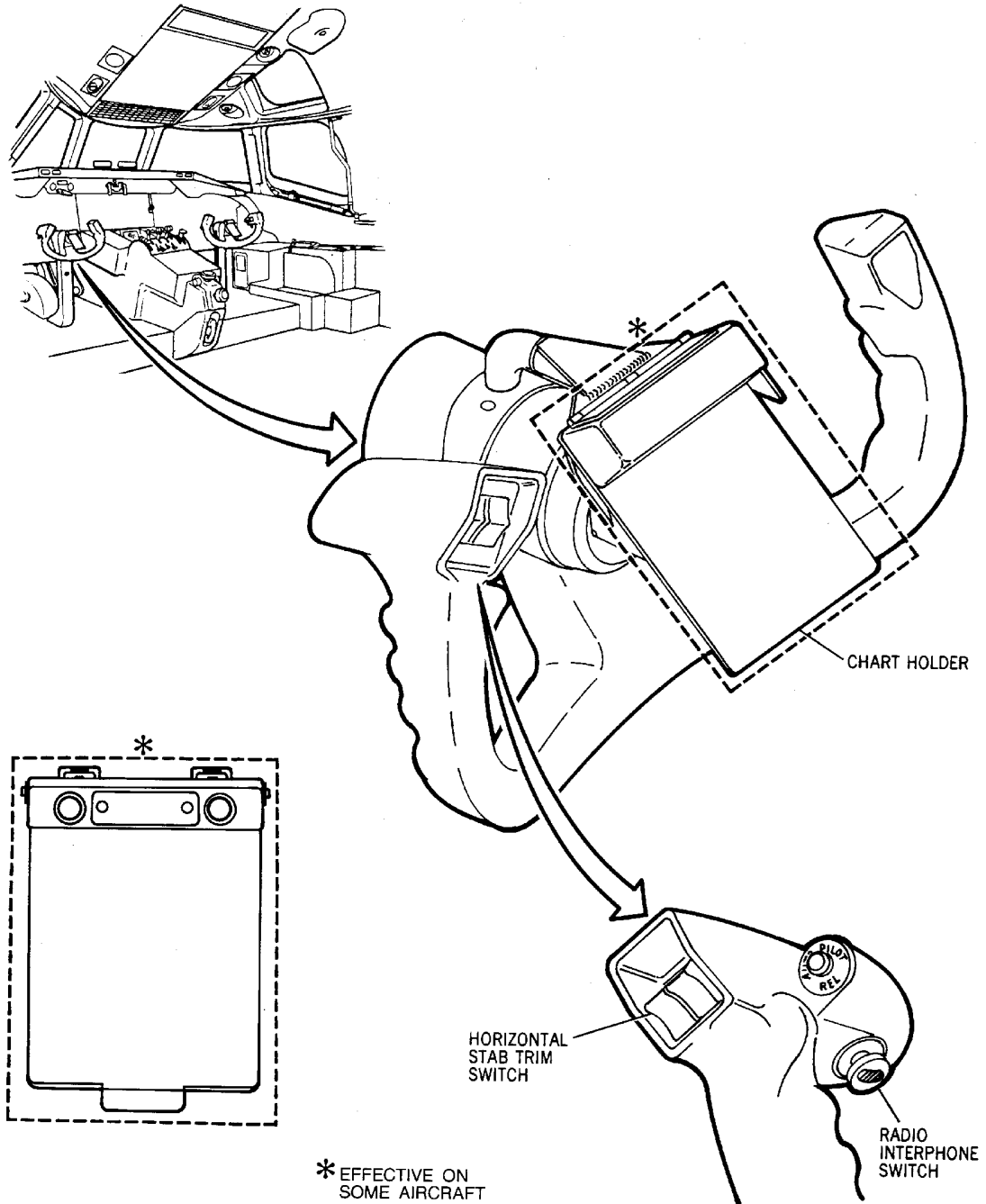
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-11-06

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Control Wheel
Figure 1/31-11-06-990-801 (Sheet 1 of 2)

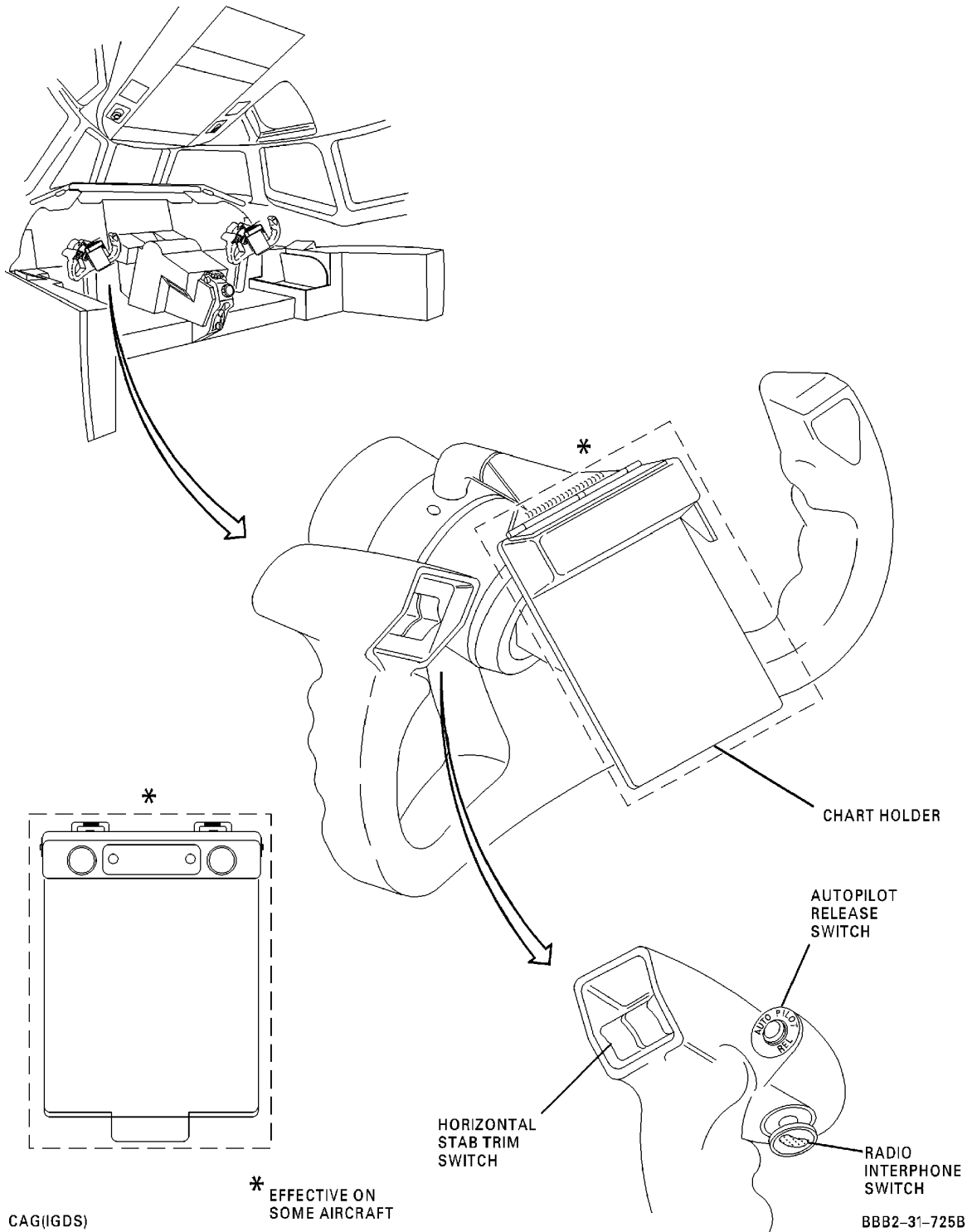
EFFECTIVITY

WJE 401-412, 414-427, 429, 861-866, 868, 869,
871-874, 880, 881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

31-11-06

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Control Wheel
Figure 1/31-11-06-990-801 (Sheet 2 of 2)

EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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ANNUNCIATOR PANEL - DESCRIPTION AND OPERATION

1. General

- A. The annunciator panel is a component of the master warning and caution system.

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

2. Standard Annunciator Panel Description

- A. The annunciator panel displays visual indications to the flight crew in the form of illuminated legends.
- B. A red light is a warning and indicates a situation that requires immediate attention and immediate corrective action to assure safety of passengers, crew, and aircraft.
- C. An amber light is a caution and indicates a situation which requires attention and action; however, the action need not be immediate to assure safety of passengers, crew, airplane, or subsystems. Some of the caution indications also activate the master caution annunciator light.
- D. A blue light is an advisory which indicates a particular system or condition has been activated and is safe.

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

3. Electronic Overhead Annunciator Panel (EOAP) Description

- A. This panel displays information on two LED screens and a Warning/Advisory array of filament bulb annunciators.
- B. The LED screens can contain up to six messages per screen at a given time. The scroll keys can be used to display other caution messages stored off the screen; the up or down arrow scroll key will illuminate when this condition occurs.
- C. The EOAP has eight integral lighted switches (cue lights) located below the caution screens. The cue lights are associated with a particular system of the aircraft.
- D. The EOAP will "Time Out" (both screens, cue switches and scroll arrows blank) when 3 of the 4 combinable messages (R&L OIL PRESS LOW, R&L GEN OFF, R&L HYD PRESS LOW, R&L CSD OIL PRESS LOW) are present for approximately 30 minutes. The EOAP will resume normal operation if any of the following events occur:
- (1) The ANNUN/DIGITAL LTS TEST switch is activated.
 - (2) Any cue switch is activated.
 - (3) A new message is received.
 - (4) An old message is removed.

WJE ALL

4. Operation

- A. Operation of the master warning and caution system is covered in MASTER WARNING AND CAUTION SYSTEM - DESCRIPTION AND OPERATION, PAGEBLOCK 33-12-00/001 of the maintenance manual.

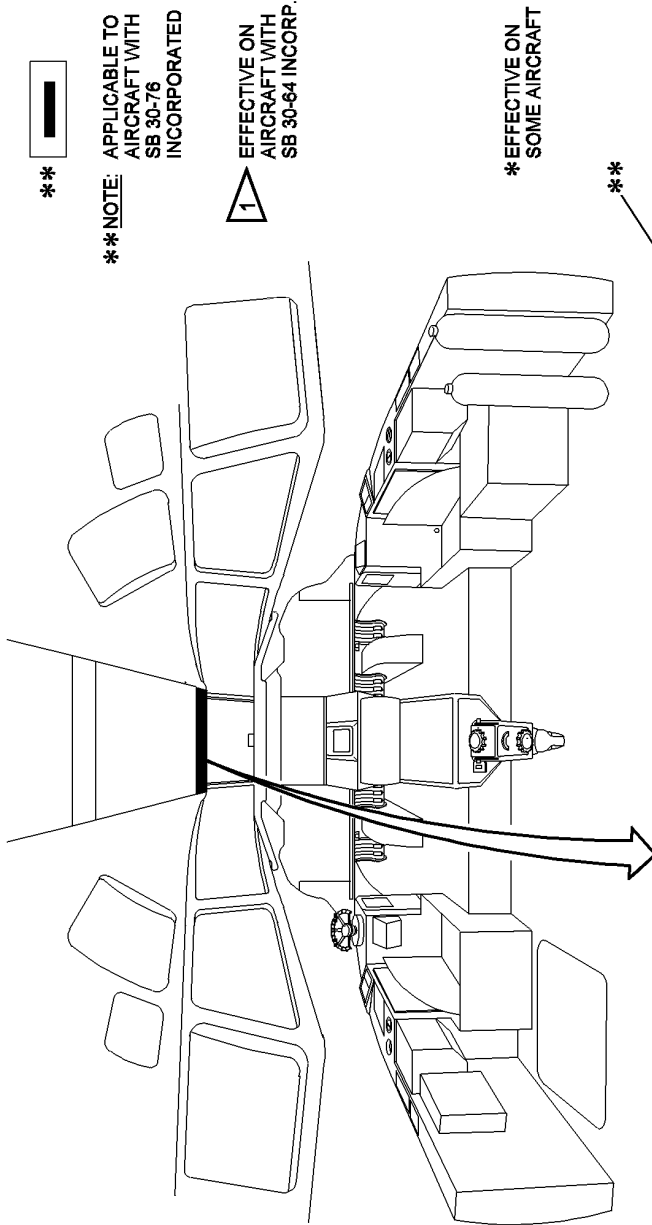
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-12-01

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APU GEN FEEDER FAULT	AC CABINTE LOCKOUT	L GEN ANTI-ICE ON	R ENG ANTI-ICE ON	L FUEL HEAT ON	R FUEL HEAT ON	YAW DAMP OFF	CAMS FAIL	RUDER TRAIL UNRESTRICTED	AUTO SPOILER DO OT USE	ELEVATOR PWR ON	SPOILER FLAP EXTENDED	ICE FOD ALERT	AFT CARGO DOOR
L GEN FEEDER FAULT	R GEN FEEDER FAULT	WING ANTI-ICE ON	TAIL DE-ICE ON	ENG SYNC ON	ART INOP ON	AFT ALX FUEL PUMP PRESS LOW	AUTO BLAT FAIL	BALL INDICATOR FAILURE	RAIN REPELLANT RESERVE IN USE	PARKING BRACES ON	RUDER CONTROL MANUAL	TALCOONE	MID CARGO DOOR
APU GEN OFF	DC TRANSFER BUS OFF	L ICE PROTECT TEMP HIGH	PITOT/STALL HEATER OFF	L START VALVE OPEN	R START VALVE OPEN	CABIN OXYGEN ON	SPOILER DEPLOYED	MACH TRIM INOP	APU OIL TEMP HIGH	L REVERBER ADJUMULATOR LOW	R REVERBER ADJUMULATOR LOW	AFT STAIRWAY DOOR	FWD CARGO DOOR
L AC BUS OFF	R AC BUS OFF	L ICE PROTECT TEMP HIGH	R ICE PROTECT TEMP HIGH	L OIL PRESS LOW	R OIL PRESS LOW	GPVBS FAIL	TAIL COMPT TEMP HIGH	FIRE DETECTOR LOOP	L HYD TEMP HI	L HYD TEMP HI	R HYD TEMP HI	AFT CABIN DOOR	ELECT COMP DOOR
L GEN OFF	R GEN OFF	AIR OIL ICE PROT PRESS ABNORMAL	ICE PROTECT SUPPLY PRESS HI	L OIL PRESS LOW	R OIL PRESS LOW	TAIL FUEL PUMP PRESS LOW	APU FIRE	L AIR COND SUPPLY TEMP HI	L HYD PRESS LOW	L HYD PRESS LOW	R HYD PRESS LOW	AFT GALLEY DOOR	ACCESS COMP DOOR
L CAB OIL PRESS LOW	R CAB OIL PRESS LOW	L ICE PROTECT TEMP LOW	R ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	CABIN ALT	DC EMER BUS OFF	R AIR COND SUPPLY TEMP HI	L AIR COND SUPPLY TEMP HI	L OUTBD ANTI-SKID	R OUTBD ANTI-SKID	FWD STAIRWAY DOOR	ICE FOD ALERT INOP
EMER LIGHT NOT ARMED	DC BUS OFF	L ENG VALVE	R ENG VALVE	L FUEL FILTER PRESS DROP	R FUEL FILTER PRESS DROP	AC EMER BUS OFF	DC EMER BUS OFF	R RADIO FAN OFF	R FLT RECORDER	L INBD ANTI-SKID	R INBD ANTI-SKID	FWD CABIN DOOR	FWD GALLEY DOOR

**

****NOTE:** APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

1

EFFECTIVE ON AIRCRAFT WITH SB 30-64 INCORP.

*EFFECTIVE ON SOME AIRCRAFT

**

Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 1 of 7)

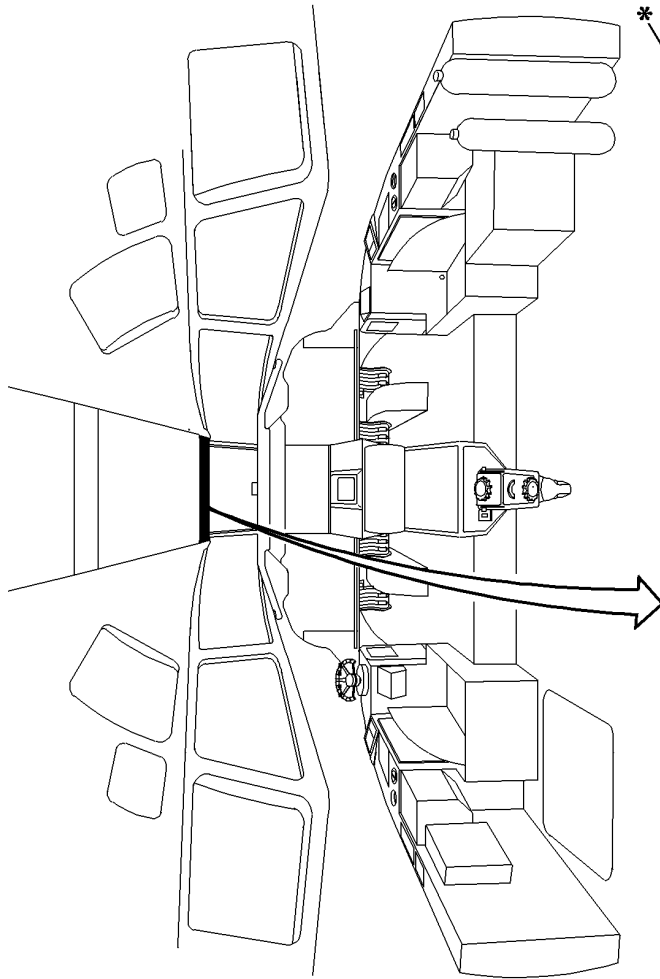
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EFFECTIVITY
WJE 893

31-12-01

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



* [Symbol]

* NOTE:
 APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

1 [Symbol] EFFECTIVE ON AIRCRAFT WITH SB 30-64 INCORP.

APU GEN FEEDER FAULT	L GEN FEEDER FAULT	R GEN FEEDER FAULT	AC BATTERY LOCKOUT	L ENG ANTI-ICE ON	WING ANTI-ICE ON	R ENG ANTI-ICE ON	L FUEL HEAT ON	ENG SYNC ON	R FUEL HEAT ON	YAW DAMP OFF	CAWS FAIL	RUDDER TRAIL UNRESTRICTED	AUTO SPOILER DO NOT USE	ELEVATOR FAULT ON	SPOILER FLAP EXTENDED	ICE FOD ALERT	AFT CARGO DOOR
L GEN FEEDER FAULT	L GEN FEEDER FAULT	R GEN FEEDER FAULT	DC TRANSFER BUS OFF	ENG ANTI-ICE ON	WING ANTI-ICE ON	R ENG ANTI-ICE ON	R FUEL HEAT ON	ART INOP	R FUEL HEAT ON	APU AUX FUEL PUMP PRESS LOW	AUTO SLAT FAIL	STALL INDICATION FAILURE	RAIN REFUELMENT RESERVE IN USE	PARKING BRAKES ON	RUDDER CONTROL MANUAL	TAIL CONE	MID CARGO DOOR
APU GEN OFF	L AC BUS OFF	R AC BUS OFF	L ICE PROTECT TEMP HIGH	L BTART VALVE OPEN	R BTART VALVE OPEN	R BTART VALVE OPEN	R OIL STRAINER CLOGGING	R OIL STRAINER CLOGGING	R OIL STRAINER CLOGGING	GPWS FAIL	SPOILER DEPLOYED	MACH TRIM INOP	APU OIL TEMP HIGH	L HYD TEMP HI	R HYD TEMP HI	AFT STARWAY DOOR	FWD CARGO DOOR
L AC BUS OFF	L GEN OFF	R GEN OFF	ICE PROTECT TEMP LOW	L OIL PRESS LOW	L OIL PRESS LOW	R OIL PRESS LOW	R OIL PRESS LOW	R OIL PRESS LOW	R OIL PRESS LOW	APU OIL TEMP HIGH	TAIL COMPT TEMP HIGH	FIRE DETECTOR LOOP	APU OIL PRESS LOW	L HYD PRESS LOW	R HYD PRESS LOW	AFT CABIN DOOR	ELECT COMP DOOR
L CSD OIL EMER LIGHT NOT ARMED	L GEN OFF	R GEN OFF	L ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	CABIN ALT	APU FIRE	L AIR COND SUPPLY TEMP HI	APU OIL PRESS LOW	L HYD PRESS LOW	R HYD PRESS LOW	AFT GALLEY DOOR	ACCESS COMP DOOR
L CSD OIL EMER LIGHT NOT ARMED	L GEN OFF	R GEN OFF	L ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	DC EMER BUS OFF	DC EMER BUS OFF	RADIO FAN OFF	L AIR COND SUPPLY TEMP HI	L OUTFD ANTI-SKID	R OUTFD ANTI-SKID	FWD STARWAY DOOR	ICE FOD ALERT INOP
L CSD OIL EMER LIGHT NOT ARMED	L GEN OFF	R GEN OFF	L ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	AC EMER BUS OFF	DC EMER BUS OFF	RADIO FAN OFF	L AIR COND SUPPLY TEMP HI	L INBD ANTI-SKID	R INBD ANTI-SKID	FWD CABIN DOOR	FWD GALLEY DOOR

Overhead Annunciator Panel
 Figure 1/31-12-01-990-801 (Sheet 2 of 7)

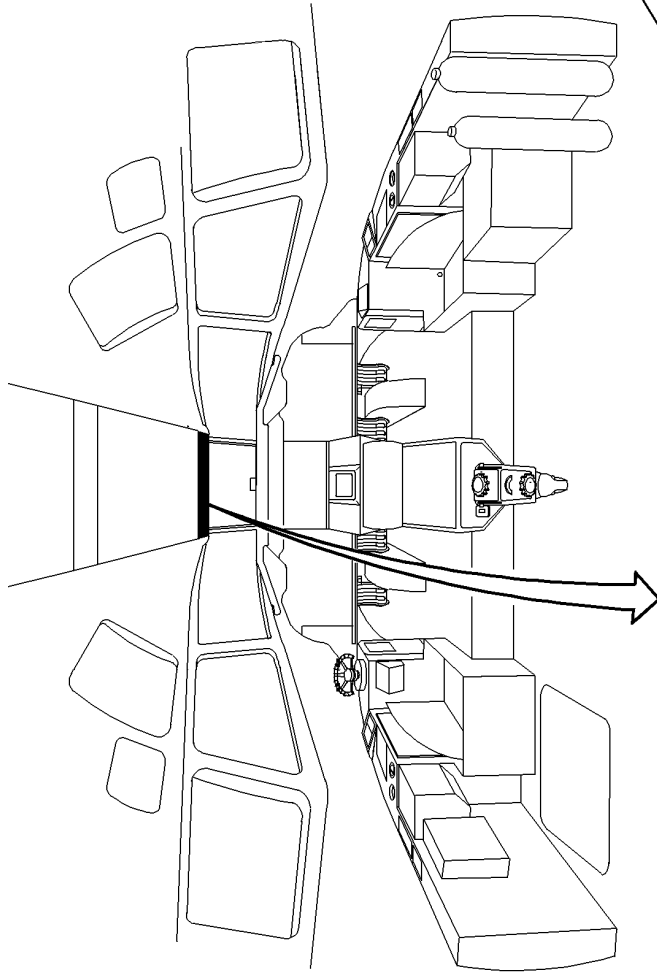
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EFFECTIVITY
 WJE 873, 874

TP-80MM-WJE

31-12-01

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* [Symbol]

* NOTE:

APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

1 [Symbol]

EFFECTIVE ON AIRCRAFT WITH SB 30-84 INCORP.

[Symbol]	AC CROSS-TIE LOCKOUT	L ENG ANTI-ICE ON	R ENG ANTI-ICE ON	L FUEL HEAT ON	R FUEL HEAT ON	YAW DAMP OFF	CAWS FAIL	RUDER TRAVEL UNRESTRICTED	AUTO SPOILER DO NOT USE	ELEVATOR PWR EXTENDED	ICE FOD ALERT	AFT CARGO DOOR
[Symbol]	DC TRANSFER BUS OFF	WING ANTI-ICE ON	TAIL DE-ICE ON	ENG SYNC ON	ART INOP	AFT AUX FUEL PUMP PRESS LOW	[Symbol]	PUSHER FAIL	PUSHER DUMPED	RUDER CONTROL MANUAL	TAILCONE	MID CARGO DOOR
APU GEN OFF	[Symbol]	[Symbol]	PITOT/STALL HEATER OFF	L START VALVE OPEN	R START VALVE OPEN	CABIN OXYGEN ON	AUTO SLAT FAIL	STALL INDICATION FAILURE	RAIN REFUEL RESERVE IN USE	R REVERSE ACCUMULATOR LOW	AFT STAIRWAY DOOR	FWD CARGO DOOR
L AC BUS OFF	L ICE PROTECT TEMP HIGH	L ICE PROTECT TEMP LOW	R ICE PROTECT TEMP HIGH	L OIL STRAINER CLOGGING	R OIL STRAINER CLOGGING	GPWS FAIL	SPOILER DEPLOYED	MACH TRIM INOP	APU OIL TEMP HIGH	R HYD TEMP HI	AFT CABIN DOOR	ELECT COMP DOOR
L GEN OFF	AIRSOURCE PROT PRESS ABNORMAL	L ICE PROTECT TEMP LOW	ICE PROTECT SUPPLY PRESS HI	L OIL PRESS LOW	R OIL PRESS LOW	RAP AUX FUEL PUMP PRESS LOW	TAIL COMPT TEMP HIGH	FIRE DETECTOR LOOP	L HYD PRESS LOW	R HYD PRESS LOW	AFT GALLEY DOOR	ACCESS COMP DOOR
L CSD OIL	L ICE PROTECT TEMP LOW	L FUEL FILTER PRESS DROP	R ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	CABIN ALT	APU FIRE	RAIR COND SUPPLY TEMP HI	L OILBD ANTI-SKID	R OILBD ANTI-SKID	FWD STAIRWAY DOOR	ICE FOD ALERT INOP
EMER LIGHT NOT ARMED	L ENG VALVE	R FUEL FILTER PRESS DROP	R ENG VALVE	R FUEL FILTER PRESS DROP	R FUEL FILTER PRESS DROP	AC EMER BUS OFF	DC EMER BUS OFF	RADIO FAN OFF	L INBD ANTI-SKID	R INBD ANTI-SKID	FWD CABIN DOOR	FWD GALLEY DOOR

Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 3 of 7)

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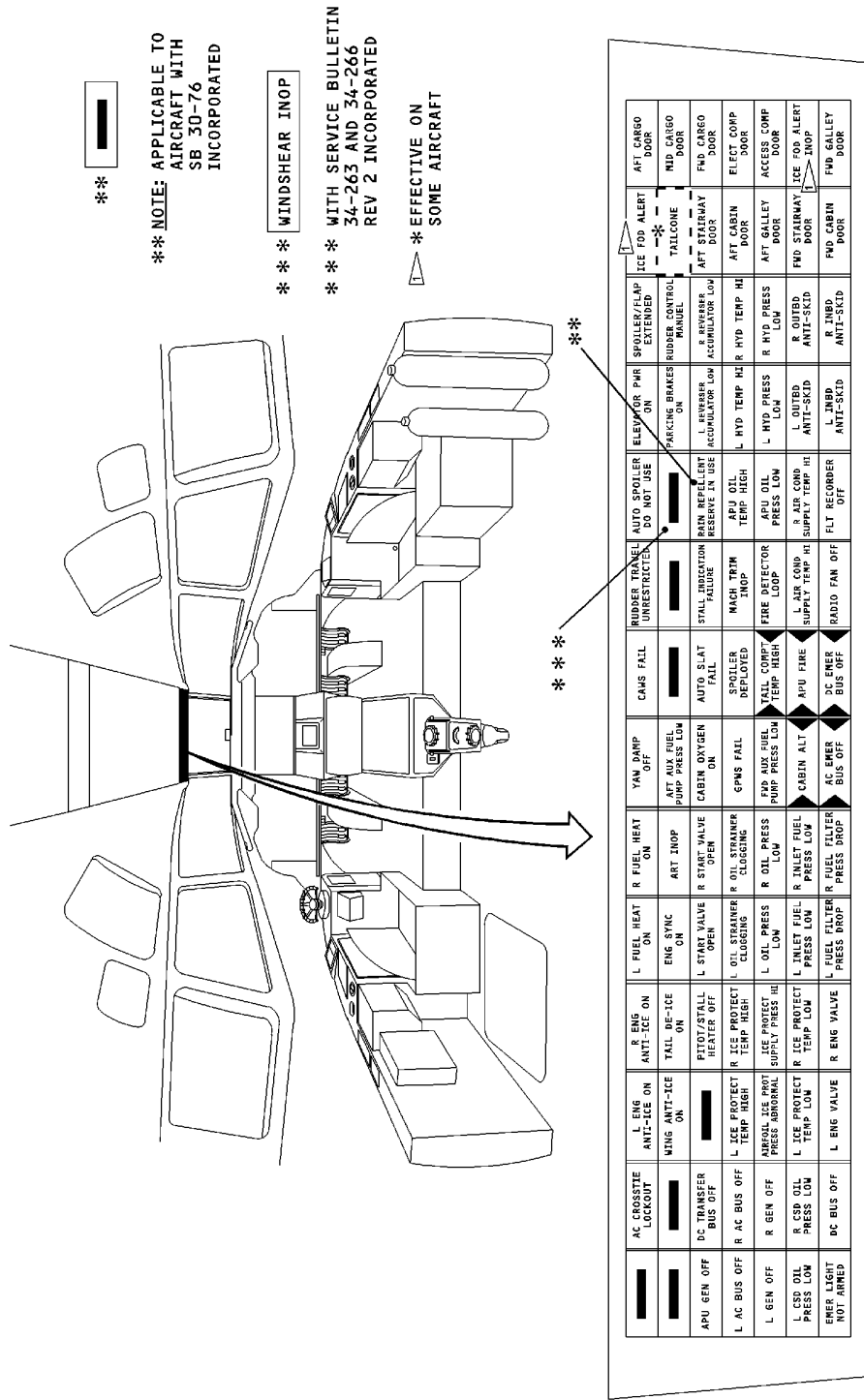
EFFECTIVITY
WJE 892

TP-80MM-WJE

31-12-01

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CAG(IGDS)

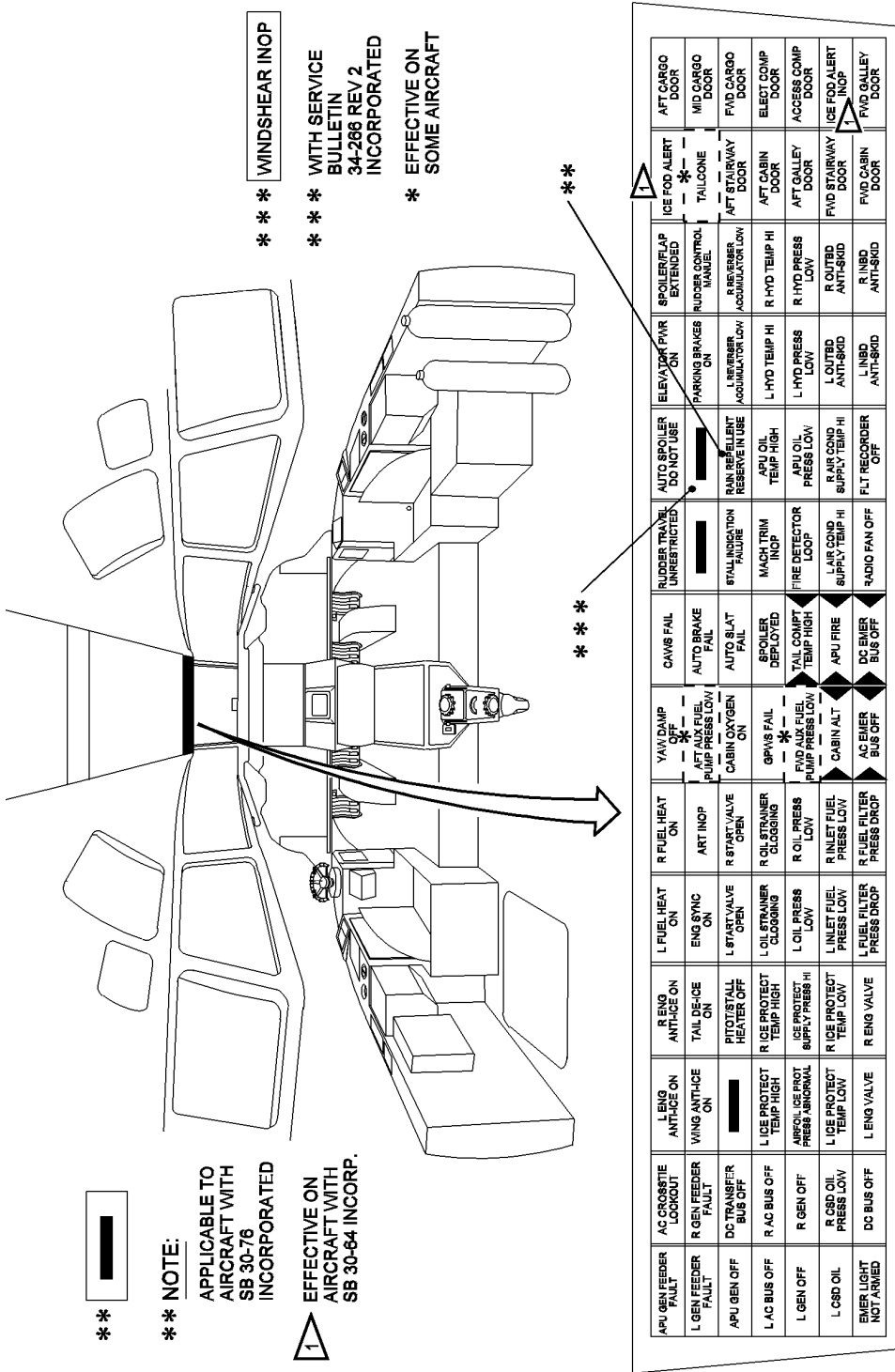
Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 4 of 7)

EFFECTIVITY
WJE 405, 409, 884

TP-80MM-WJE

31-12-01

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Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 5 of 7)

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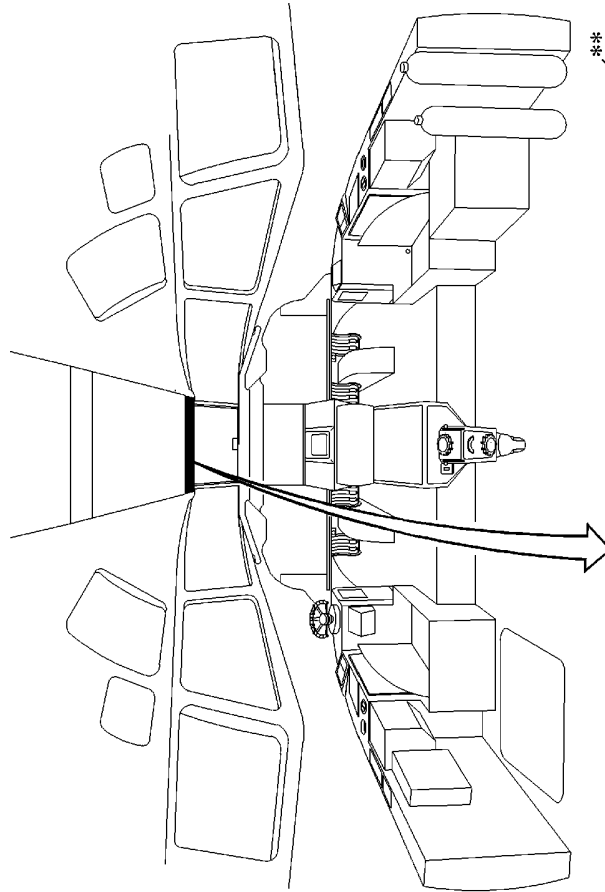
EFFECTIVITY
WJE 881, 883

TP-80MM-WJE

31-12-01

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**
**NOTE: APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

**EFFECTIVE ON SOME AIRCRAFT

CENTER FUEL PRESS LO TRANS UNDER	AC CROSSFIE LOCKOUT FUEL LOW	L ENG ANTI-ICE ON	R ENG ANTI-ICE ON	L FUEL HEAT ON	R FUEL HEAT ON	YAW DAMP OFF	CAMS FAIL	RUNNER TRAVEL UNRESTRICTED	AUTO SPOILER DO NOT USE	ELEVATOR ON	SHOULDER/SLAP EXTENDED	ICE FOD ALERT	AFT CARGO DOOR
APU GEN OFF	DC TRANSFER BUS OFF	WING ANTI-ICE ON	TAIL DE-ICE ON	ENG SYNC ON	ART INOP ON	AFT FUEL PUMP PRESS LOW	AUTO BRAKE FAIL	ANES BASIC	ENG USE HIGH	PARKING BRAKES ON	RUBBER CONTROL MANUEL	TAILCONE	MID CARGO DOOR
L AC BUS OFF	R AC BUS OFF	WING ANTI-ICE ON	PTOY/STALL HEATER OFF	L START VALVE OPEN	R START VALVE OPEN	CABIN OXYGEN ON	AUTO SLAT FAIL	STALL INDICATION FAILURE	MAIN REFUEL PRESERVE IN USE	L HYD TEMP HI ACCUMULATOR LOW	R HYD TEMP HI ACCUMULATOR LOW	AFT STAIRWAY DOOR	FWD CARGO DOOR
L GEN OFF	R GEN OFF	WING ANTI-ICE ON	R ICE PROTECT TEMP HIGH	L OIL STRAINER CLOGGING	R OIL STRAINER CLOGGING	GPMS FAIL	SPOILER DEPLOYED	MAIN TRIM INOP	APU OIL TEMP HIGH	L HYD TEMP HI R HYD TEMP HI	R HYD TEMP HI R HYD TEMP HI	AFT CABIN DOOR	ELECT CARGO DOOR
L CSD OIL	R CSD OIL	L ICE PROTECT TEMP LOW	R ICE PROTECT TEMP LOW	L OIL PRESS LOW	R OIL PRESS LOW	WING CENTER TEMP HIGH	WING CENTER TEMP HIGH	FIRE DETECTOR LOOP	APU OIL PRESS LOW	L HYD PRESS LOW	R HYD PRESS LOW	AFT GALLEY DOOR	ACCESS CARGO DOOR
EMER LIGHT NOT ARMED	BC BUS OFF	L ICE PROTECT TEMP LOW	R ICE PROTECT TEMP LOW	L FUEL FILTER PRESS DROP	R FUEL FILTER PRESS DROP	WING CENTER TEMP HIGH	WING CENTER TEMP HIGH	FIRE DETECTOR SUPPLY TEMP HI	APU OIL SUPPLY TEMP HI	L HYD PRESS LOW	R HYD PRESS LOW	FWD STAIRWAY DOOR	ICE FOD ALERT
		L ENG VALVE	R ENG VALVE	L FUEL FILTER PRESS DROP	R FUEL FILTER PRESS DROP	WING CENTER TEMP HIGH	WING CENTER TEMP HIGH	RADIO FAN OFF	FLT RECORDER OFF	L INOP ANTI-ICED	R INOP ANTI-ICED	FWD CABIN DOOR	FWD GALLEY DOOR

BBB2-31-652E

CAG(IGDS)

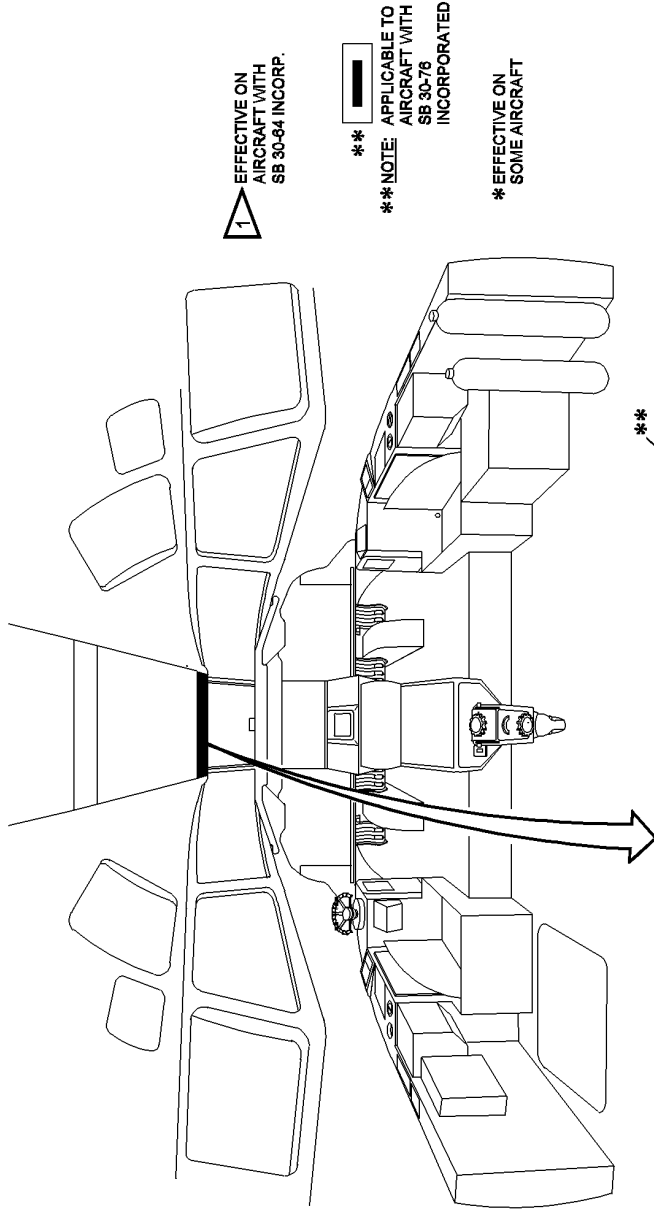
Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 6 of 7)

EFFECTIVITY
WJE 407, 408, 411, 880

TP-80MM-WJE

31-12-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



1 EFFECTIVE ON AIRCRAFT WITH SB 30-64 INCORP.

** APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

* EFFECTIVE ON SOME AIRCRAFT

AC CDSBTE LOCKOUT	L ENG ANTI-ICE ON	R ENG ANTI-ICE ON	L FUEL HEAT ON	R FUEL HEAT ON	YAW DAMP OFF	CAWS FAIL	RUDDER TRAVEL UNRESTRICTED	AUTO SPOILER DO NOT USE	ELEVATOR PWR ON	ICE FOD ALERT	AFT CARGO DOOR
DC TRANSFER BUS OFF	WING ANTI-ICE ON	TAIL DE-ICE ON	ART INOP	ENG SYNC FAIL	ENG SYNC ON	AUTO BRAKE FAIL	RAIN REFILL PUMP PRESS LOW	AFT AUX FUEL PUMP PRESS LOW	PARKING BRAKES ON	TALLOONE	MID CARGO DOOR
L AC BUS OFF	L ICE PROTECT TEMP HIGH	PITOT/STALL HEATER OFF	L START VALVE OPEN	CABIN OXYGEN ON	AUTO SLAT FAIL	AUTO SLAT FAIL	FWD AUX FUEL PUMP PRESS LOW	SPEED BRAKE EXTENDED	L REVERSER ACCUMULATOR LOW	AFT STAIRWAY DOOR	FWD CARGO DOOR
L GEN OFF	AIRCRAFT ICE PROT PRESS ABNORMAL	R ICE PROTECT TEMP HIGH	L OIL STRAINER CLOGGING	GPWS FAIL	SPOILER DEPLOYED	SPOILER DEPLOYED	MACH TRIM INOP	APU OIL TEMP HIGH	R HYD TEMP HI	AFT CABIN DOOR	ELECT COMP DOOR
L CSD OIL	L ICE PROTECT TEMP LOW	ICE PROTECT SUPPLY PRESS HI	L OIL PRESS LOW	STALL INDICATION FAILURE	TAIL COMPT TEMP HIGH	TAIL COMPT TEMP HIGH	FIRE DETECTOR LOOP	APU ON PRESS LOW	L HYD PRESS LOW	AFT GALLEY DOOR	ACCESS COMP DOOR
EMER LIGHT NOT ARMED	R ICE PROTECT TEMP LOW	R ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	CABIN ALT	APU FIRE	APU FIRE	L AIR COND SUPPLY TEMP HI	R AIR COND SUPPLY TEMP HI	L HYD PRESS LOW	FWD STAIRWAY DOOR	ICE FOD ALERT INOP
	L ENG VALVE	R ENG VALVE	R FUEL FILTER PRESS DROP	AC EMER BUS OFF	DC EMER BUS OFF	DC EMER BUS OFF	RADIO RECORDER OFF	FLT RECORDER OFF	L INBD ANTI-SKID	FWD CABIN DOOR	FWD GALLEY DOOR

Overhead Annunciator Panel
Figure 1/31-12-01-990-801 (Sheet 7 of 7)

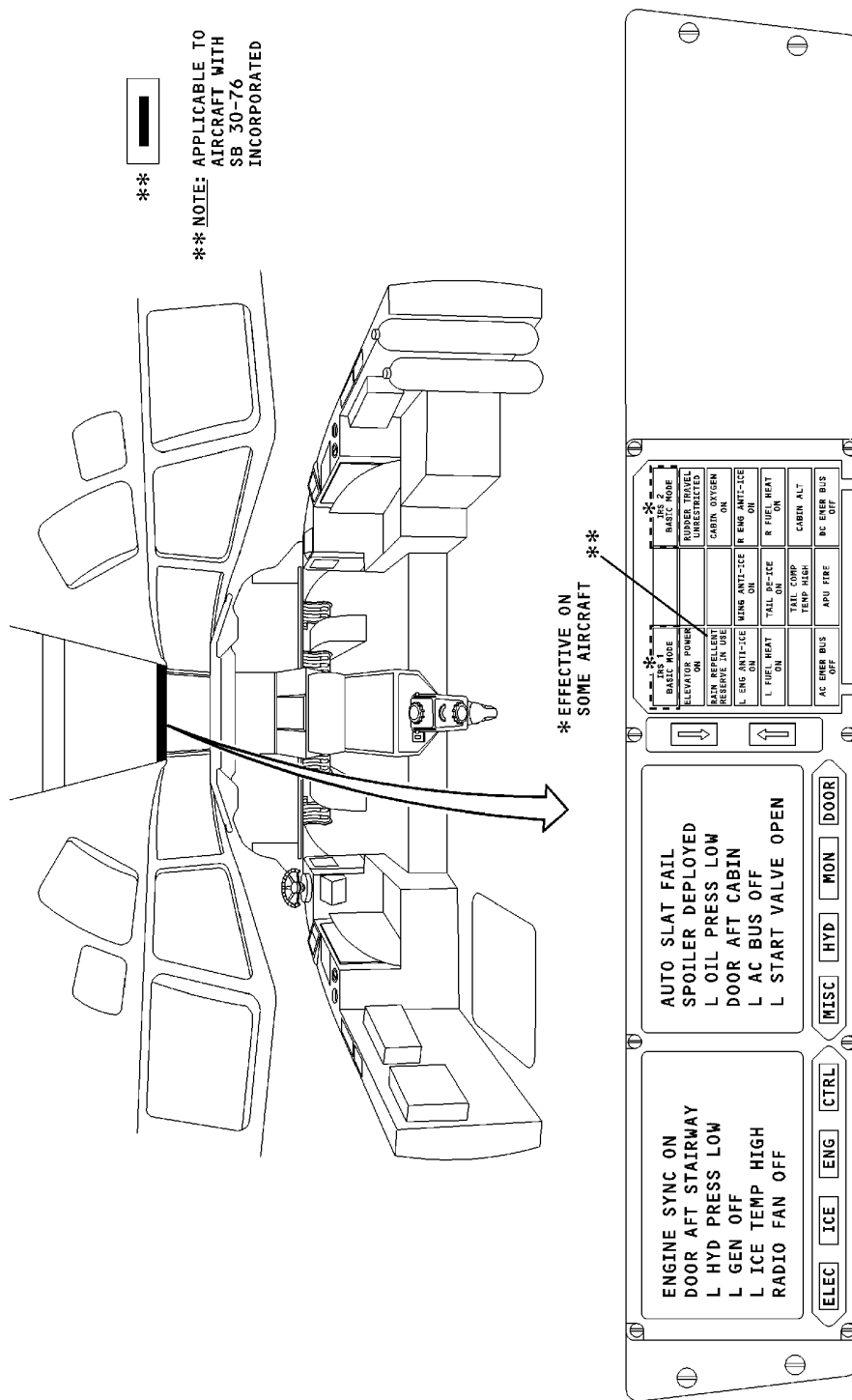
BBB2-31-659E
S0000146394V1

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-12-01

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1108A

CAG(IGDS)

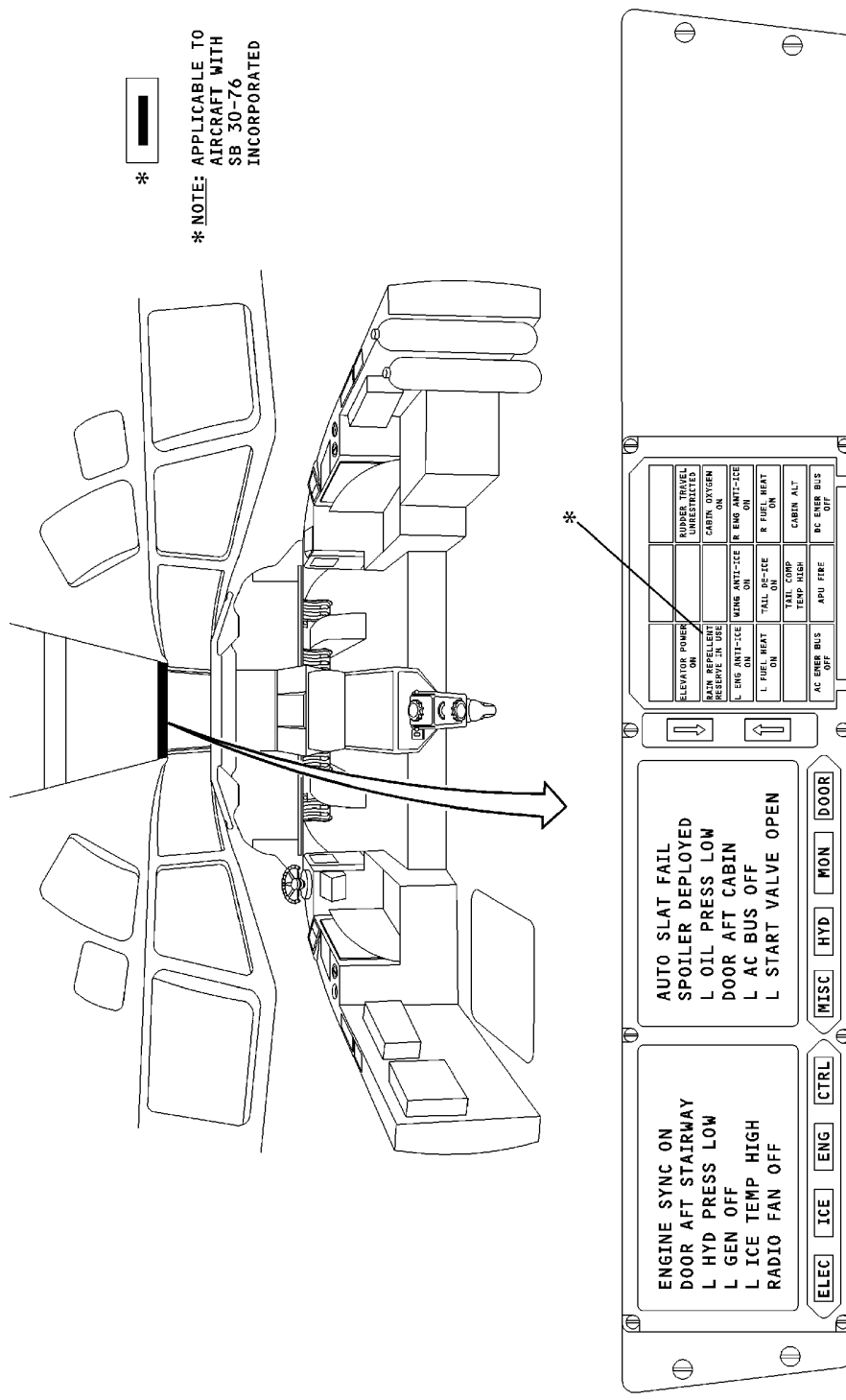
**Electronic Overhead Annunciator Panel
Figure 2/31-12-01-990-859 (Sheet 1 of 4)**

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

TP-80MM-WJE

31-12-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



*
* NOTE: APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

BBB2-31-1088A

CAG(IGDS)

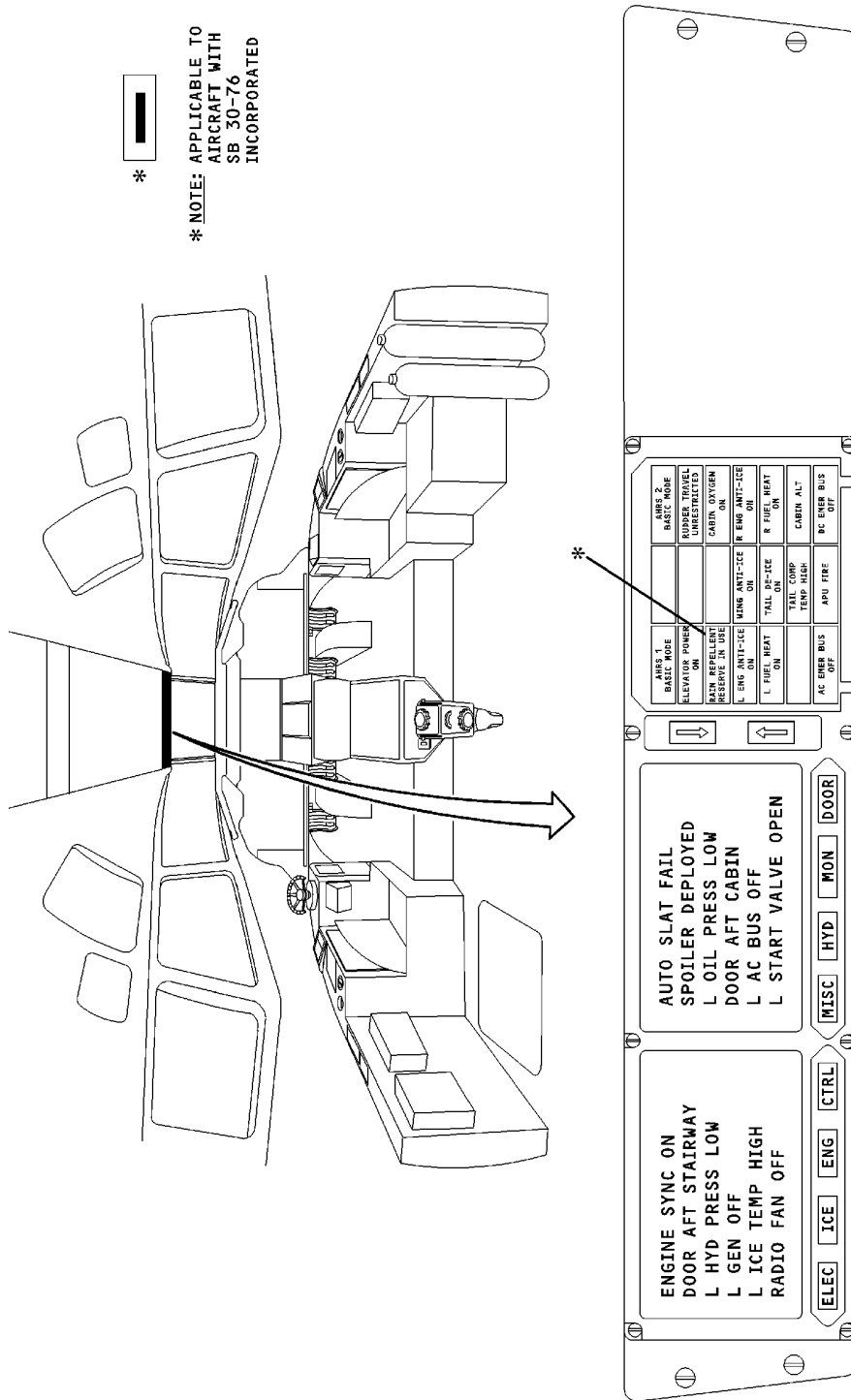
Electronic Overhead Annunciator Panel
Figure 2/31-12-01-990-859 (Sheet 2 of 4)

EFFECTIVITY
WJE 410

TP-80MM-WJE

31-12-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



*  *
 * NOTE: APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

BBB2-31-865A

CAG(IGDS)

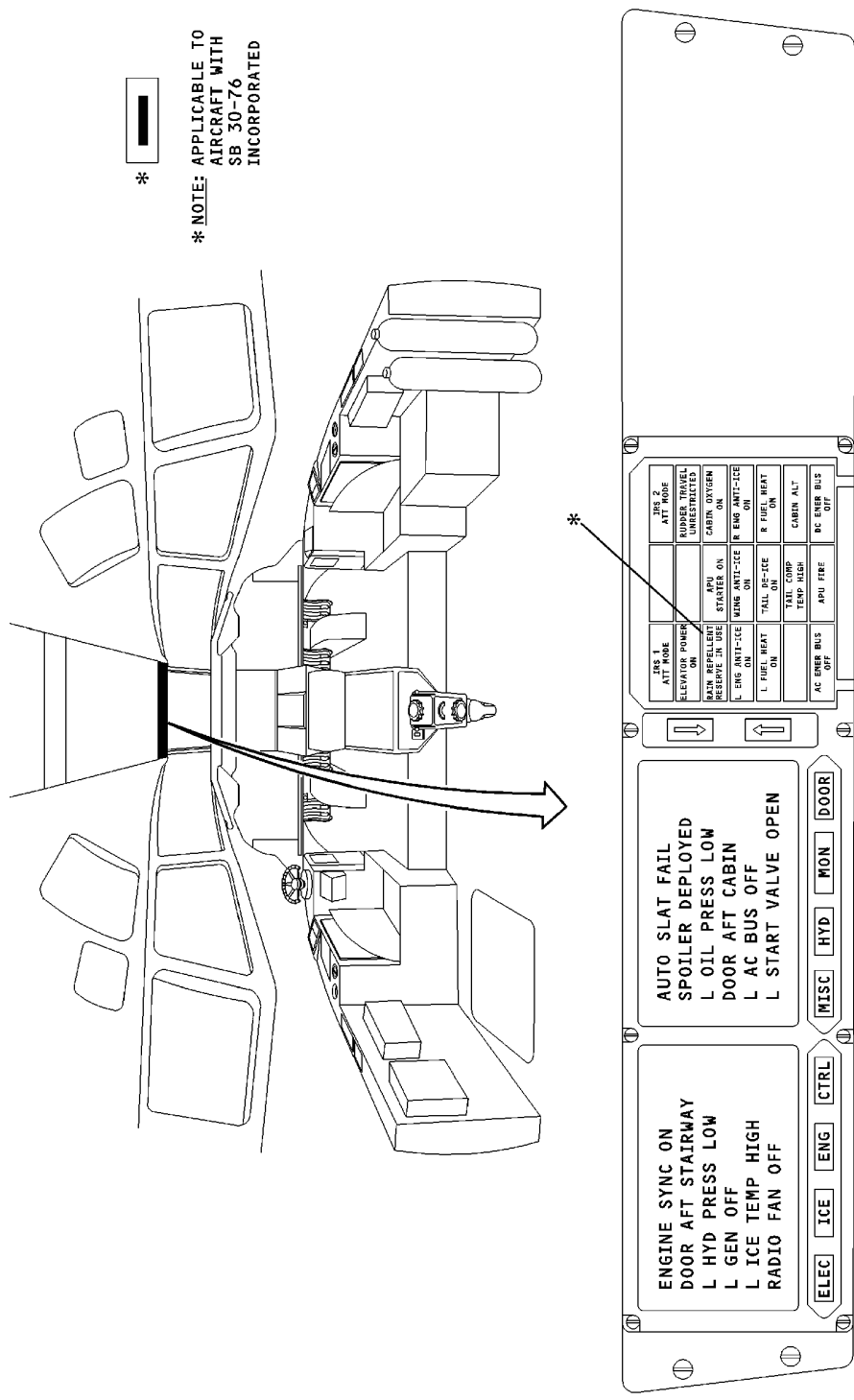
Electronic Overhead Annunciator Panel
 Figure 2/31-12-01-990-859 (Sheet 3 of 4)

EFFECTIVITY
 WJE 406, 886, 887

TP-80MM-WJE

31-12-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



*
* NOTE: APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED

BBB2-31-1086A

Electronic Overhead Annunciator Panel
Figure 2/31-12-01-990-859 (Sheet 4 of 4)

CAG(IGDS)

EFFECTIVITY
WJE 401-404, 412, 414, 875-879

TP-80MM-WJE

31-12-01

MD-80 AIRCRAFT MAINTENANCE MANUAL

FORWARD OVERHEAD SWITCH PANEL - DESCRIPTION AND OPERATION

1. General

A. The forward overhead switch panel is a unit of the overhead panel located in the flight compartment.

2. Description

A. The forward overhead switch panel provides a mounting base for individual panels containing switches and indicators grouped by system applicability. A master warning and caution annunciator panel is installed in this panel. For details of the annunciator, refer to ANNUNCIATOR PANEL - DESCRIPTION AND OPERATION, PAGEBLOCK 31-12-01/001.

3. Operation

WJE 407, 408, 411, 880

CAUTION: USE CARE WHEN LOWERING OVERHEAD SWITCH PANEL TO PREVENT DAMAGE TO HUD DISPLAY OPTICS. LOWER CAPTAIN'S UNIT BEFORE UNLATCHING LANYARD ON PANEL.

WJE ALL

A. Instructions for operation of switches and indicators on the forward overhead switch panel are included in the specific switch or indicator system chapter of the maintenance manual.

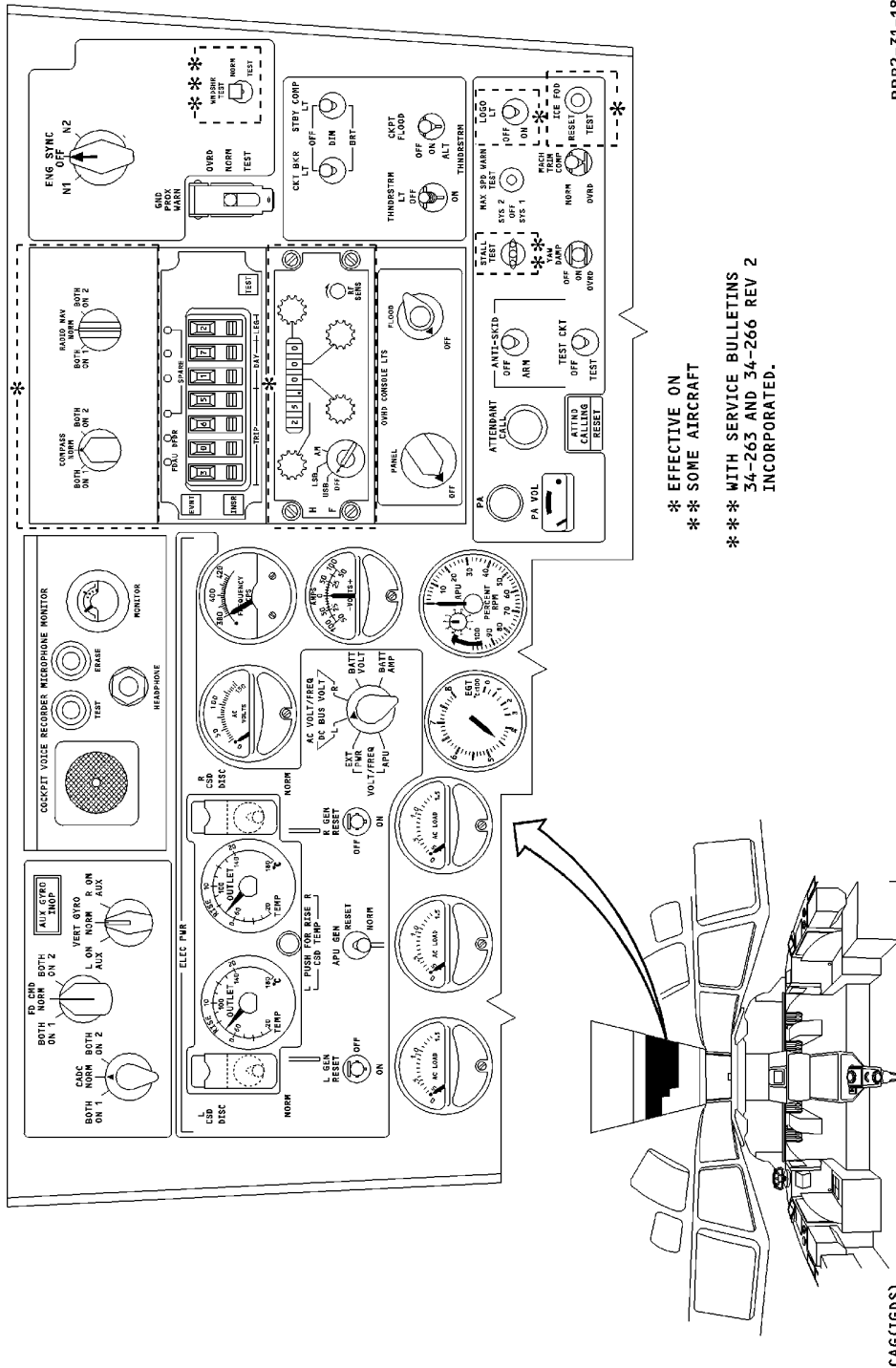
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-12-02

Page 1
Feb 01/2015

MD-80 AIRCRAFT MAINTENANCE MANUAL



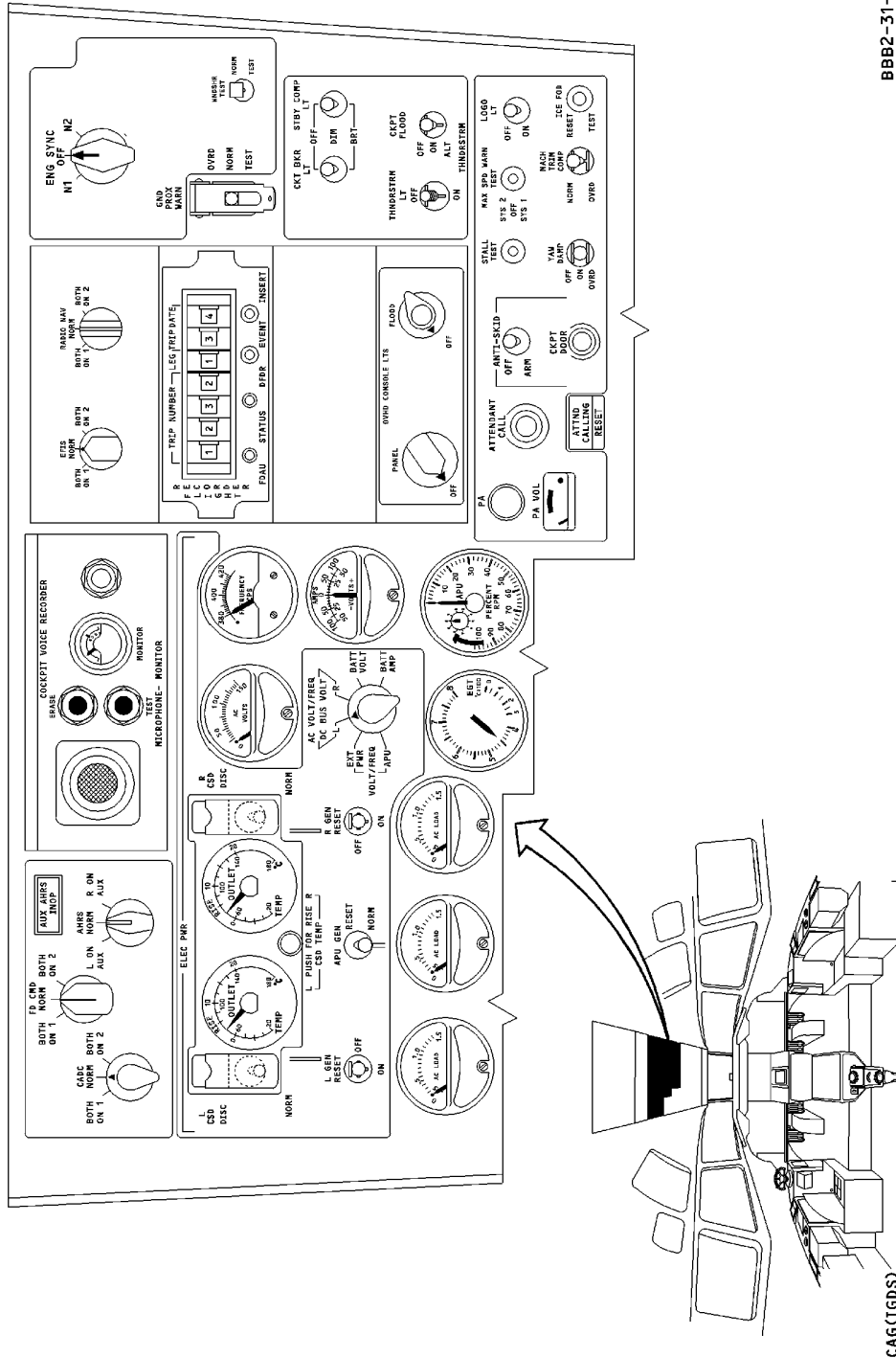
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Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 1 of 12)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1822

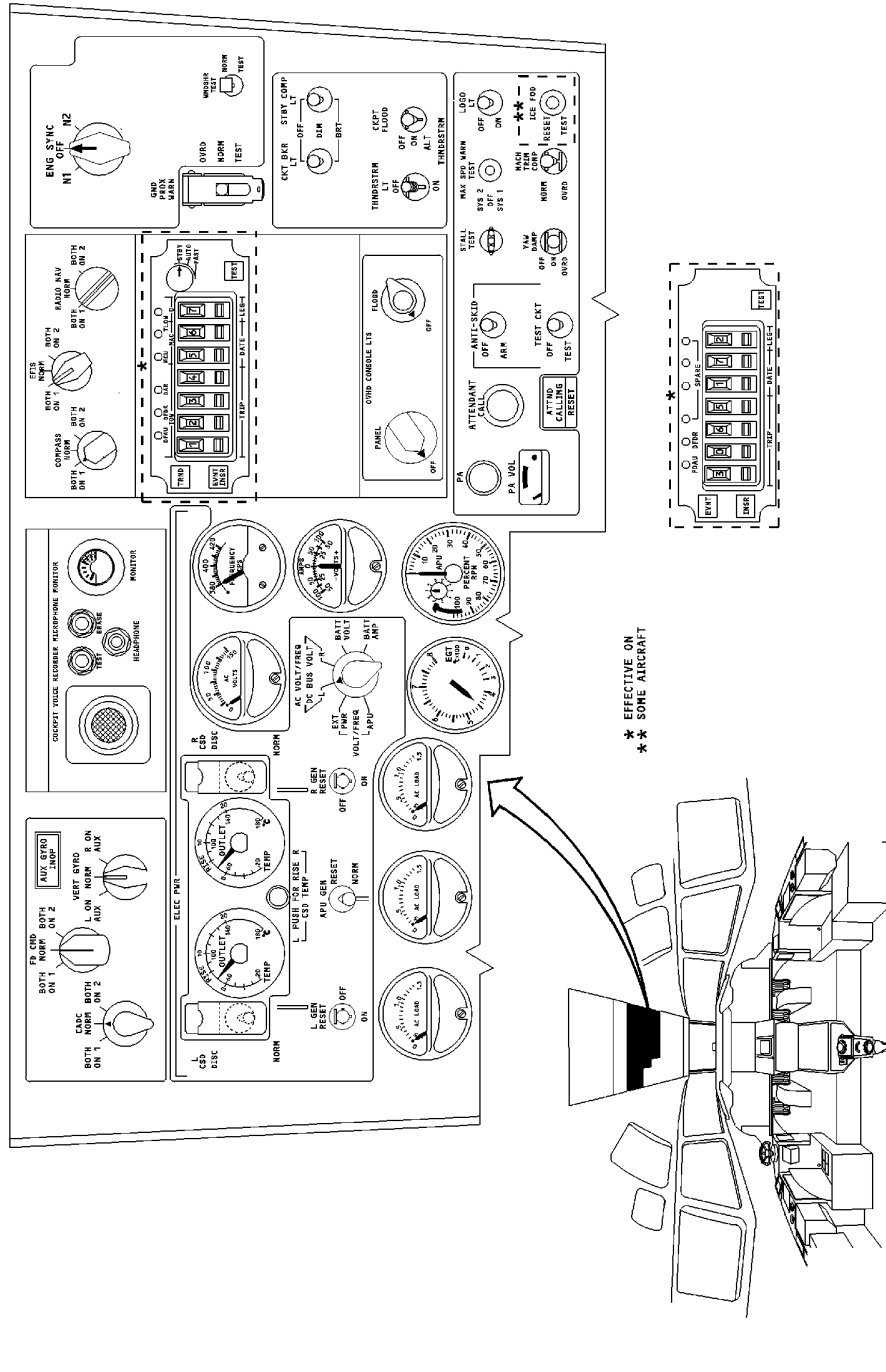
Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 2 of 12)

EFFECTIVITY
WJE 406

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-1819



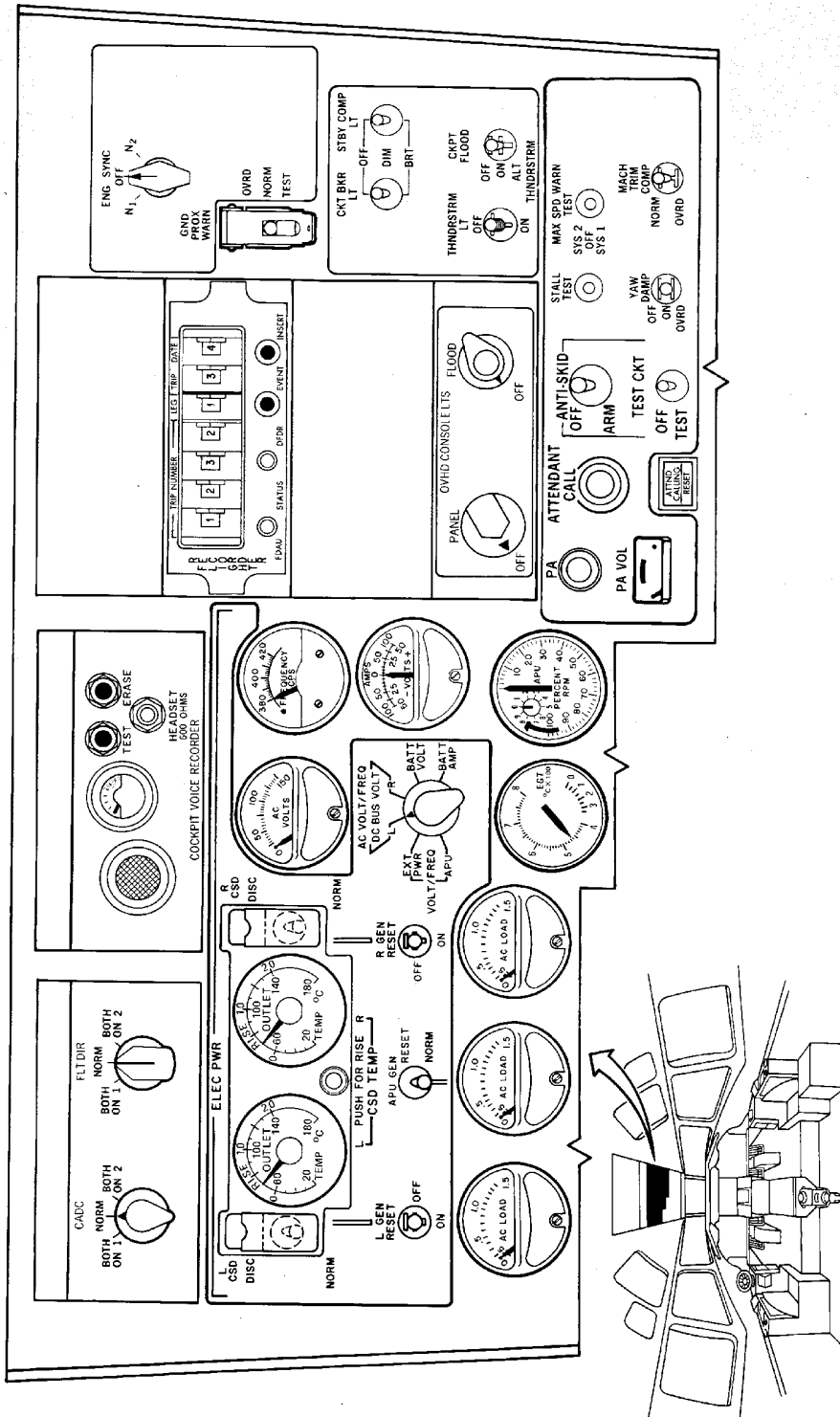
Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 3 of 12)

EFFECTIVITY
WJE 410

31-12-02

TP-80MM-WJE

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



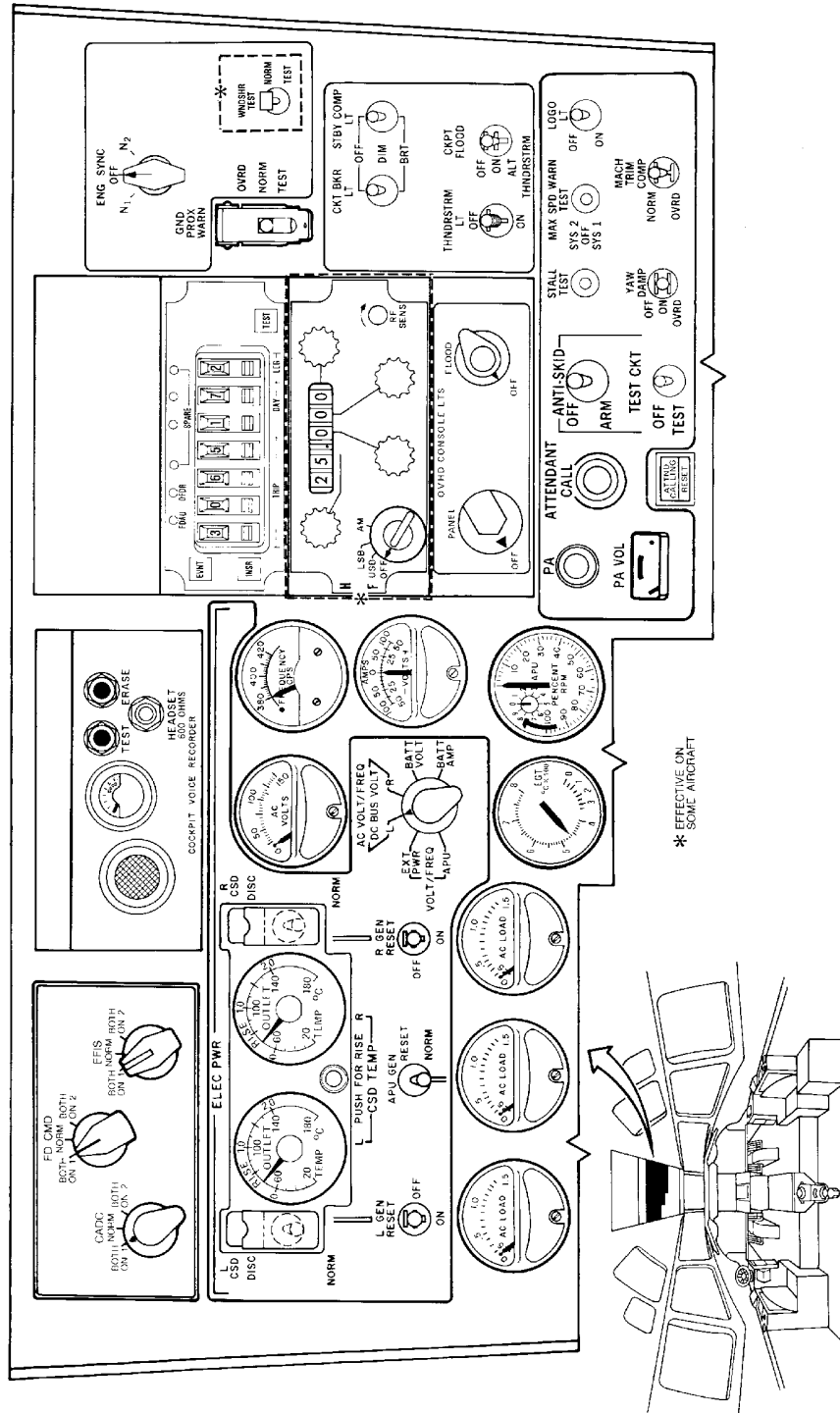
BB82-31-606A

**Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 4 of 12)**

EFFECTIVITY
WJE 873, 874

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL



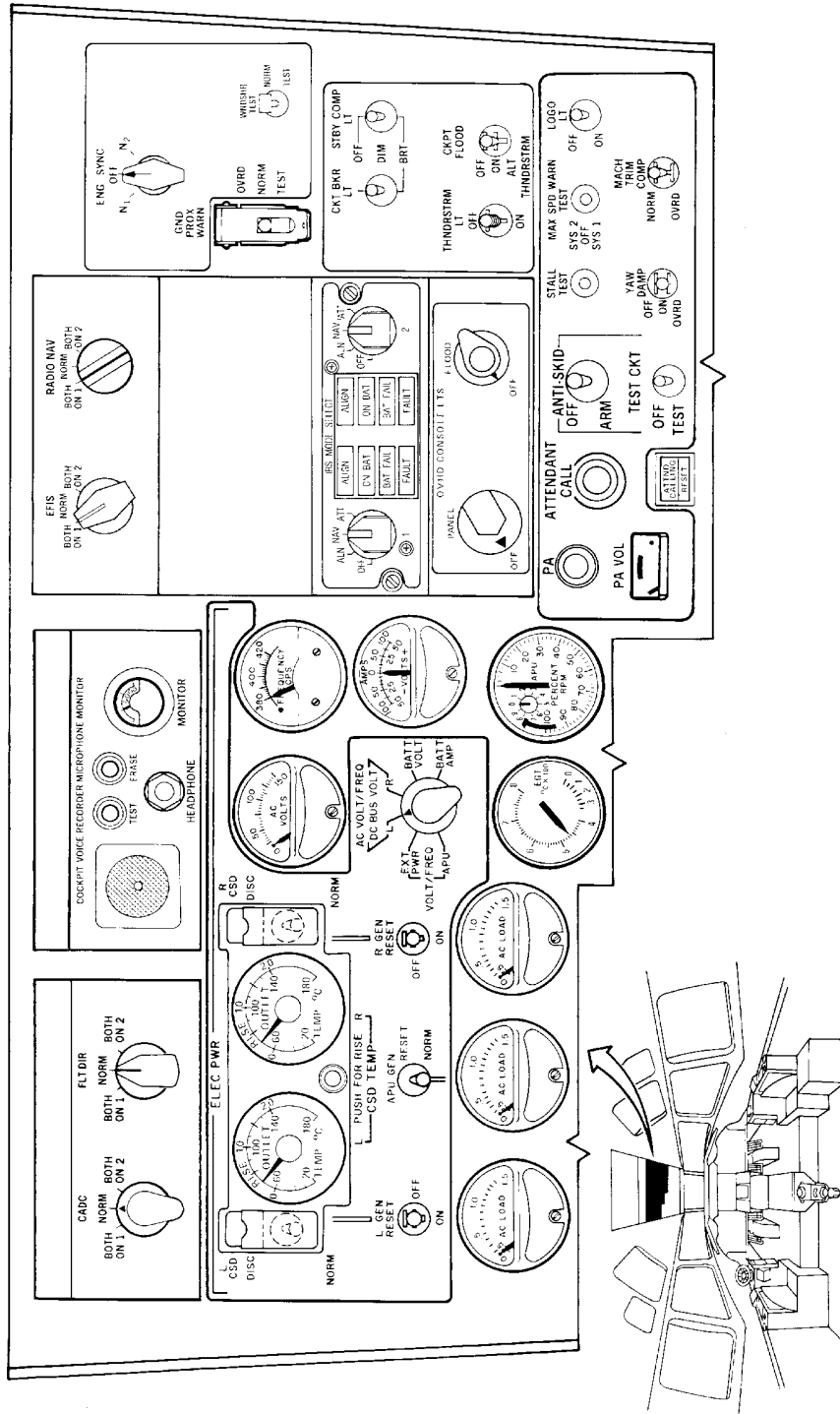
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Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 5 of 12)

EFFECTIVITY
WJE 886, 887

31-12-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



B5B2-31-1301

**Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 6 of 12)**

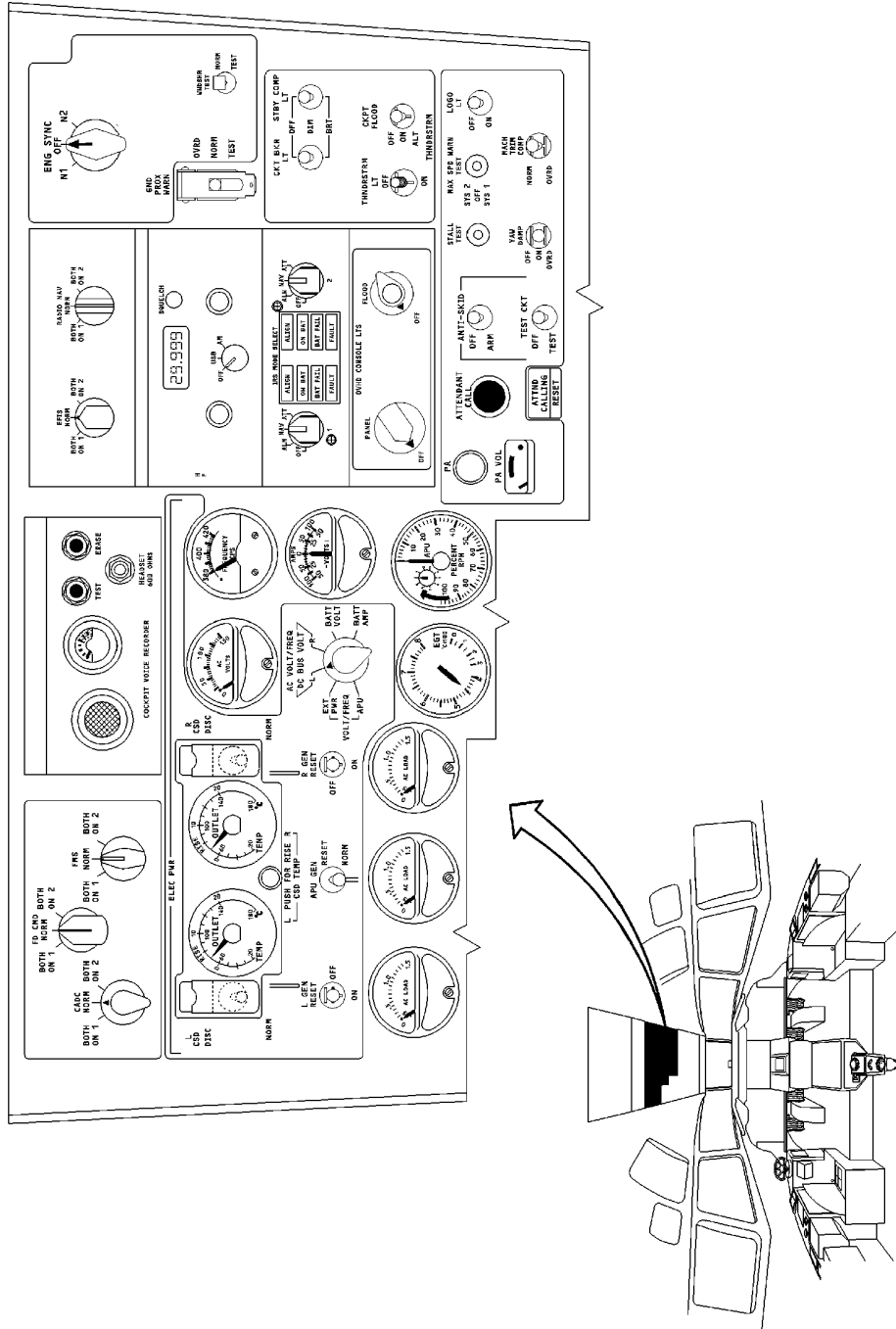
EFFECTIVITY
WJE 875, 876, 878, 879

31-12-02

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-1476



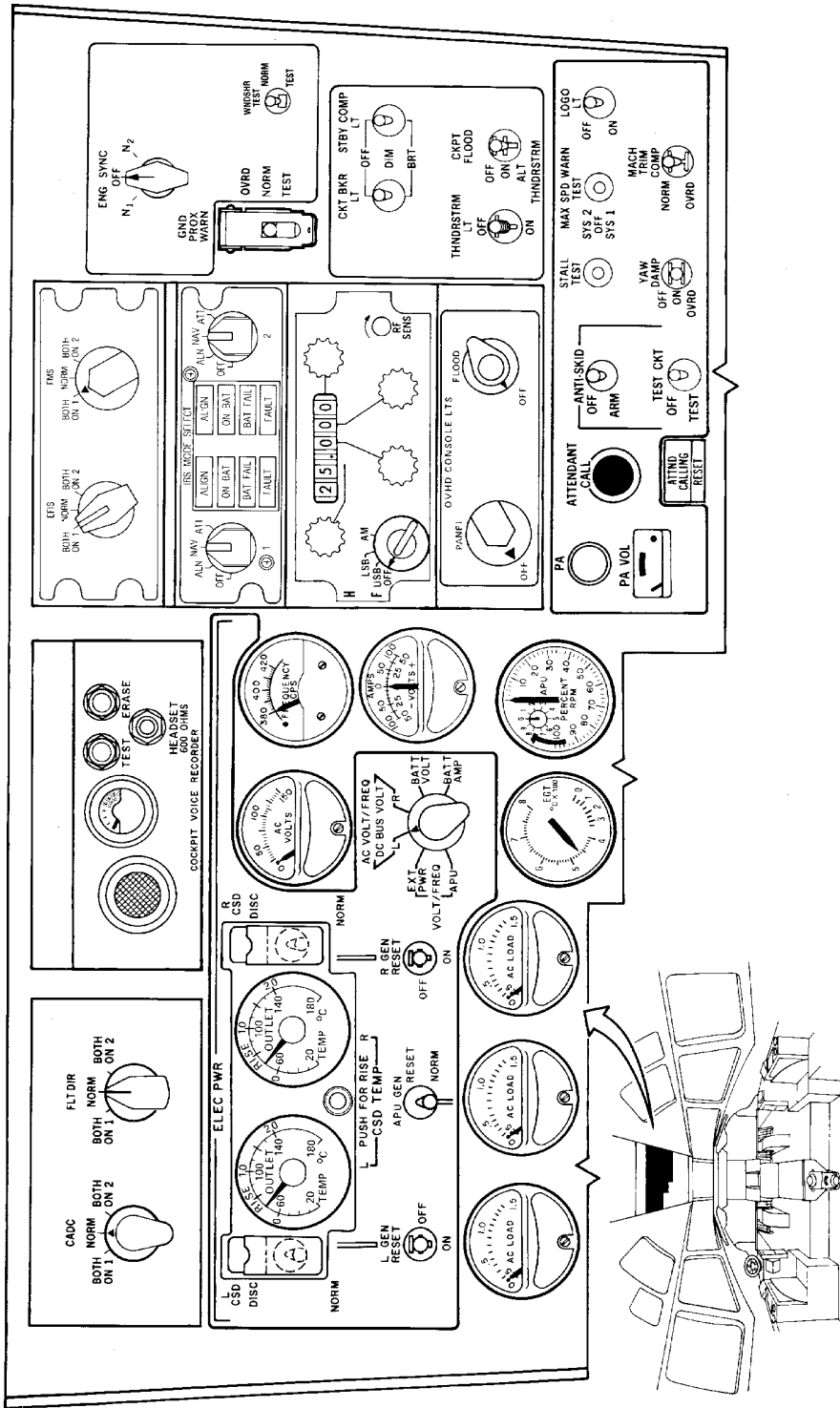
CAG(IGDS)

Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 7 of 12)

EFFECTIVITY
WJE 877

31-12-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



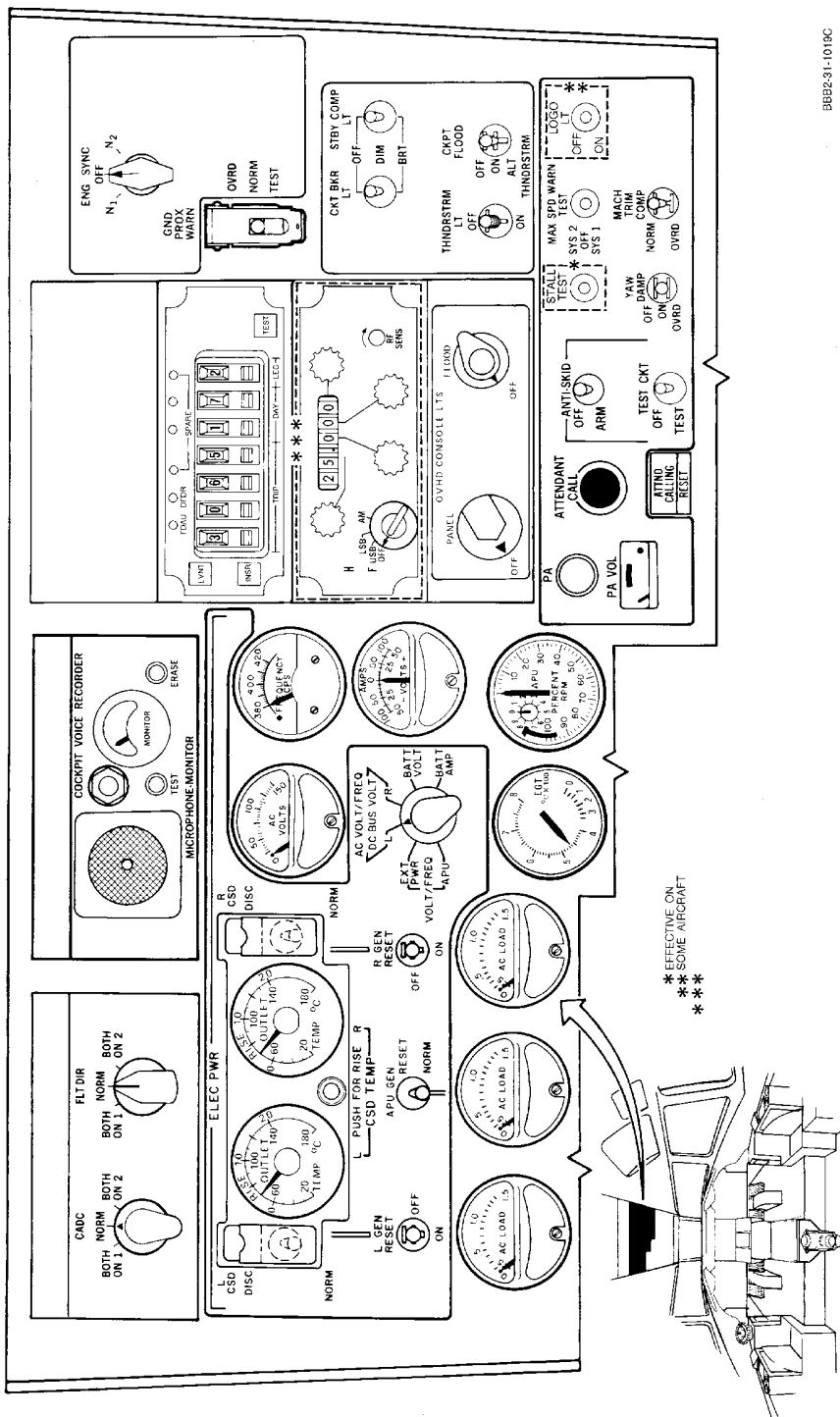
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**Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 8 of 12)**

EFFECTIVITY
WJE 401-404, 412, 414

31-12-02

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Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 9 of 12)

EFFECTIVITY
WJE 892, 893

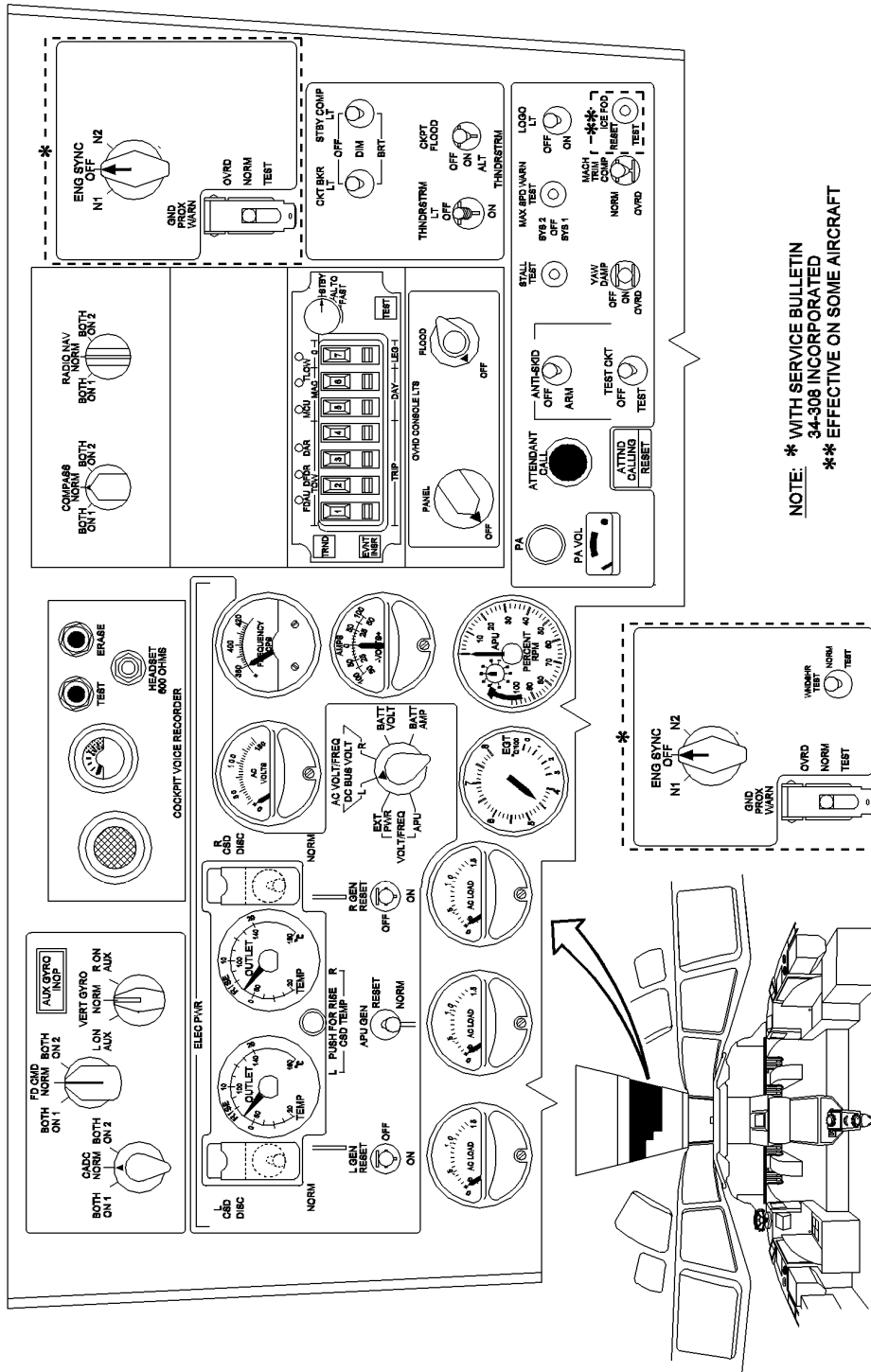
31-12-02

TP-80MM-WJE

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NOTE: * WITH SERVICE BULLETIN 34-308 INCORPORATED
**** EFFECTIVE ON SOME AIRCRAFT**

Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 10 of 12)

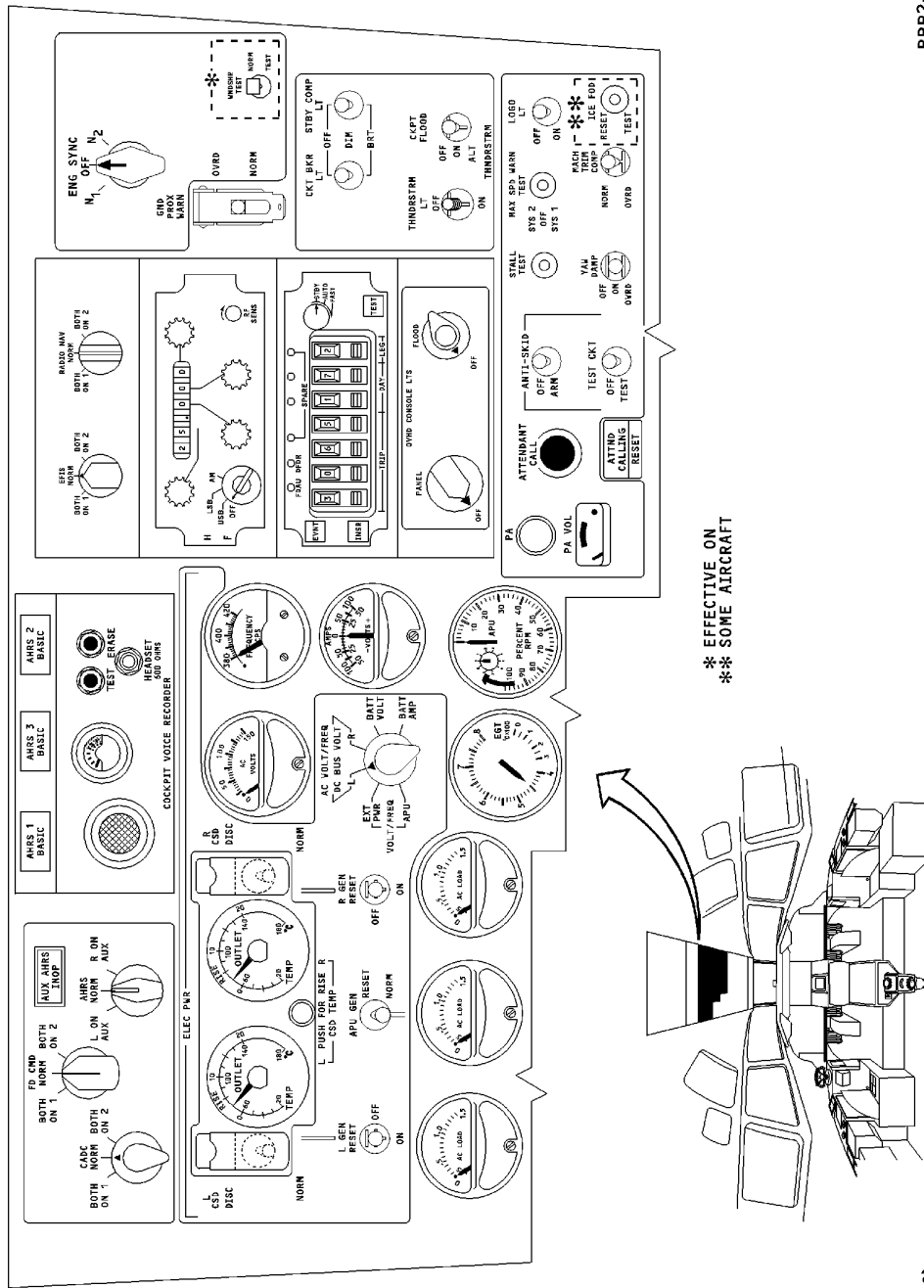
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EFFECTIVITY
WJE 880

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BBB2-31-967B



Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 11 of 12)

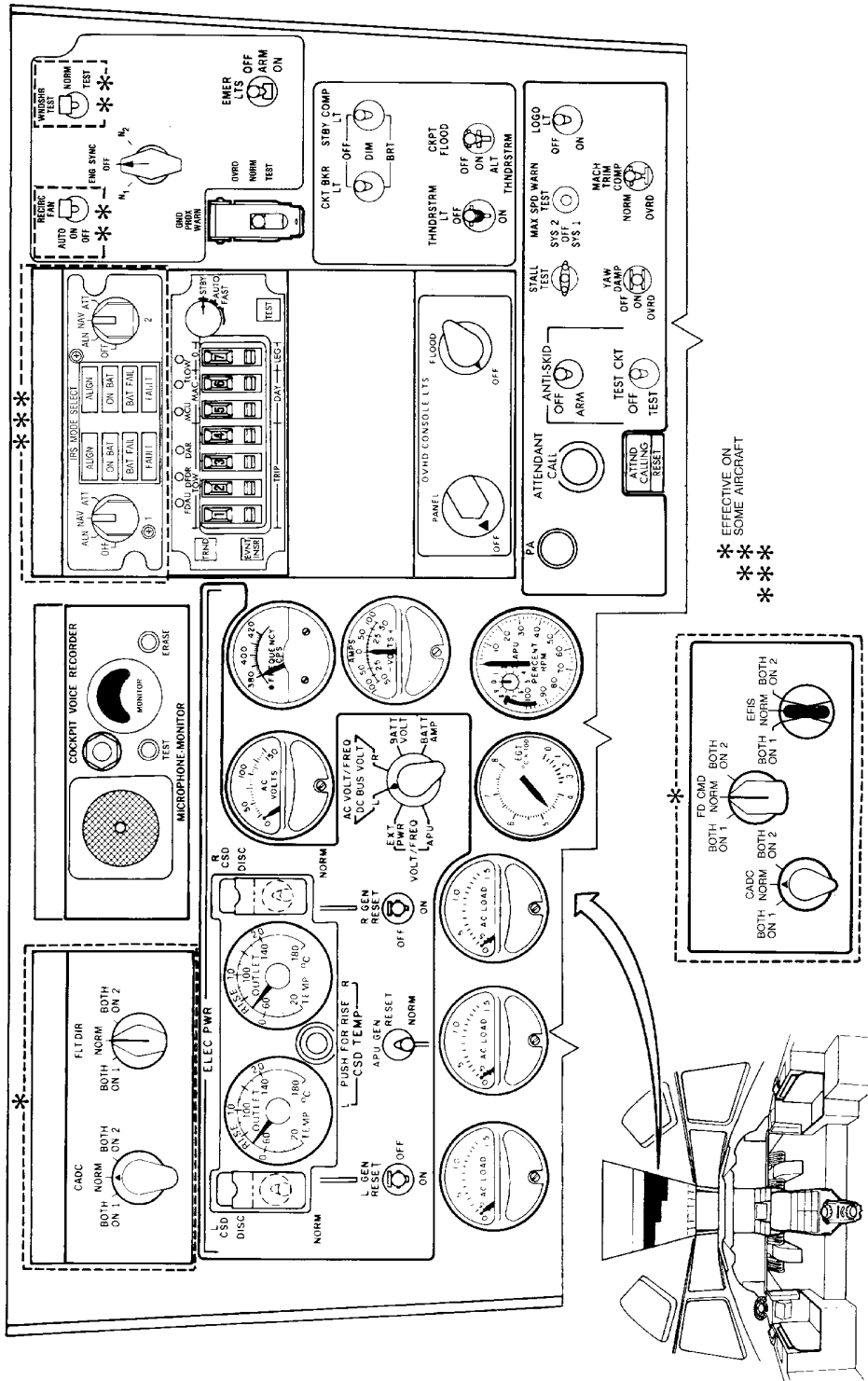
CAG(IGDS)

EFFECTIVITY
WJE 407, 408, 411

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-660D



EFFECTIVE ON SOME AIRCRAFT

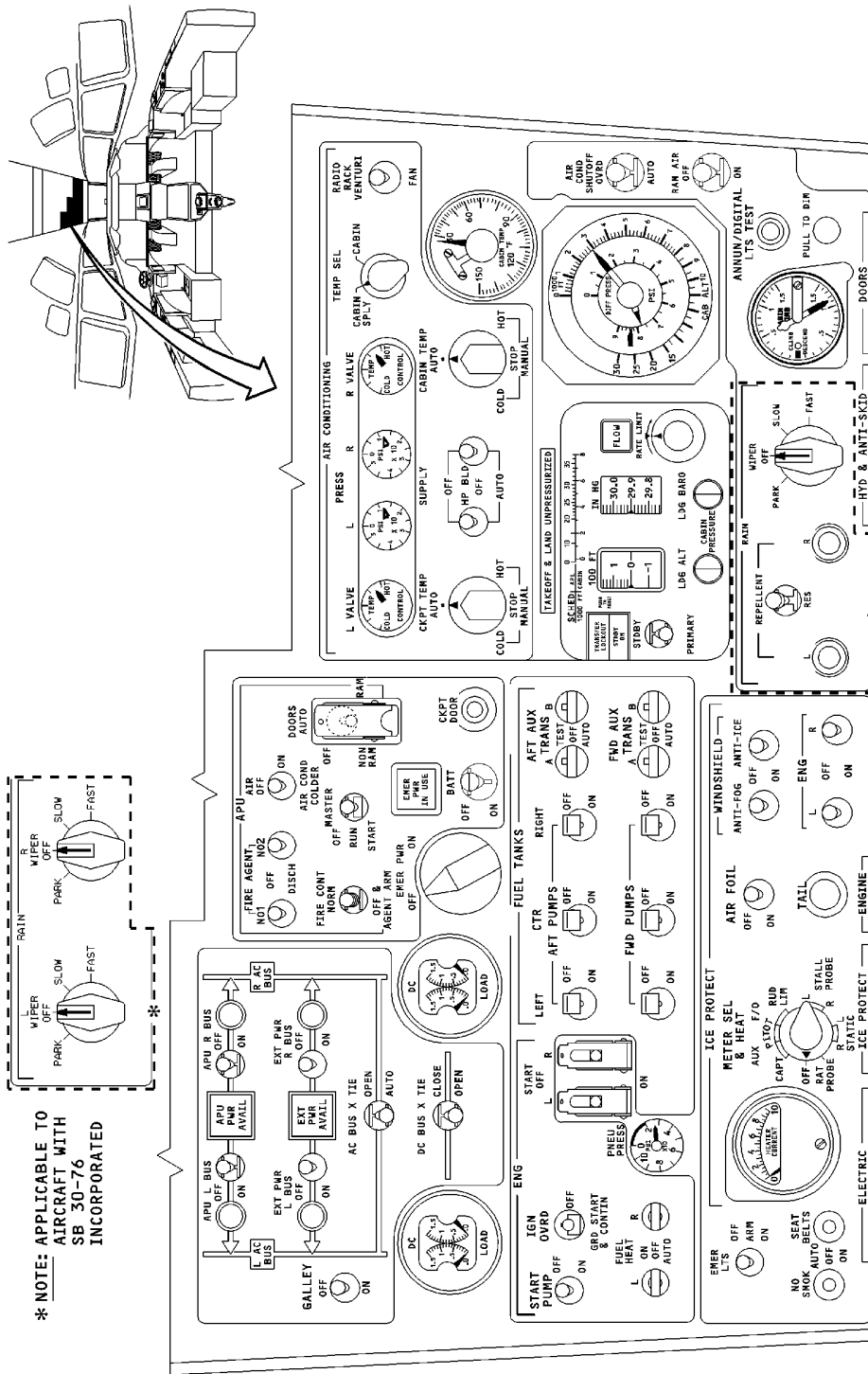
Forward Overhead Switch Panel
Figure 1/31-12-02-990-801 (Sheet 12 of 12)

EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-747B



Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 1 of 10)

EFFECTIVITY
WJE 405, 409, 884

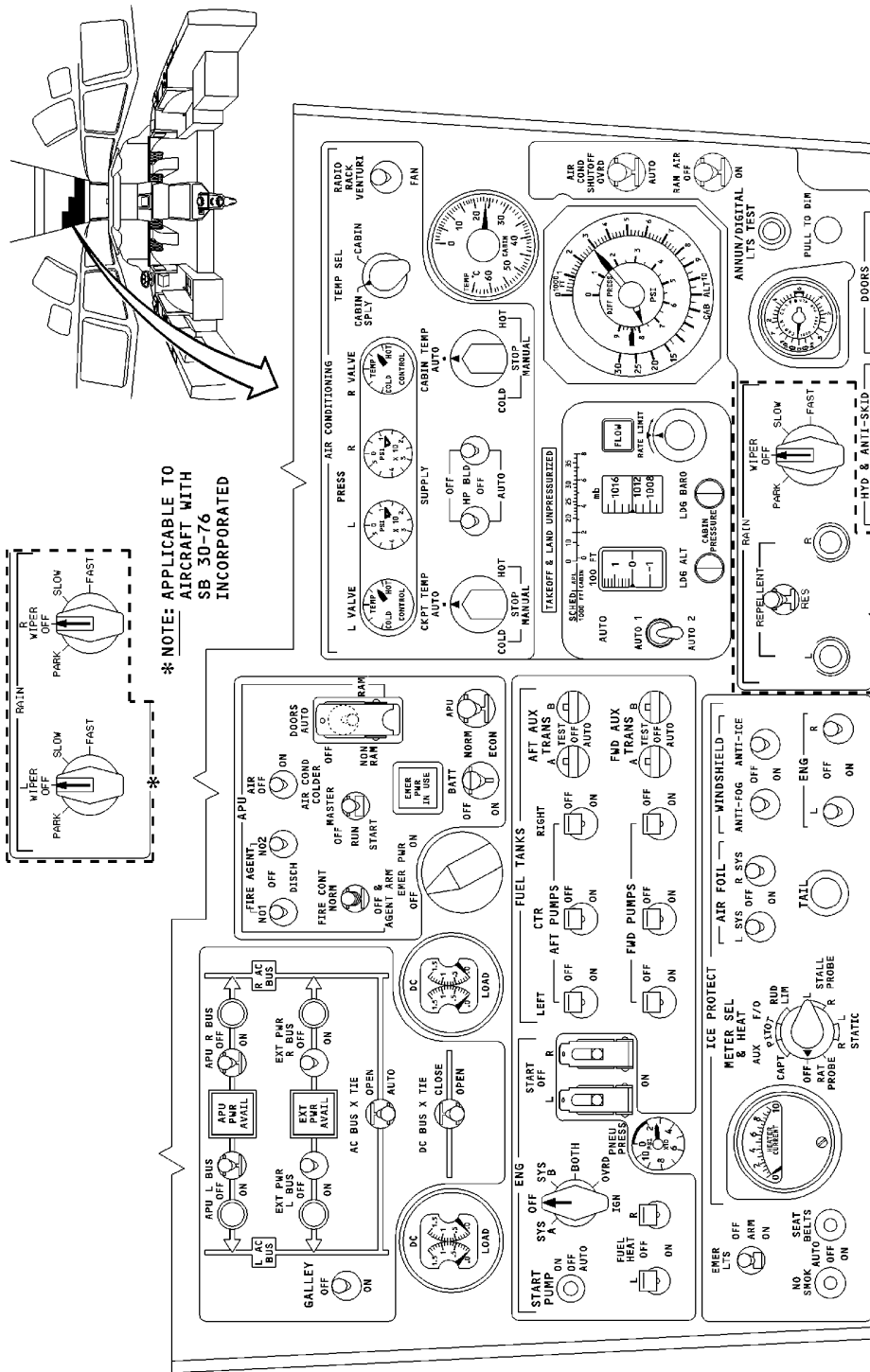
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TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-658C



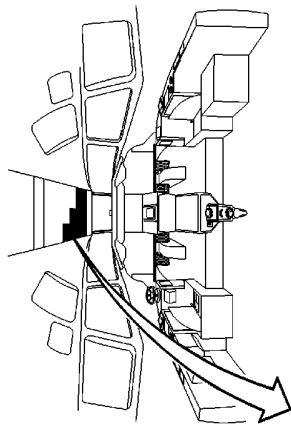
Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 2 of 10)

EFFECTIVITY
WJE 892, 893

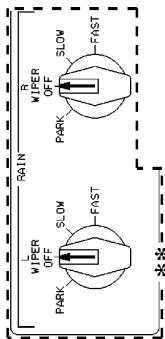
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MD-80 AIRCRAFT MAINTENANCE MANUAL

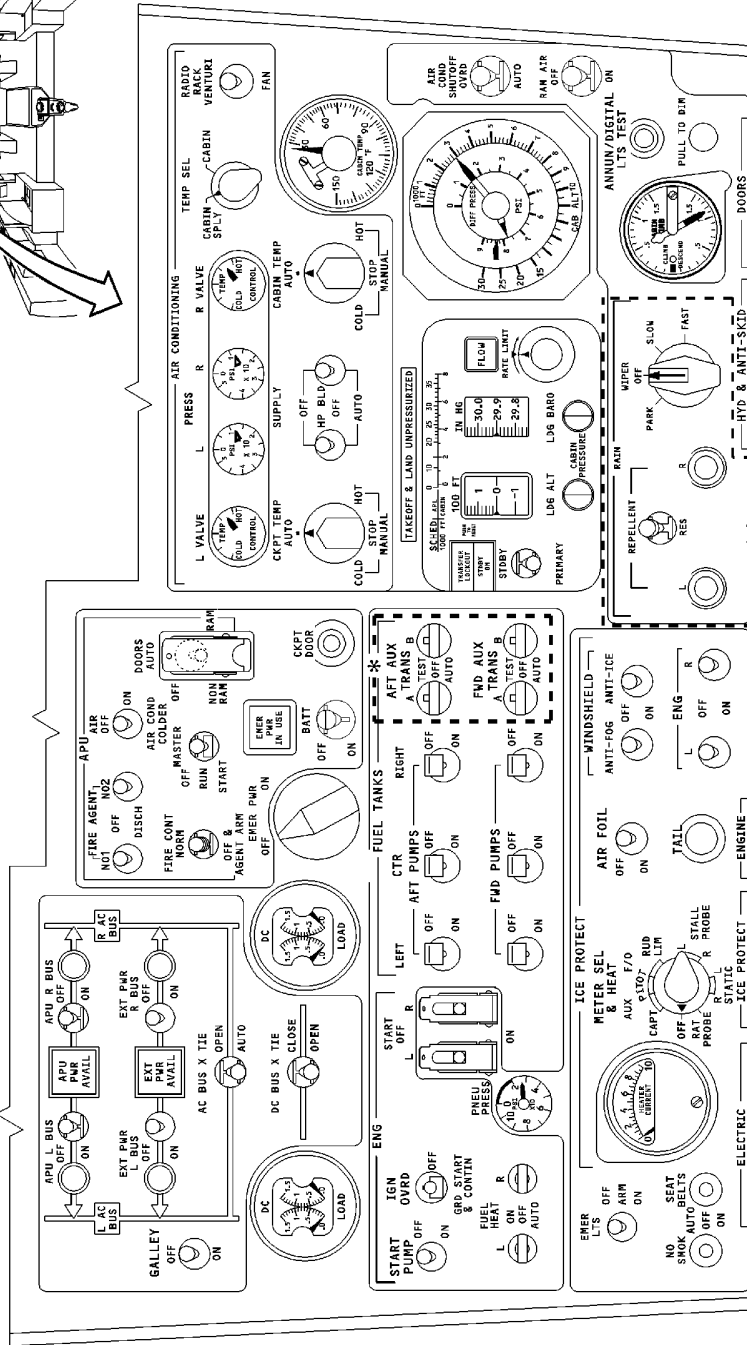
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* EFFECTIVE ON SOME AIRCRAFT



** NOTE: APPLICABLE TO AIRCRAFT WITH SB 30-76 INCORPORATED



CAG(IGDS)

Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 3 of 10)

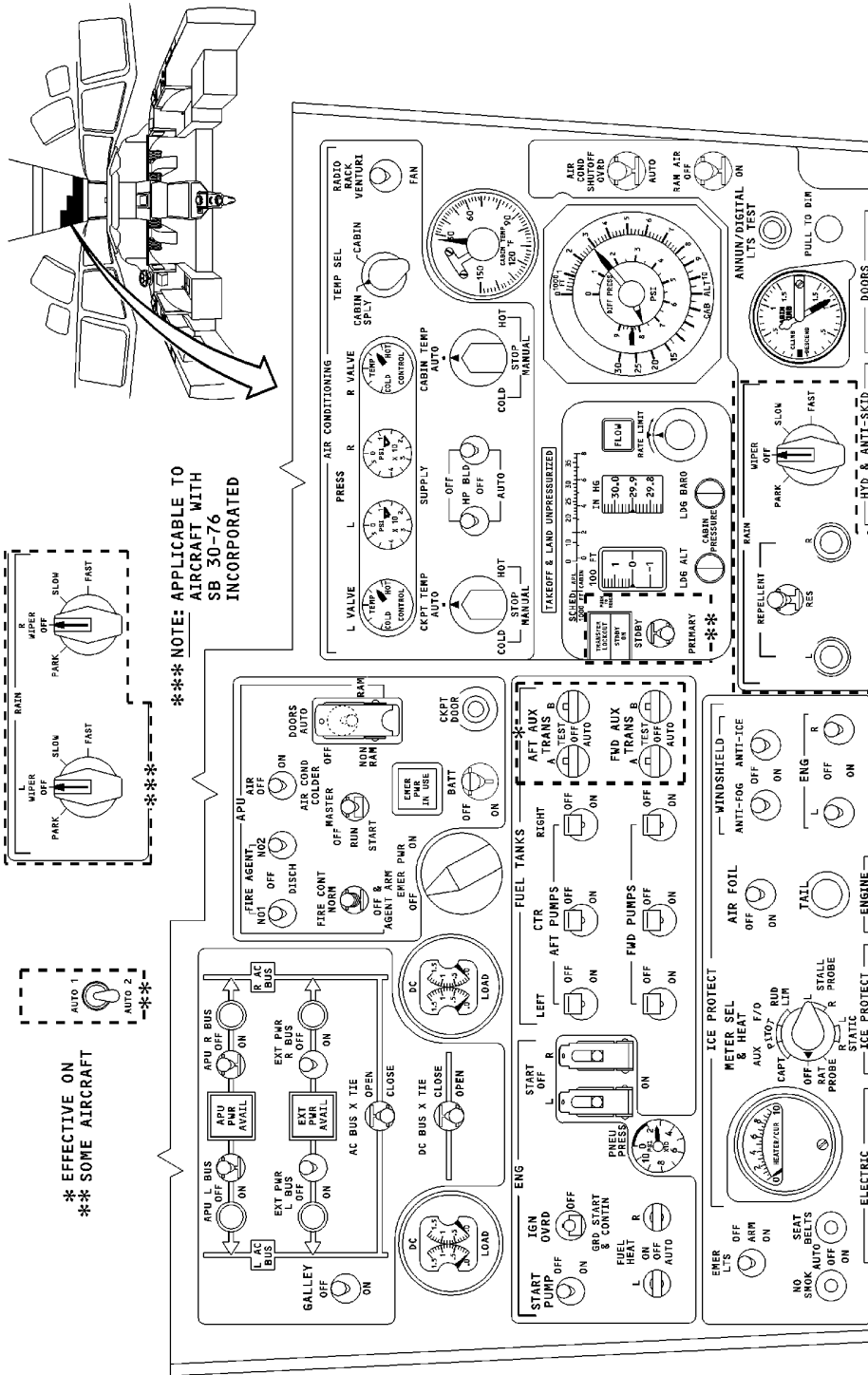
EFFECTIVITY
WJE 406, 881, 883

31-12-02

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-963C



CAG(IGDS)

Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 4 of 10)

EFFECTIVITY
WJE 873, 874

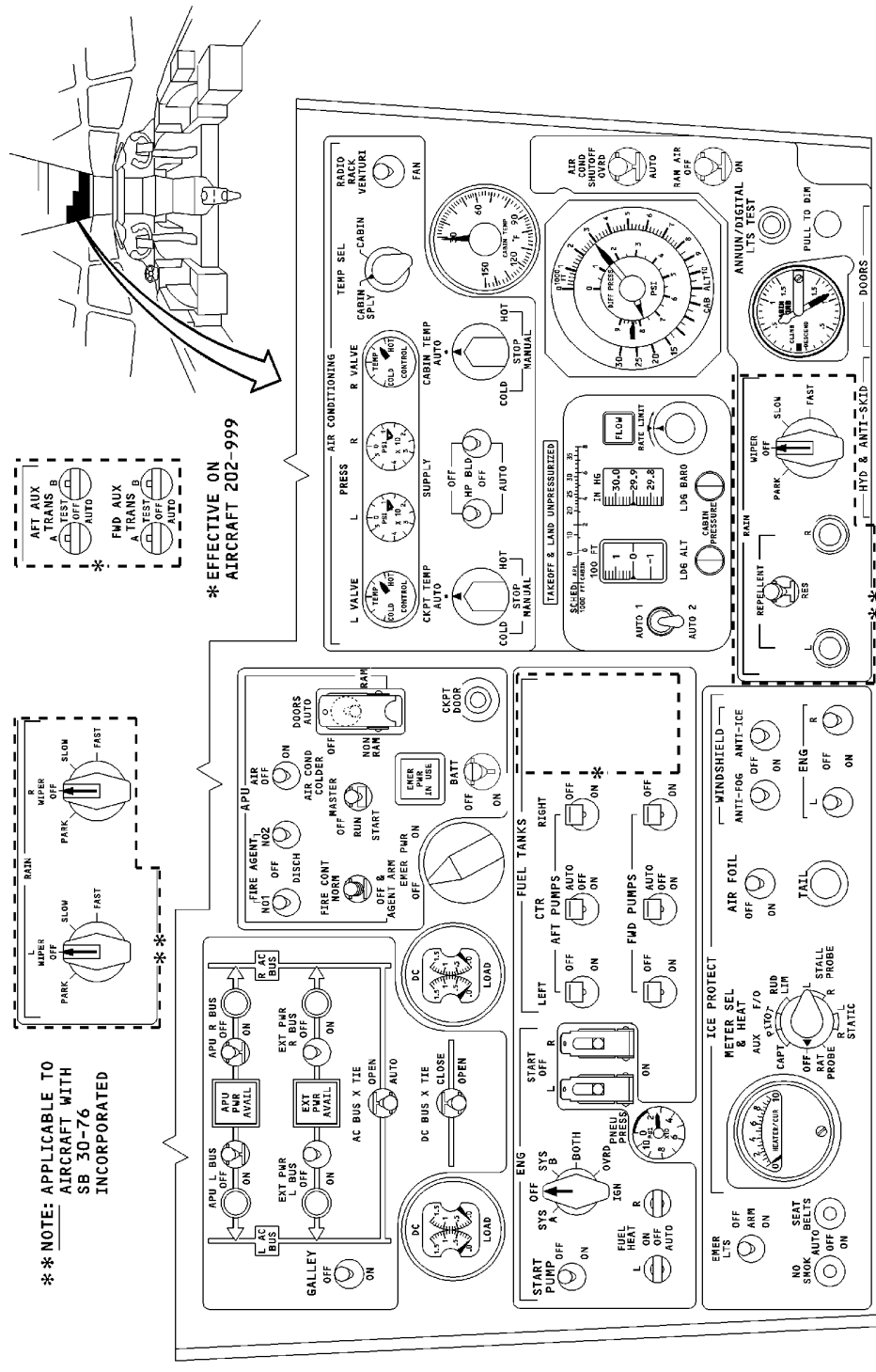
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TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-1191B



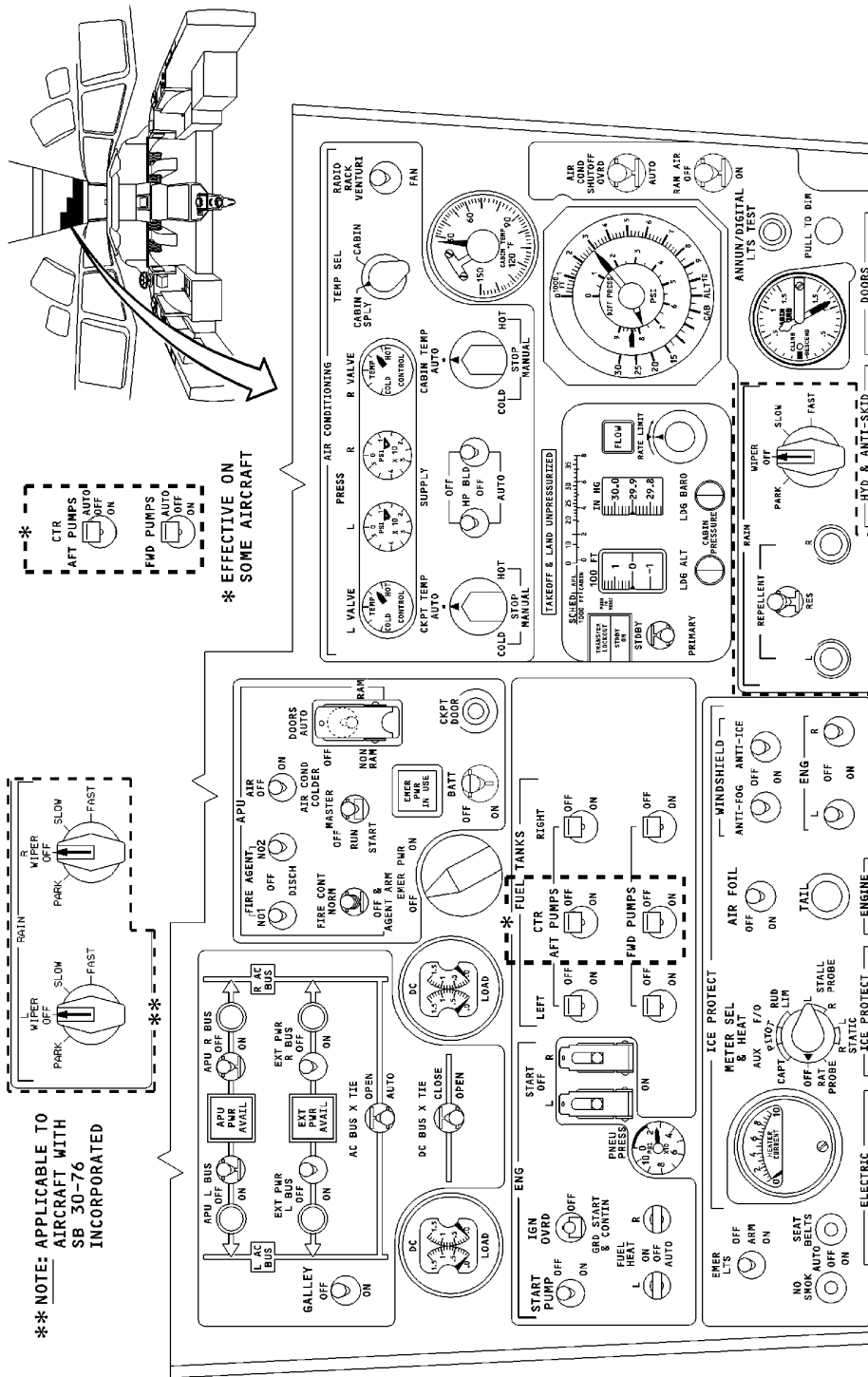
Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 5 of 10)

EFFECTIVITY
WJE 875-879

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-775C



CAG(IGDS)

Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 6 of 10)

EFFECTIVITY
WJE 886, 887

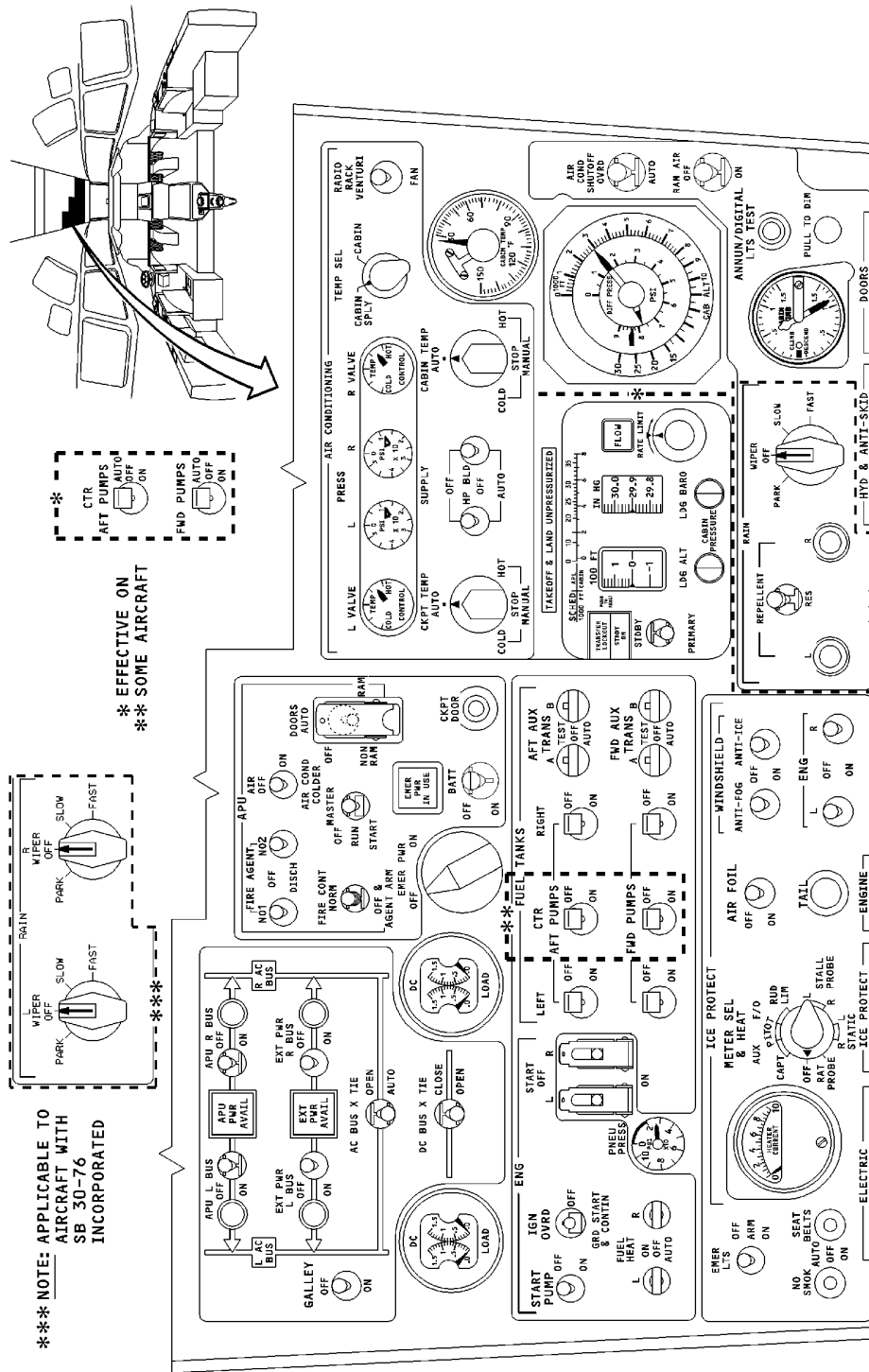
31-12-02

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TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-210E



Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 7 of 10)

EFFECTIVITY
WJE 410

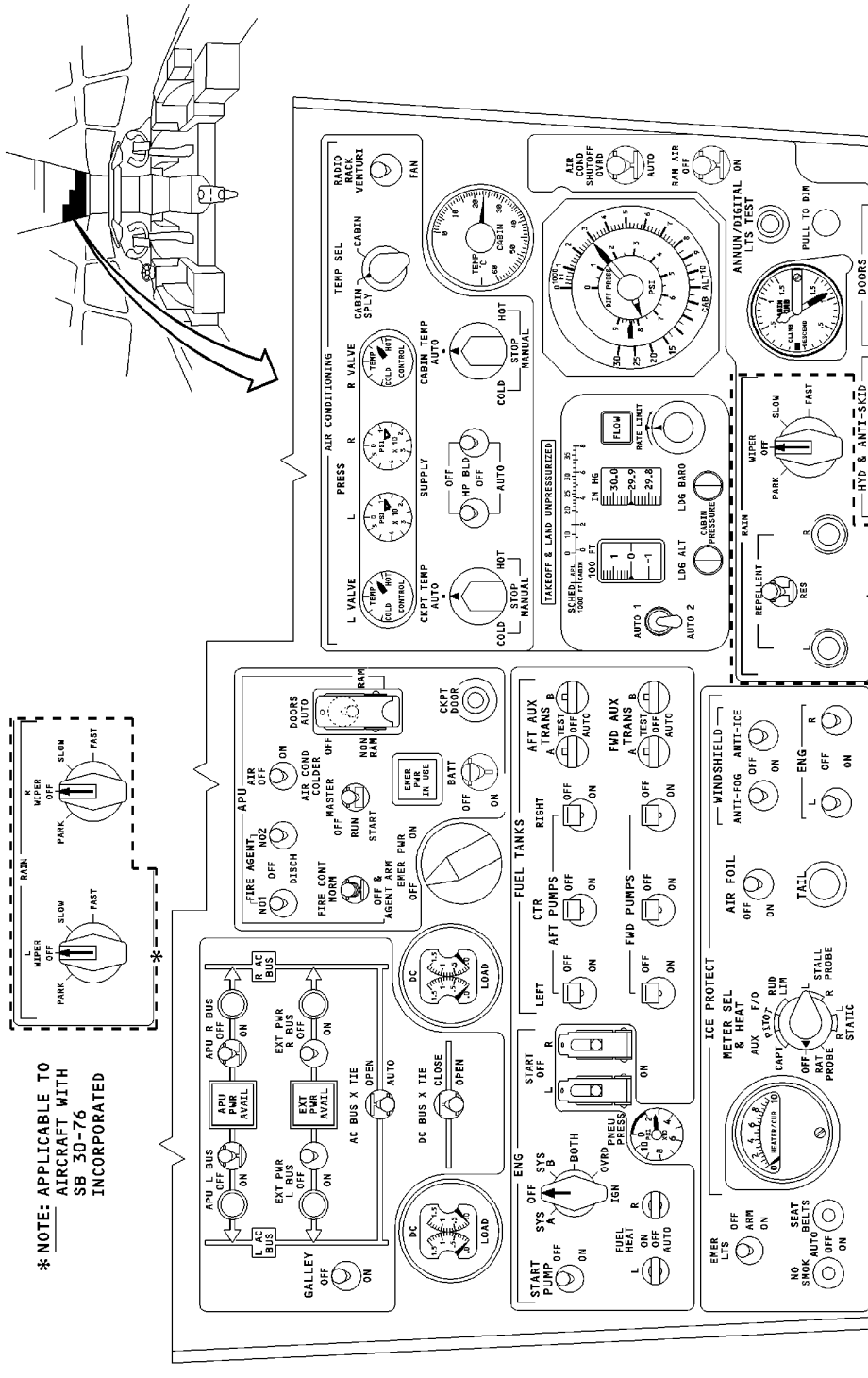
31-12-02

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BBB2-31-189D



Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 8 of 10)

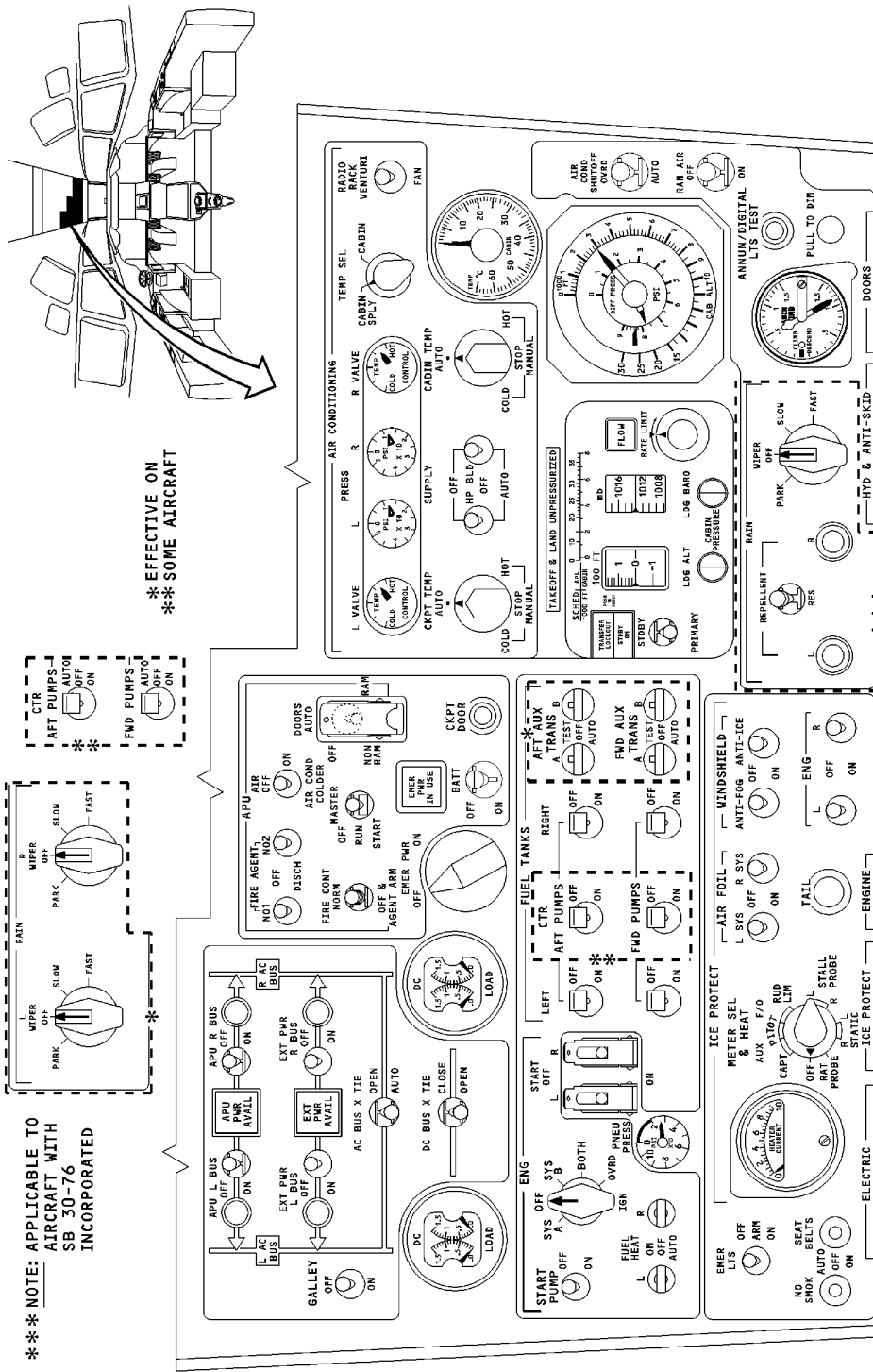
EFFECTIVITY
WJE 401-404, 412, 414

31-12-02

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TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-968C.

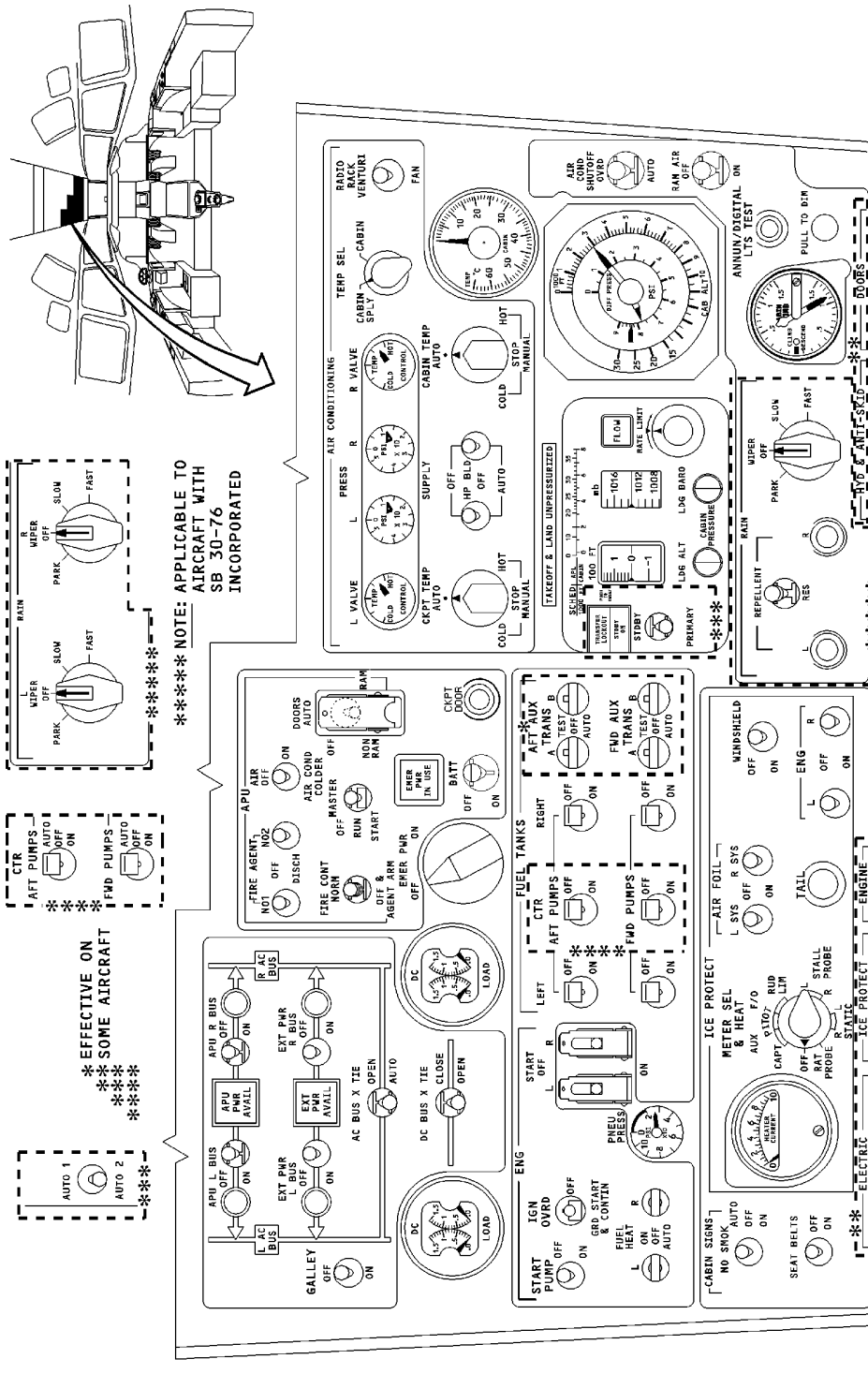
Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 9 of 10)

EFFECTIVITY
WJE 407, 408, 411, 880

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-661E



CAG(IGDS)

Forward Overhead Switch Panel
Figure 2/31-12-02-990-802 (Sheet 10 of 10)

EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

31-12-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

OVERHEAD CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION

1. General

A. The overhead circuit breaker panel is a unit of the overhead switch panel.

2. Description

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891

A. The overhead circuit breaker panel provides a mounting base for the battery bus, the battery direct bus, and the emergency AC and DC buses.

WJE 405, 406, 409, 881, 883, 884

NOTE: On some aircraft, there are stall self test switches.

WJE 873, 874, 893

B. The overhead circuit breaker panel provides a mounting base for the battery bus, the battery direct bus and the emergency AC and DC buses.

WJE 892

C. The overhead circuit breaker panel provides a mounting base for the battery bus, the battery direct bus, the emergency AC and DC buses and stall self test switches.

WJE ALL

3. Operation

A. To open a circuit, pull the applicable circuit breaker. To close a circuit, press the applicable circuit breaker.

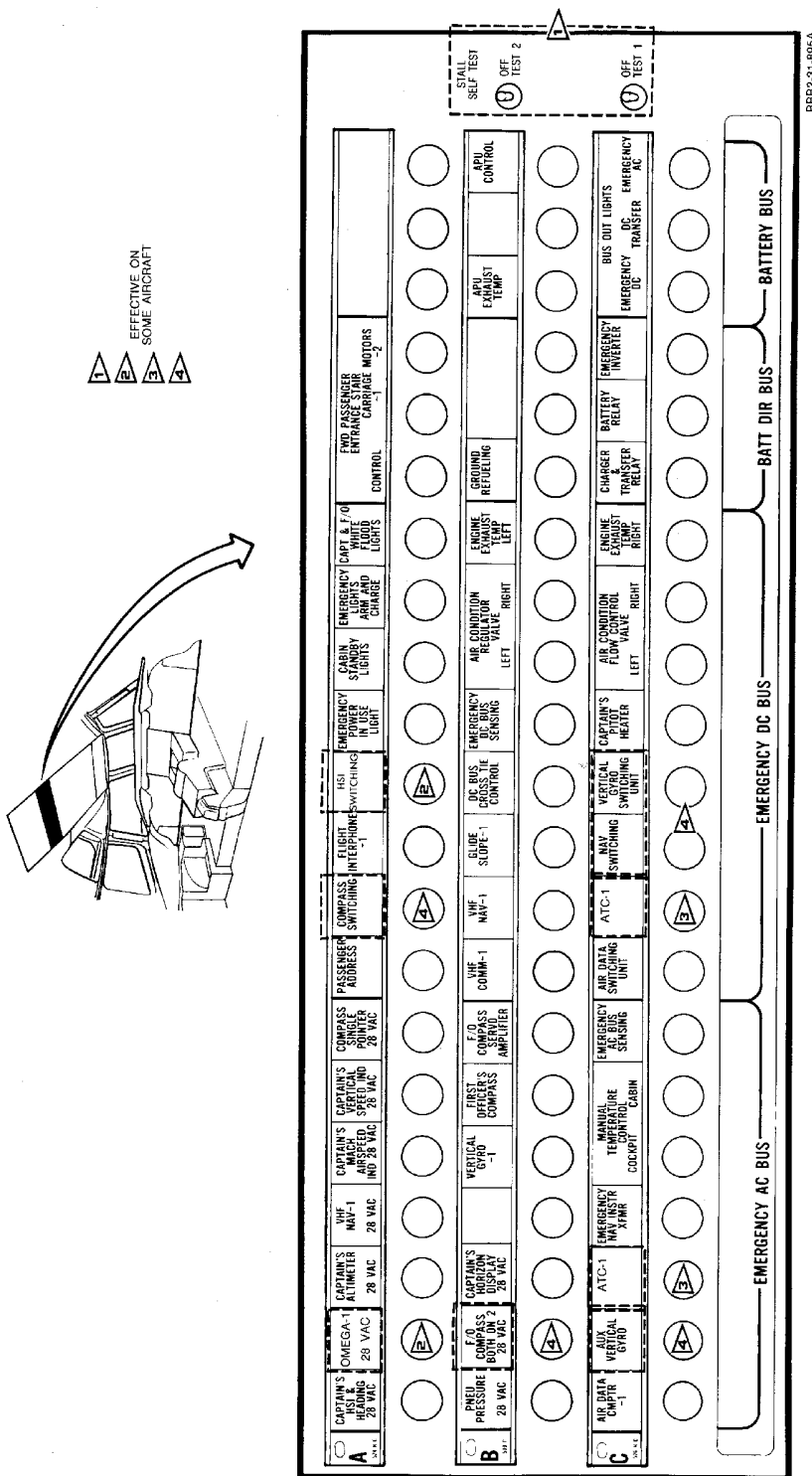
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-12-03

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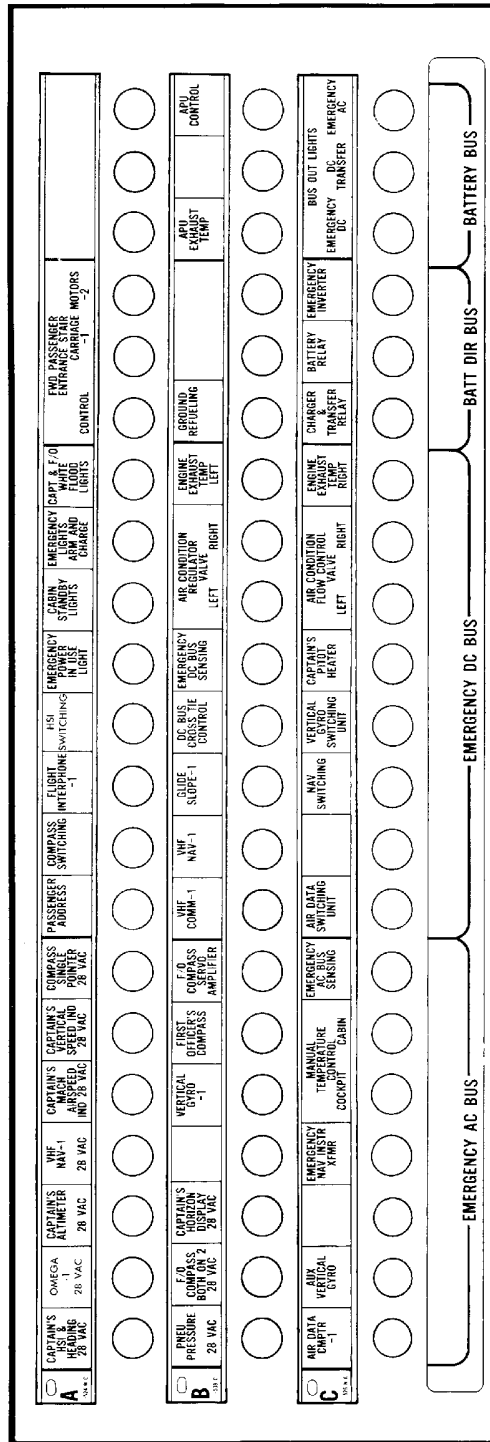
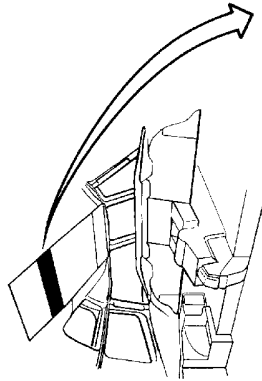
Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 1 of 14)

EFFECTIVITY
WJE 873, 874, 892, 893

31-12-03

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



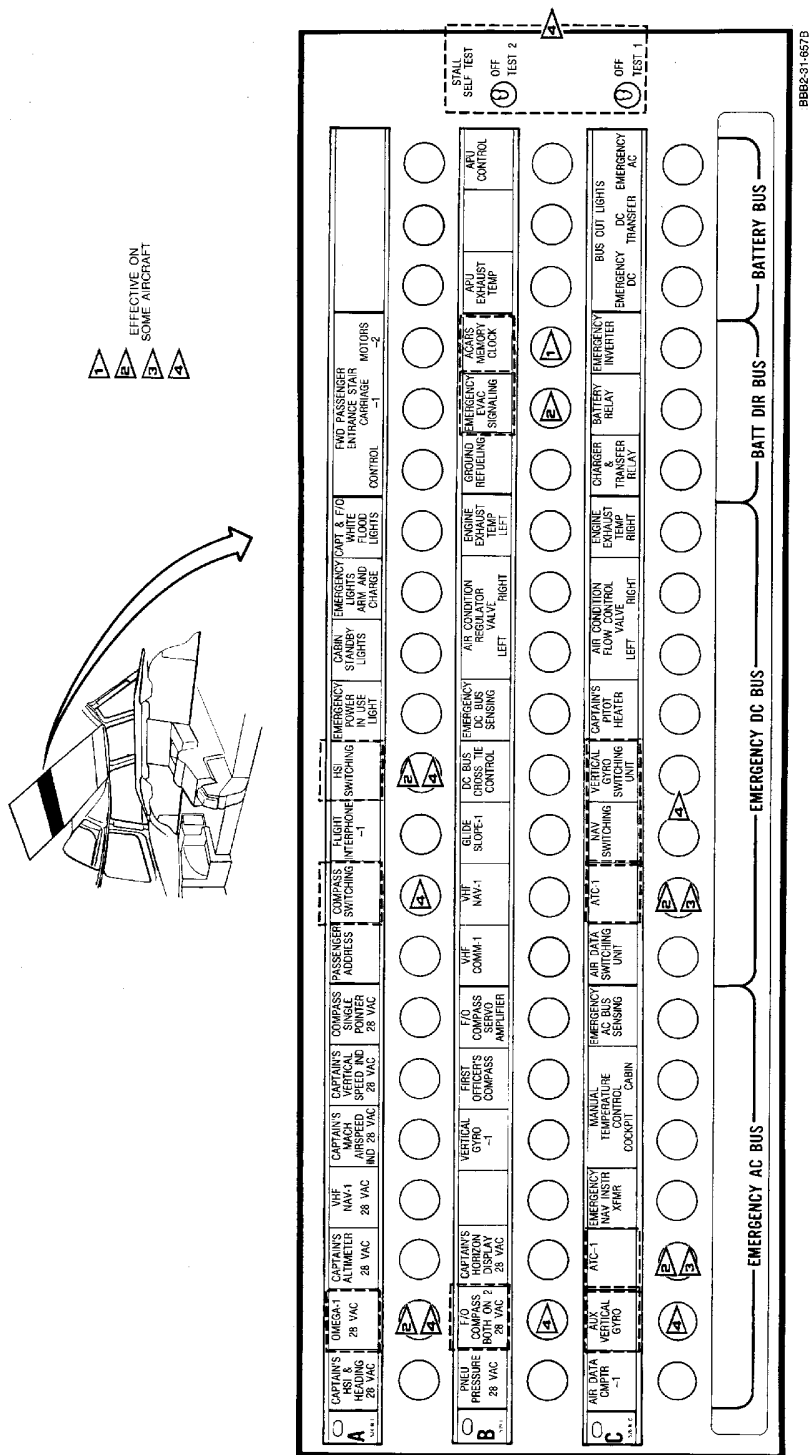
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 2 of 14)

EFFECTIVITY
WJE 405, 409, 884

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL

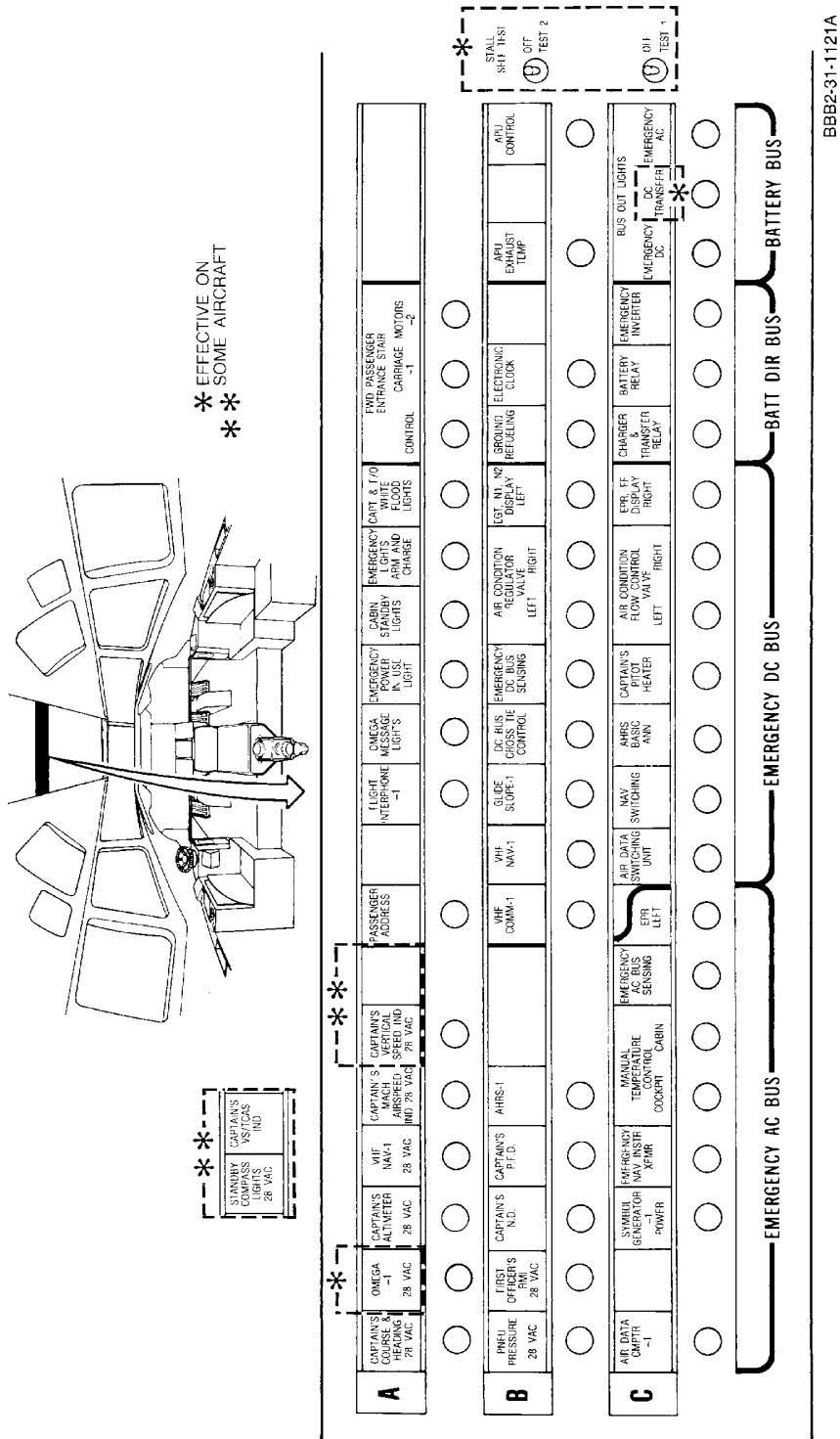


Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 3 of 14)

EFFECTIVITY
WJE 881, 883

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



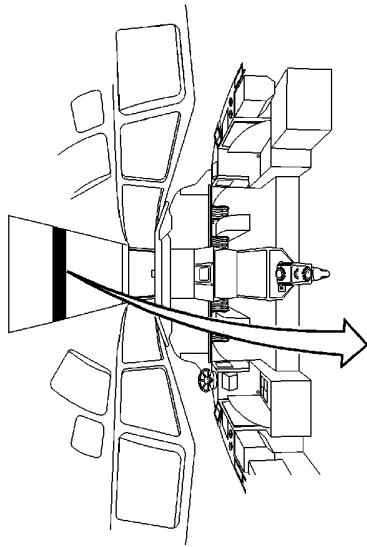
Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 4 of 14)

EFFECTIVITY
WJE 406

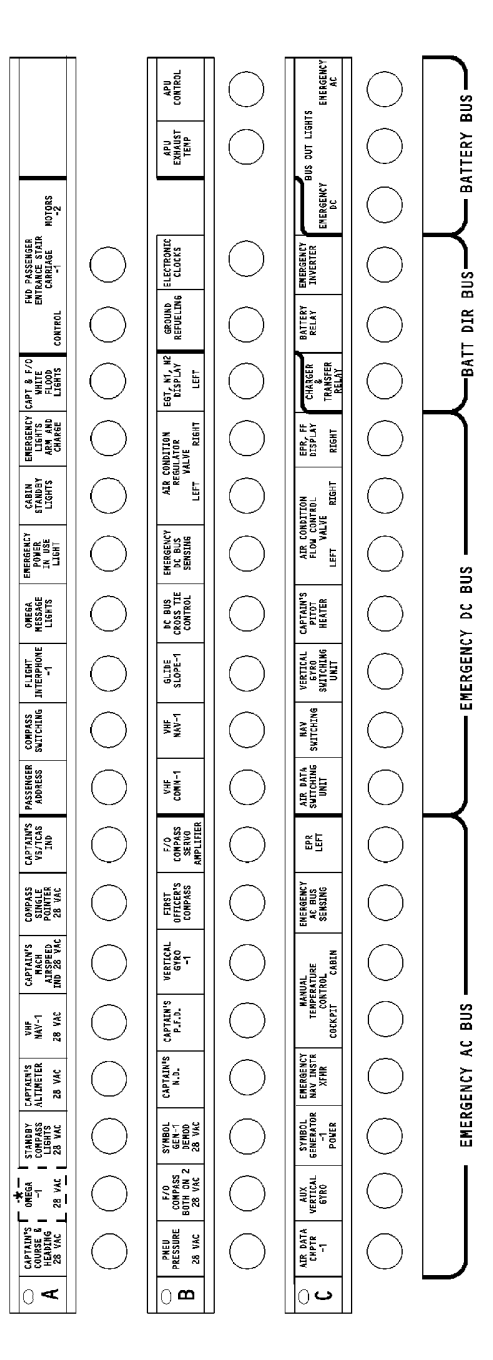
TP-80MM-WJE

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



* EFFECTIVE ON SOME AIRCRAFT



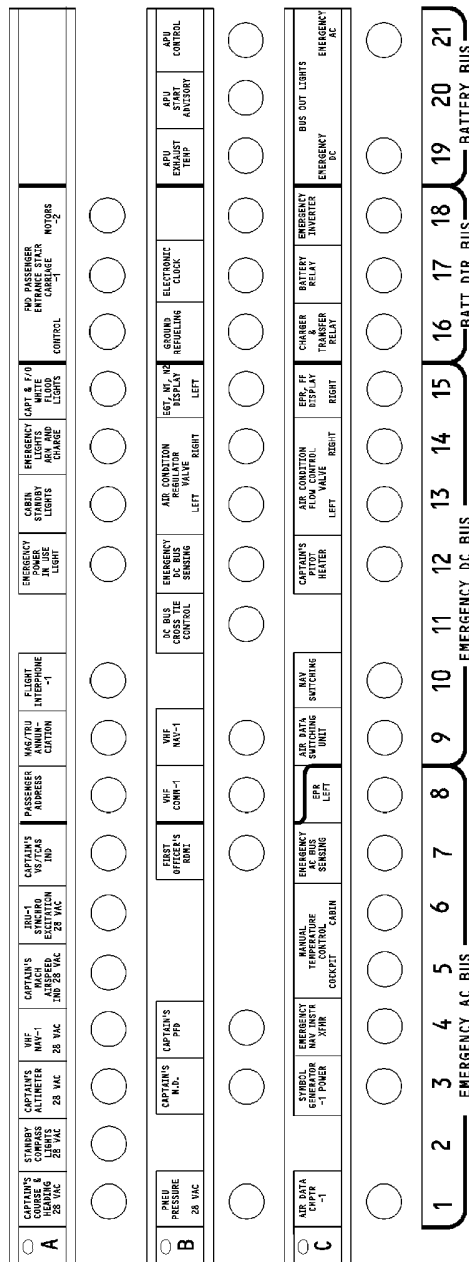
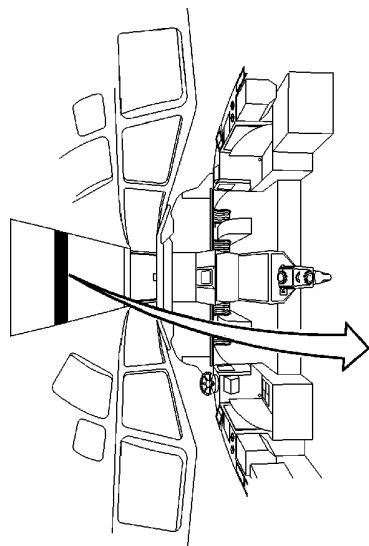
BBB2-31-1089E

Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 5 of 14)

EFFECTIVITY
WJE 410

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1371

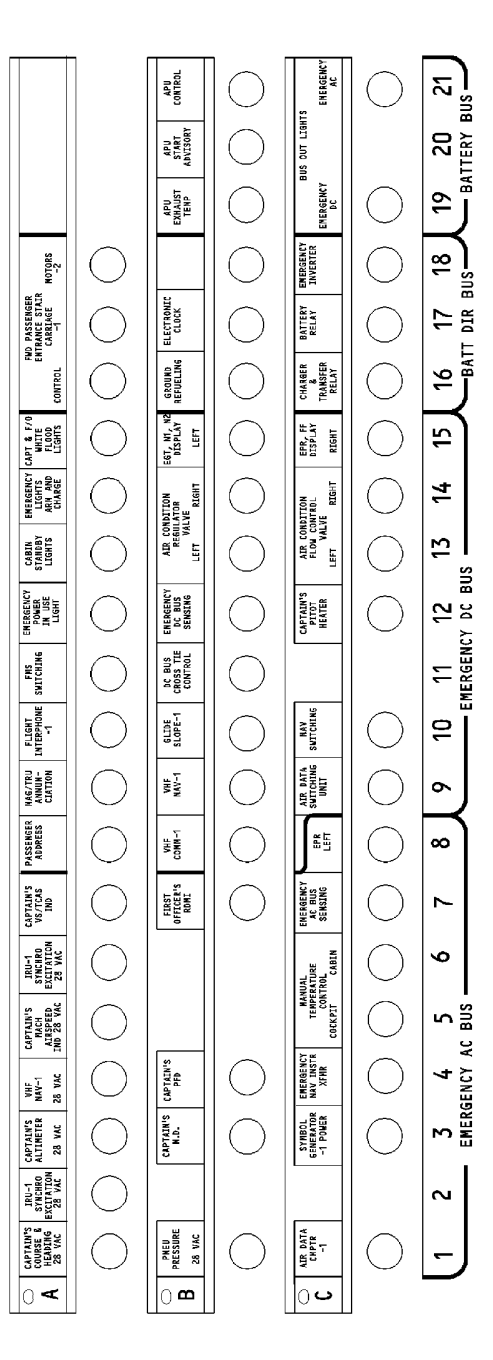
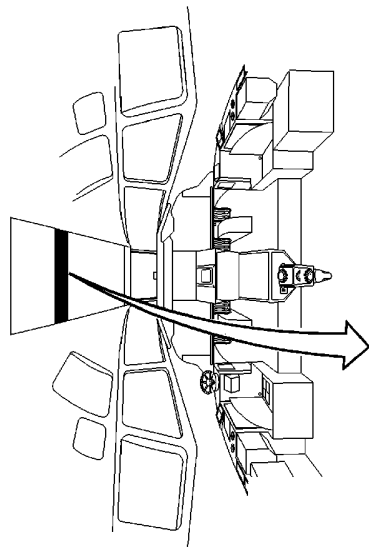
CAG(IGDS)

Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 6 of 14)

EFFECTIVITY
WJE 875, 876, 878, 879

31-12-03

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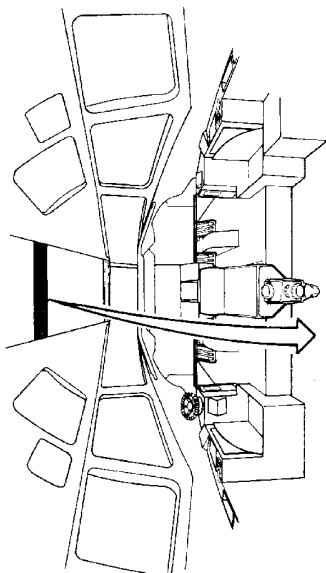
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 7 of 14)

EFFECTIVITY
WJE 877

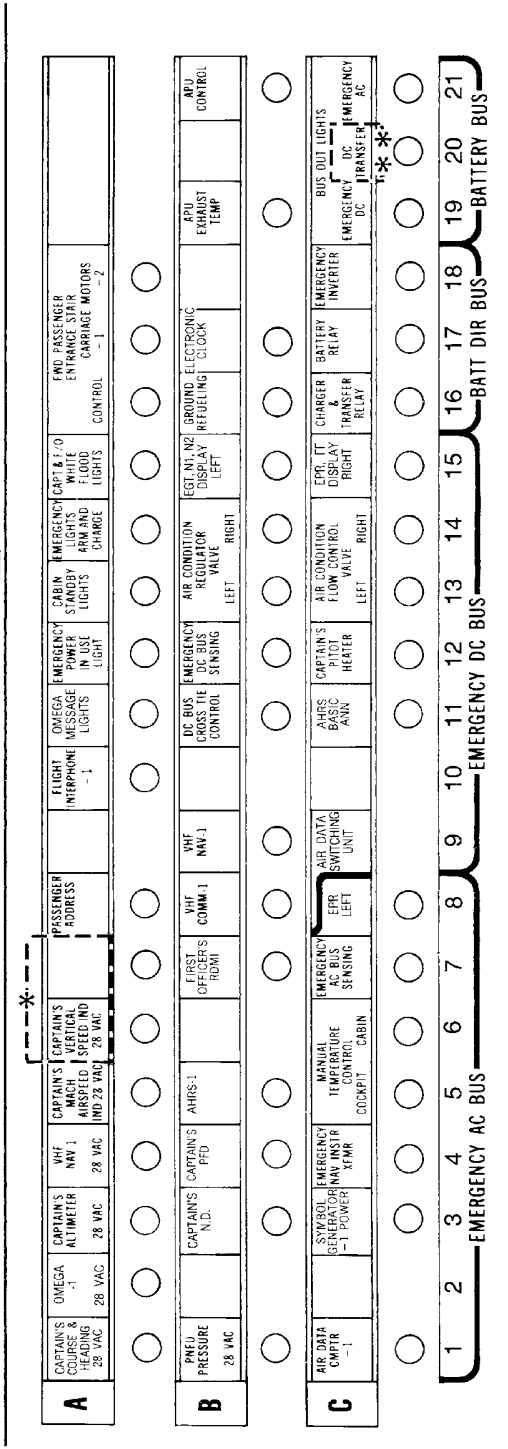
31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



** EFFECTIVE ON SOME AIRCRAFT *

STANDBY COMPASS LIGHTS 28 VAC	CAPTAIN'S VS/TCAS IND
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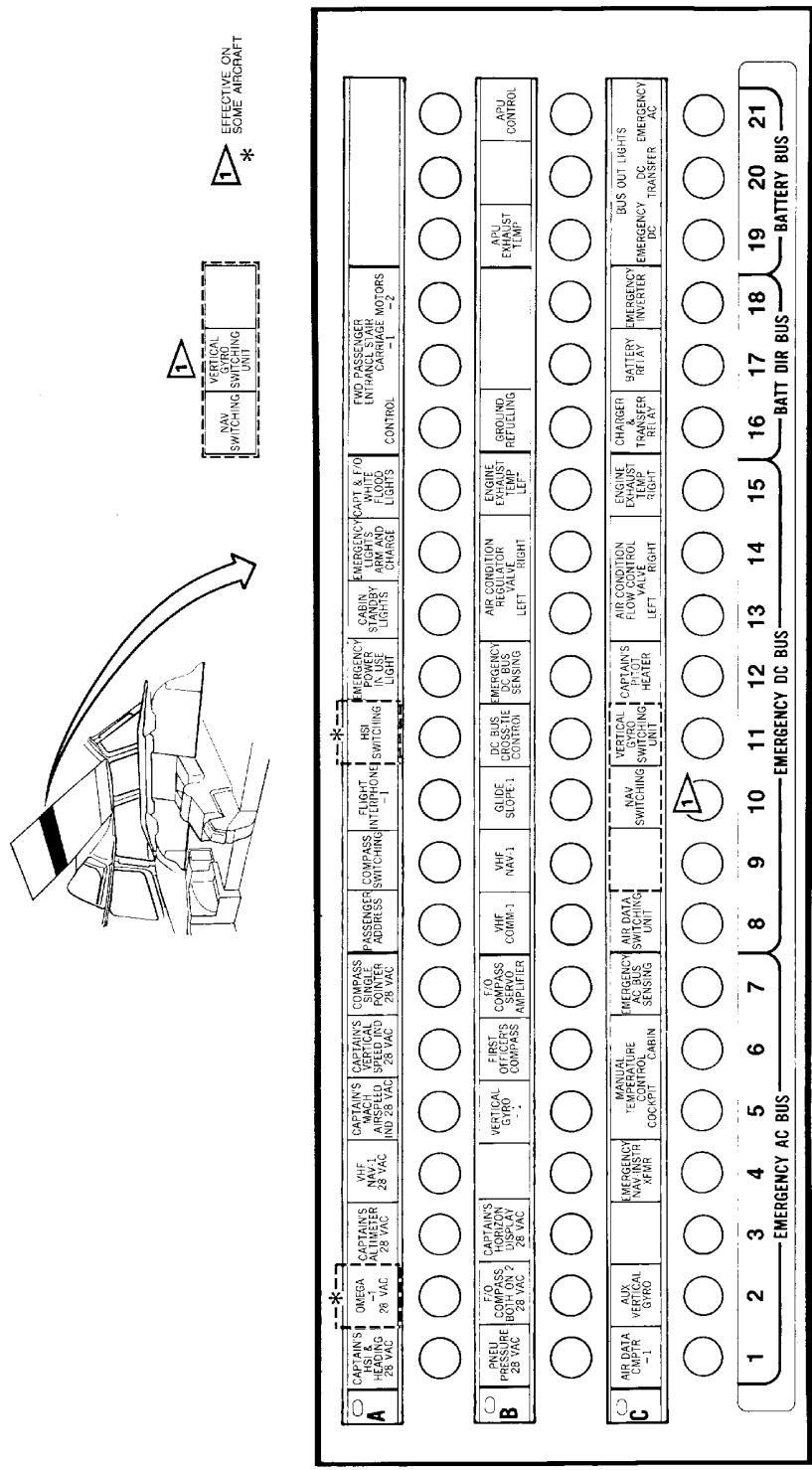
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 9 of 14)

EFFECTIVITY
WJE 886, 887

31-12-03

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BBB2-31-662A

Overhead Circuit Breaker Panel Figure 1/31-12-03-990-801 (Sheet 10 of 14)

EFFECTIVITY
WJE 880

31-12-03

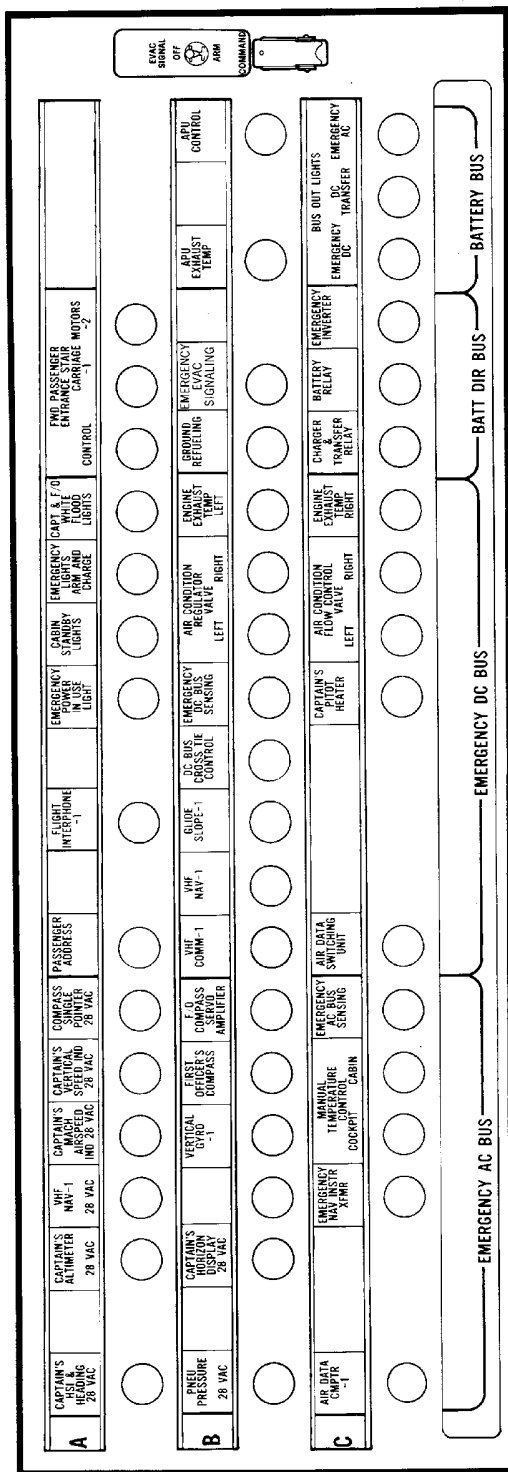
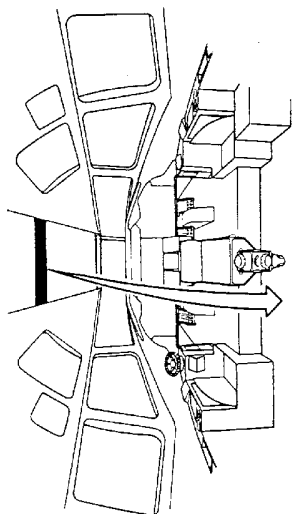
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May 01/2016

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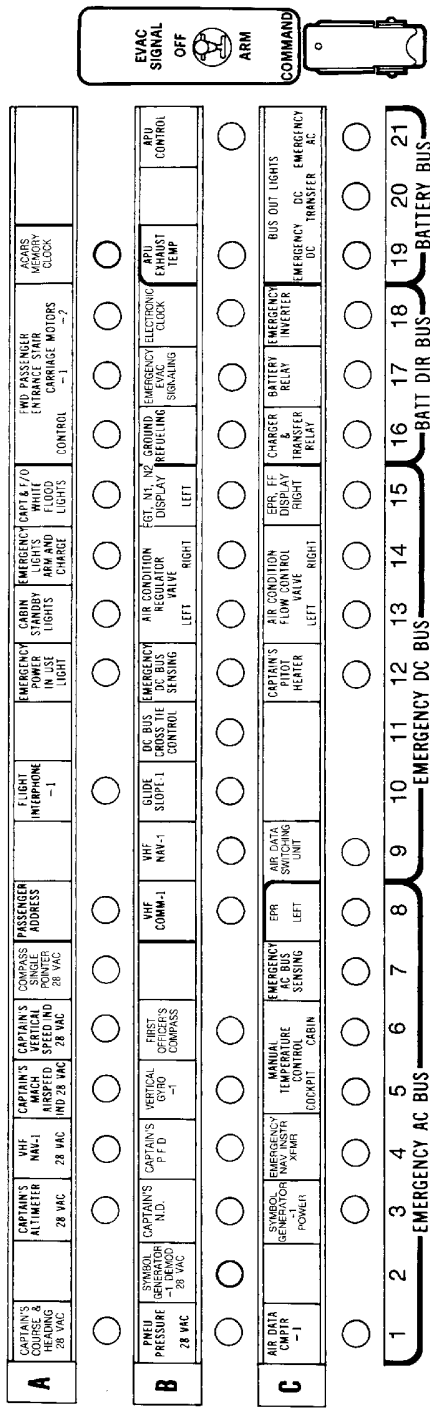
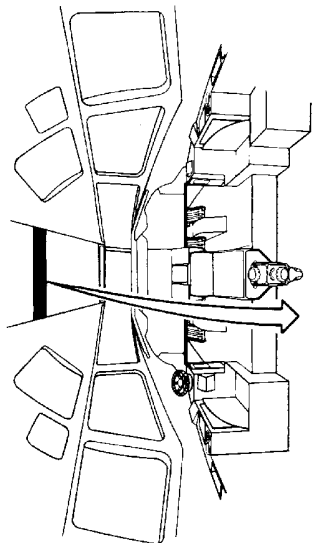
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 11 of 14)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-12-03

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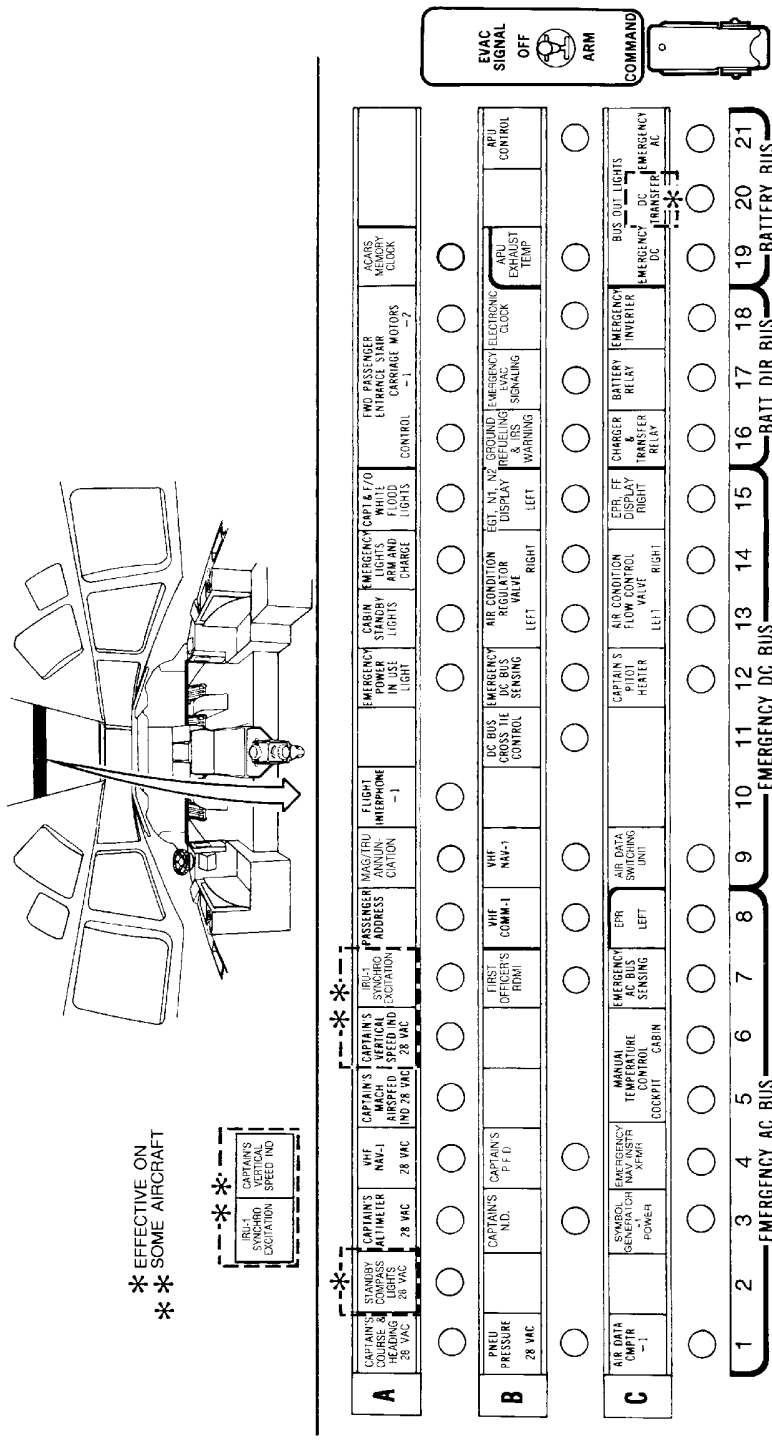
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 12 of 14)

EFFECTIVITY
WJE 415, 418, 863, 864, 866

31-12-03

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BBB2-31-550C

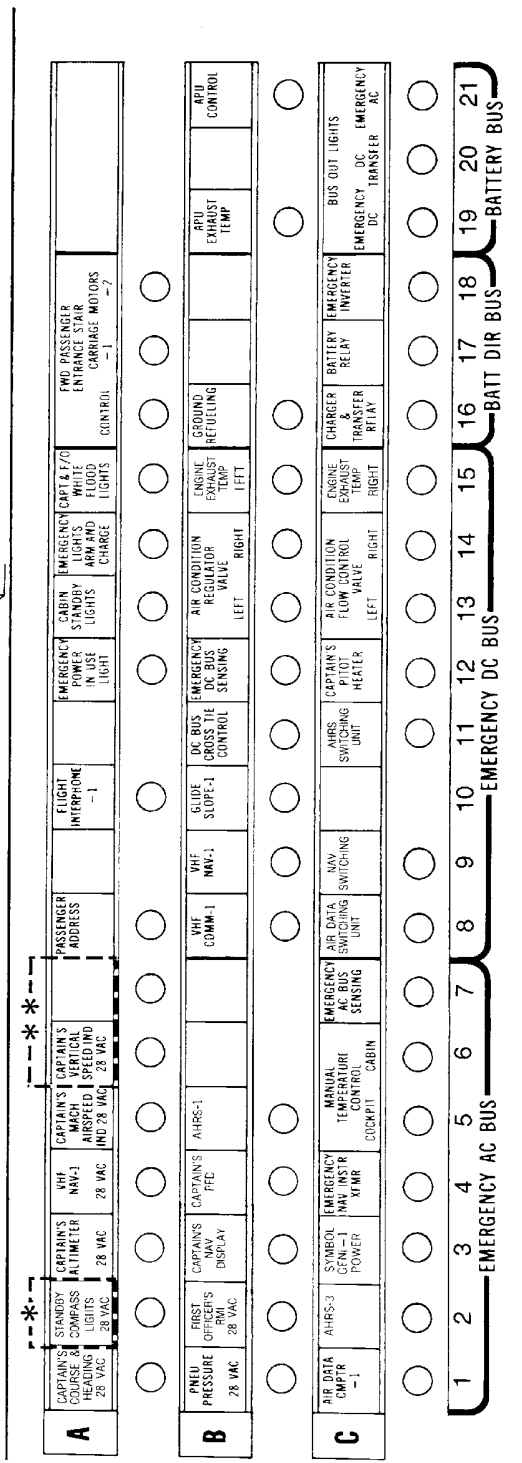
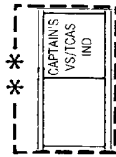
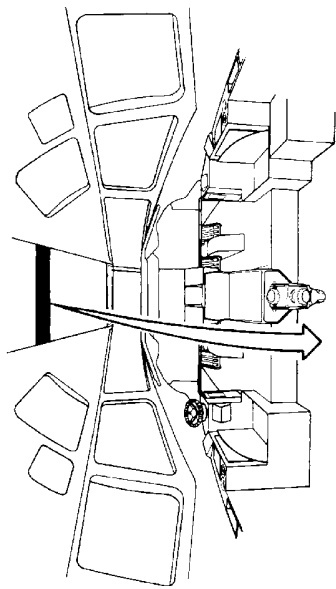
Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 13 of 14)

EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

31-12-03

TP-80MM-WJE

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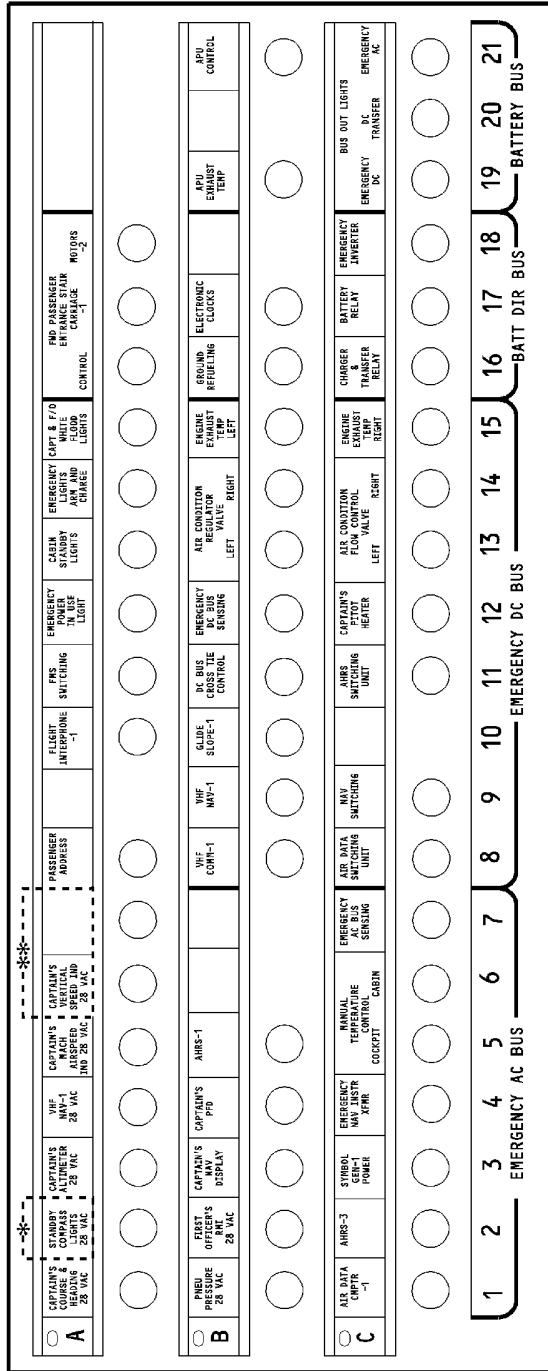
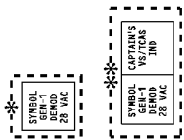
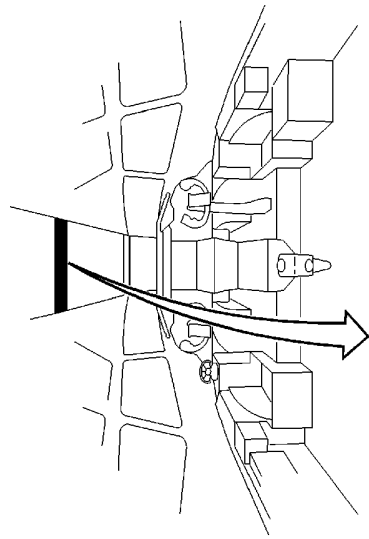
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Overhead Circuit Breaker Panel
Figure 1/31-12-03-990-801 (Sheet 14 of 14)

EFFECTIVITY
WJE 407, 408, 411

31-12-03

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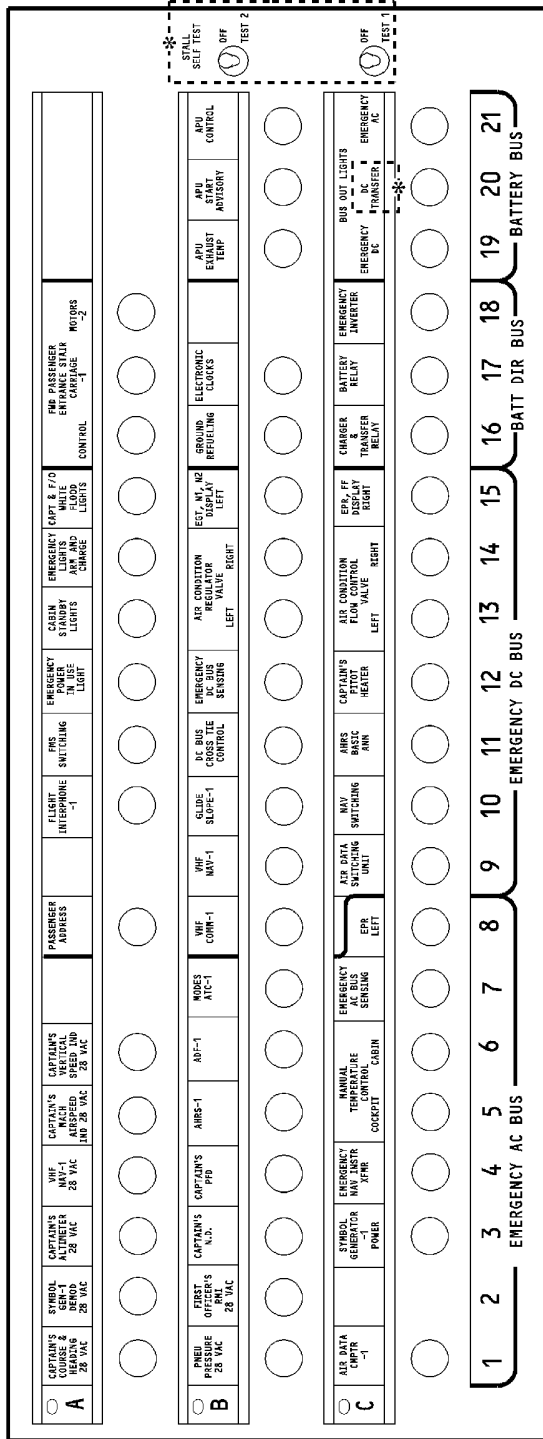
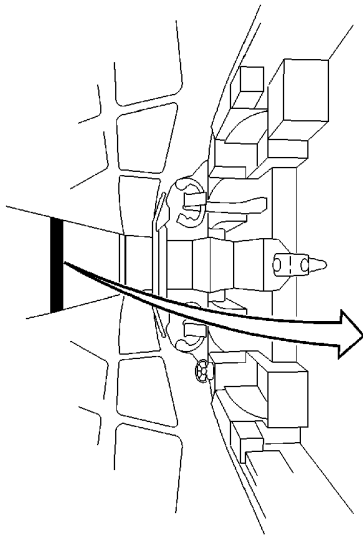
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Overhead Circuit Breaker Panel (with SB 34-285 Rev. 4 incorp.)
Figure 2/31-12-03-990-802 (Sheet 1 of 6)

EFFECTIVITY
WJE 407, 408, 411, 881

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



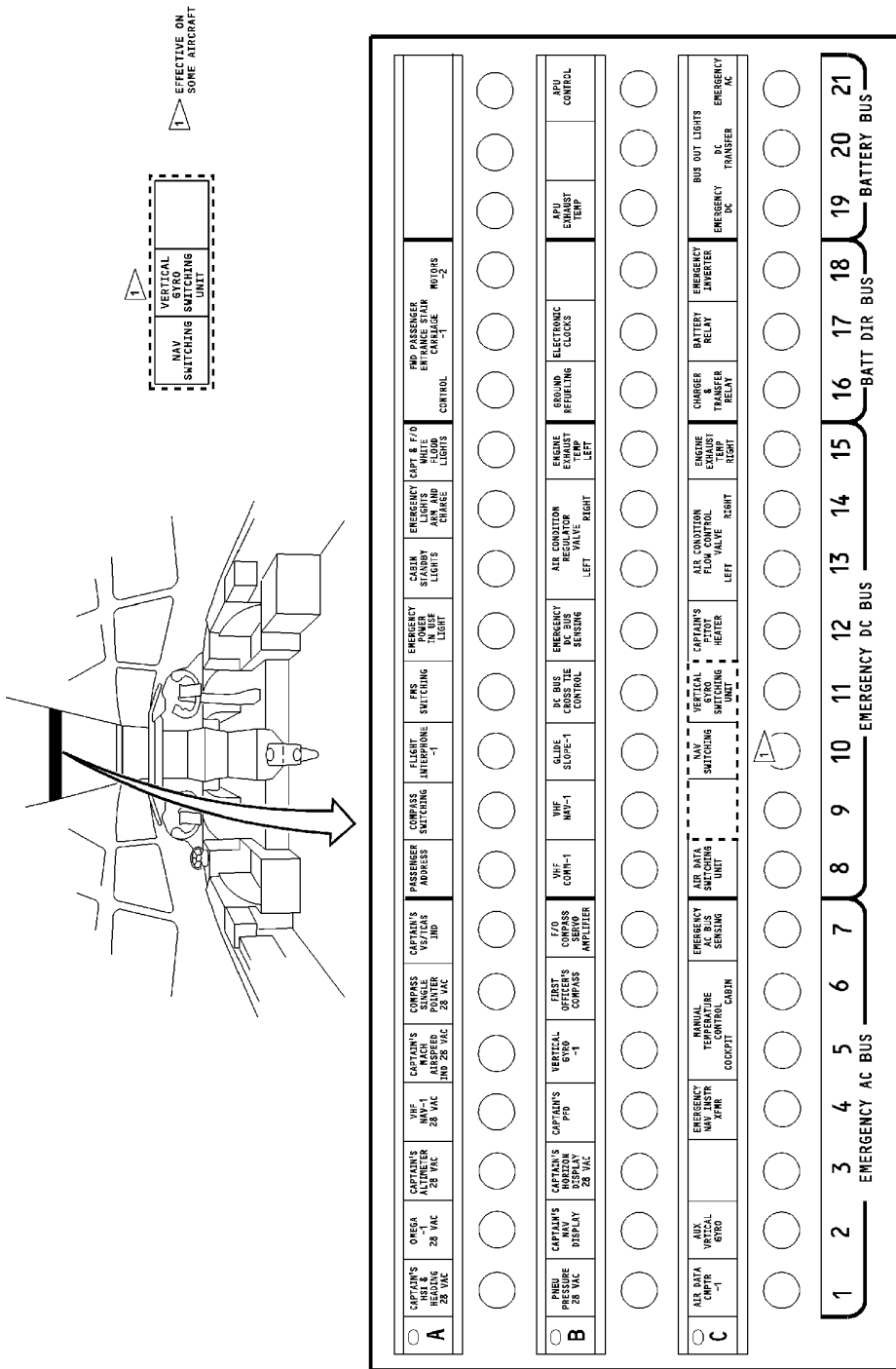
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Overhead Circuit Breaker Panel (with SB 34-285 Rev. 4 incorp.)
Figure 2/31-12-03-990-802 (Sheet 2 of 6)

EFFECTIVITY
WJE 406

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1623

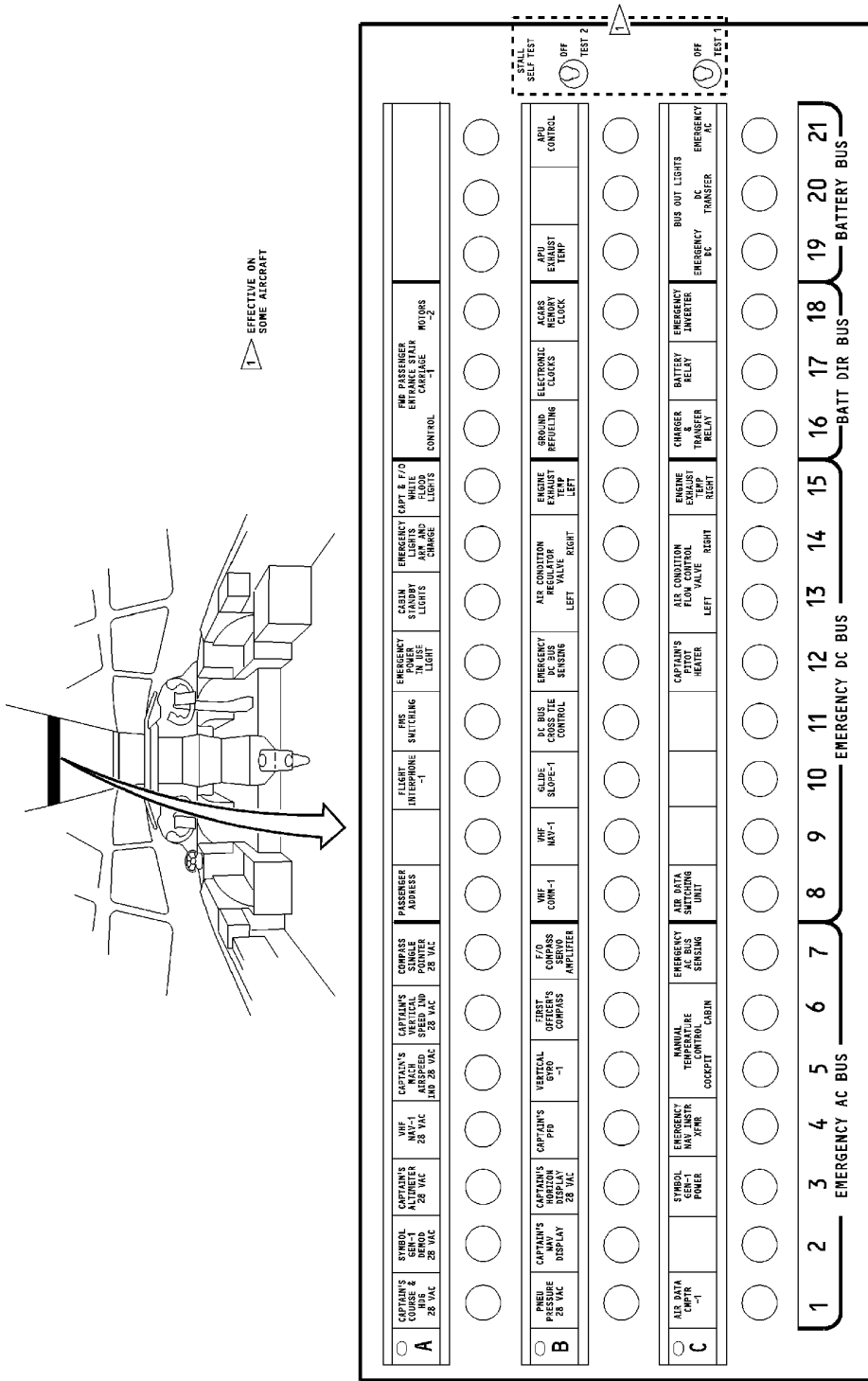
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**Overhead Circuit Breaker Panel (with SB 34-285 Rev. 4 incorp.)
Figure 2/31-12-03-990-802 (Sheet 3 of 6)**

EFFECTIVITY
WJE 880

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1625

CAGIGDS

Overhead Circuit Breaker Panel (with SB 34-285 Rev. 4 incorp.)
Figure 2/31-12-03-990-802 (Sheet 5 of 6)

EFFECTIVITY
WJE 883

31-12-03

MD-80 AIRCRAFT MAINTENANCE MANUAL

AFT OVERHEAD SWITCH PANEL - DESCRIPTION AND OPERATION

1. General

A. The aft overhead switch panel is a unit of the overhead panel located in the flight compartment.

2. Description

WJE 401-406, 409, 410, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A. The aft overhead switch panel provides a mounting base for the ground service electrical power panel, audio control panel, emergency floodlight, ground proximity warning speaker, oxygen regulator, mechanic call switch, flight recorder switch, and engine fire detection panel.

WJE 407, 408, 411, 415-427, 429

B. The aft overhead switch panel provides a mounting base for the ground service electrical power panel, audio control panel, emergency floodlight, oxygen regulator, ground proximity warning speaker, mechanic call switch, flight recorder switch, and engine fire detection panel.

WJE ALL

3. Operation

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A. Instructions for operation of controls and indicators on the center overhead panel are included in the specific control or indicator system chapter of the maintenance manual.

WJE ALL

EFFECTIVITY
WJE ALL

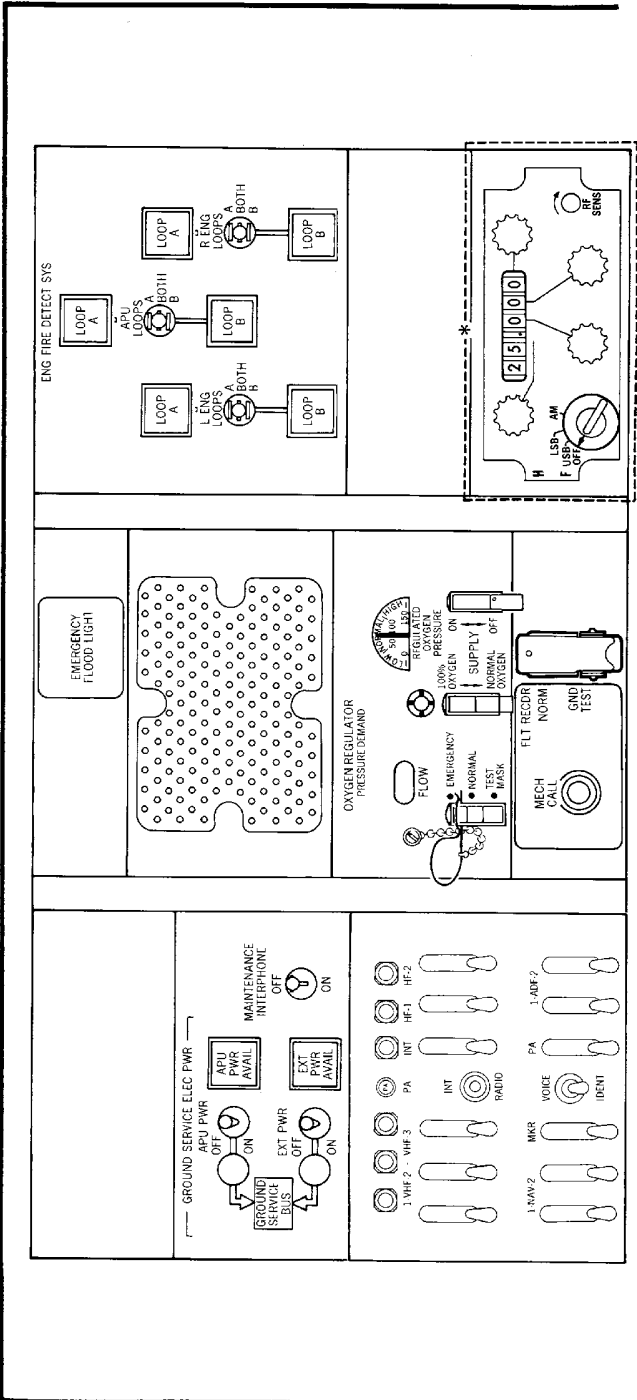
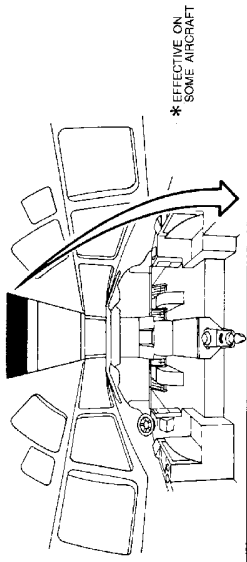
TP-80MM-WJE

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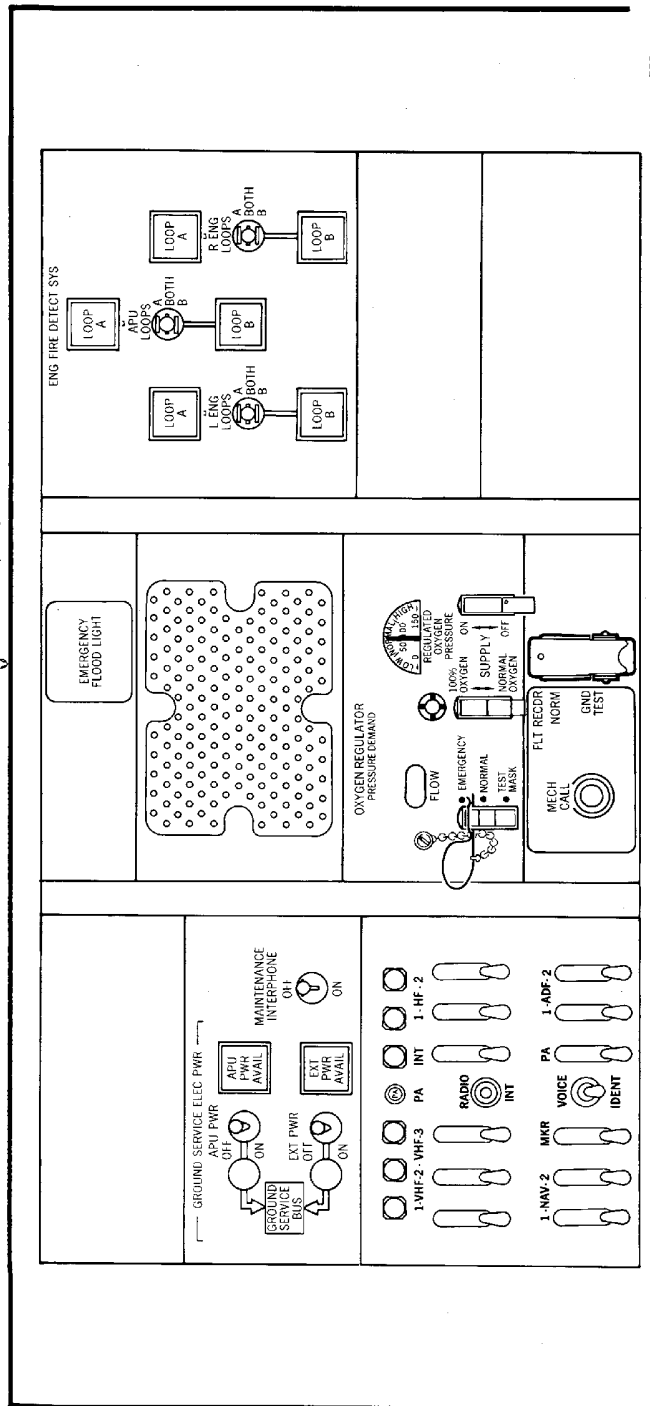
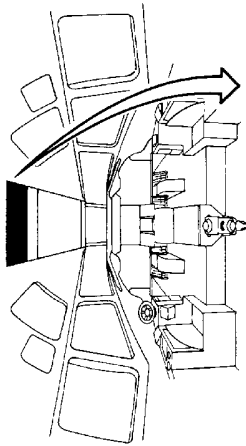


Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 1 of 9)

EFFECTIVITY
WJE 405, 406, 409, 873, 874, 881, 883, 884, 893

31-12-04

MD-80 AIRCRAFT MAINTENANCE MANUAL



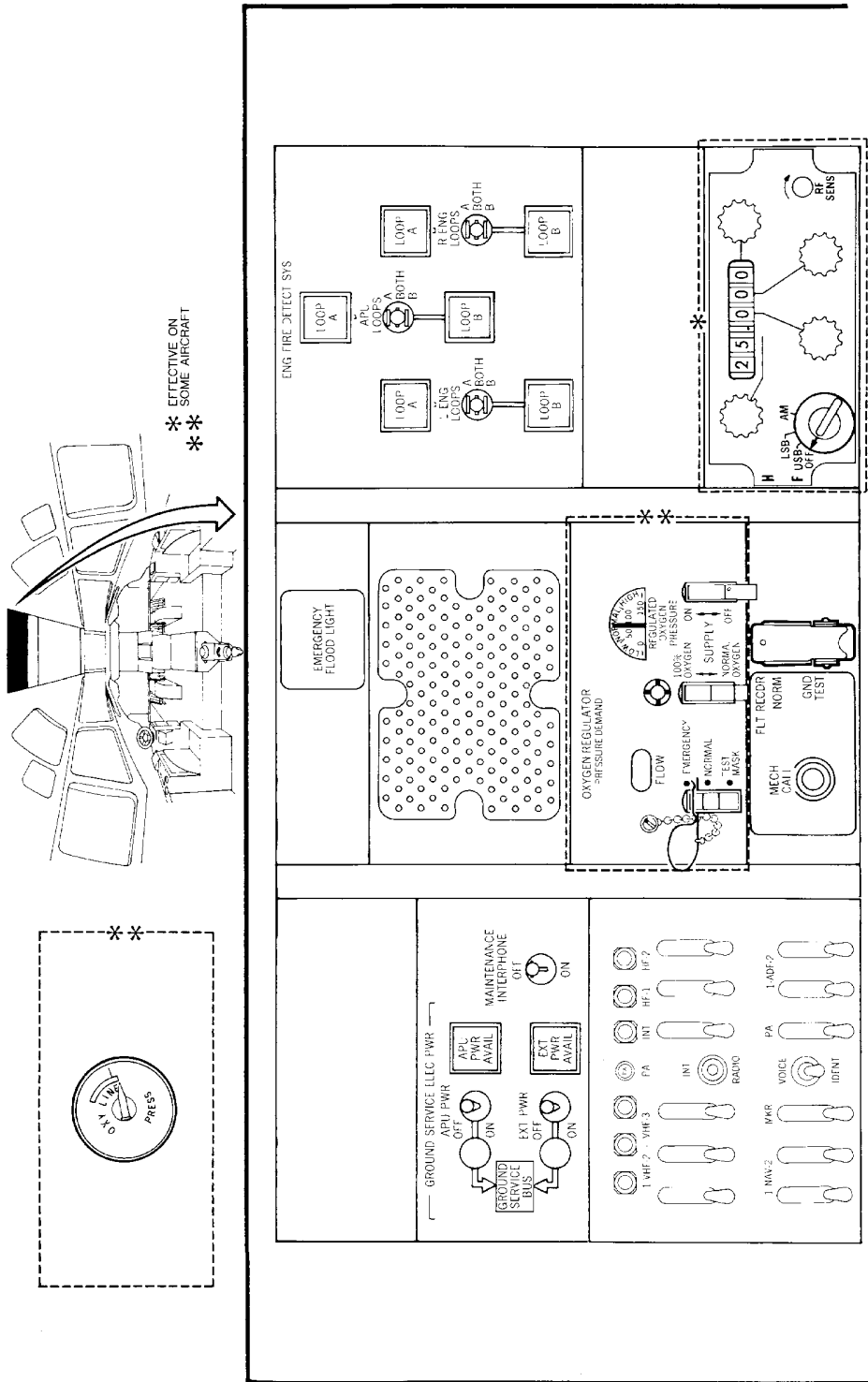
Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 2 of 9)

EFFECTIVITY
WJE 892

31-12-04

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BB82-31-2980

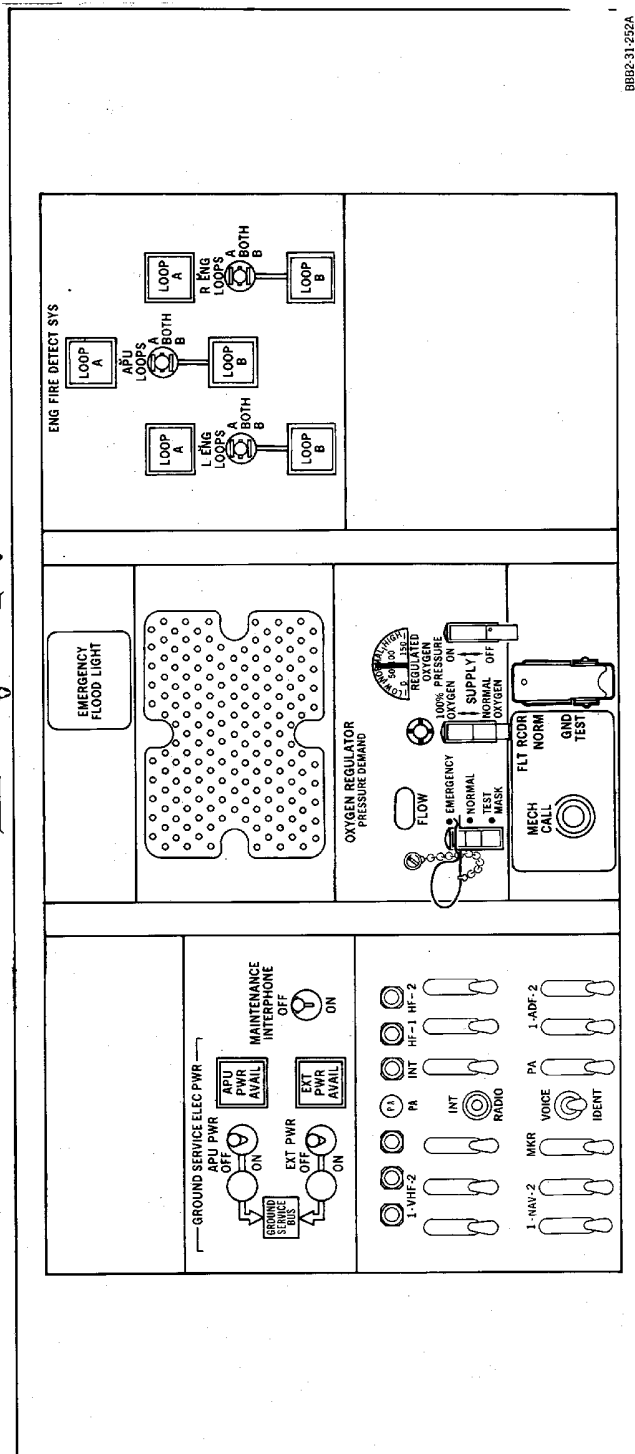
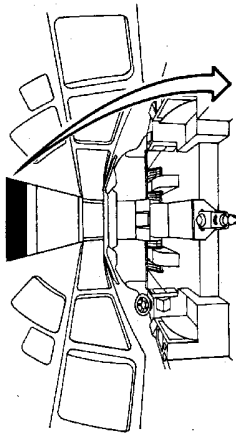


Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 3 of 9)

EFFECTIVITY
WJE 410

31-12-04

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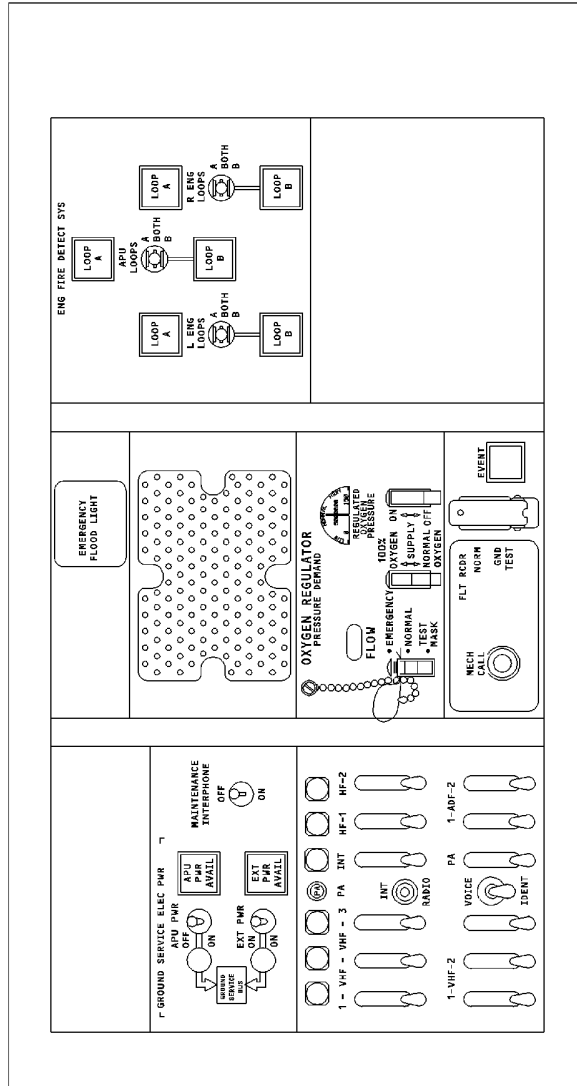
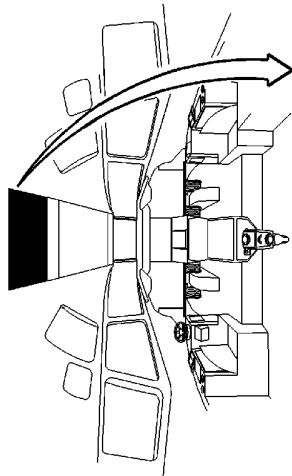
Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 4 of 9)

EFFECTIVITY
WJE 407, 408, 411, 880

31-12-04

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Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 5 of 9)

CAG (IGDS)

EFFECTIVITY
WJE 875, 876, 878, 879

TP-80MM-WJE

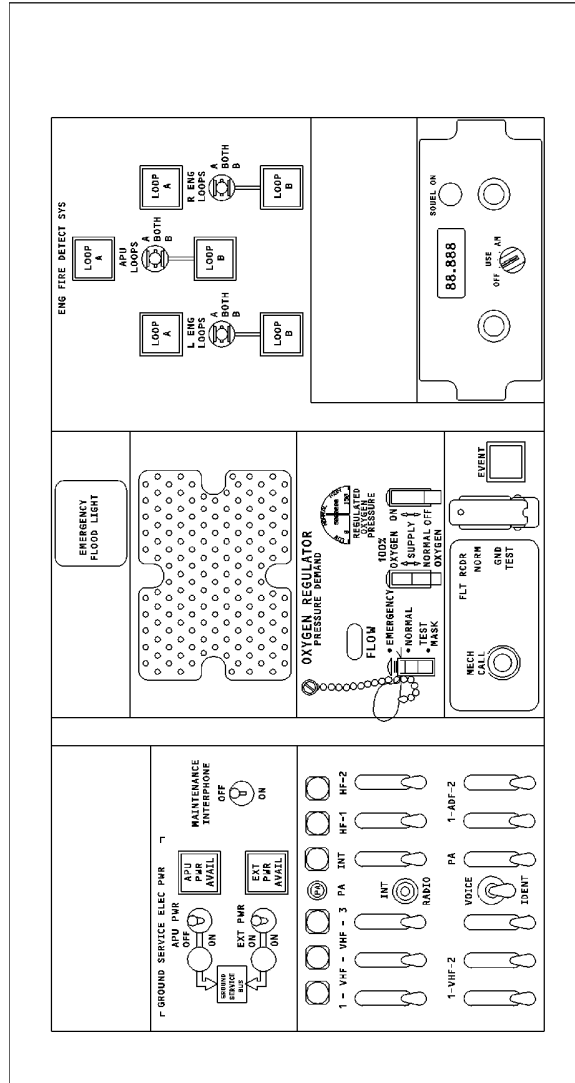
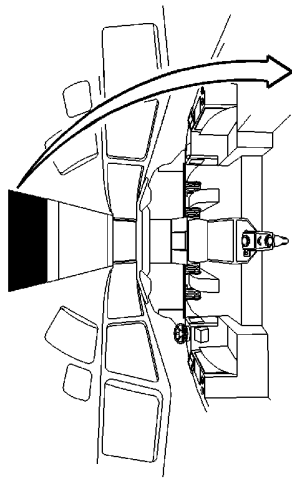
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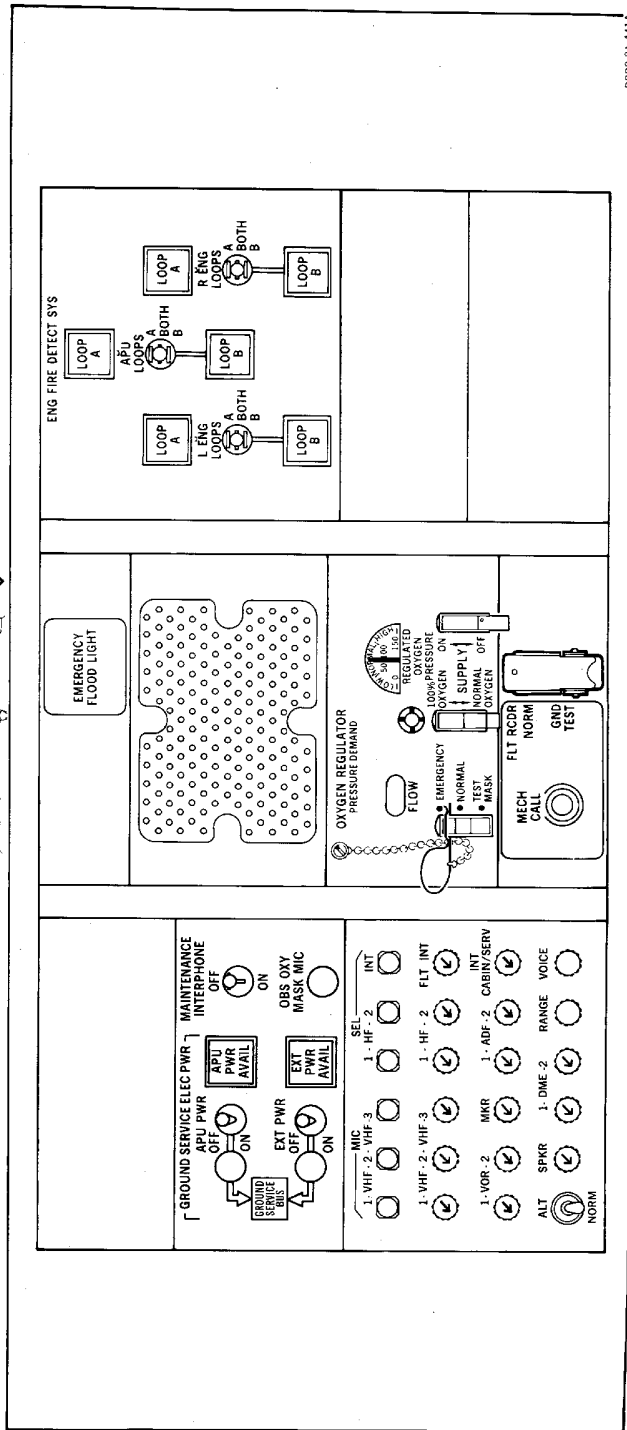
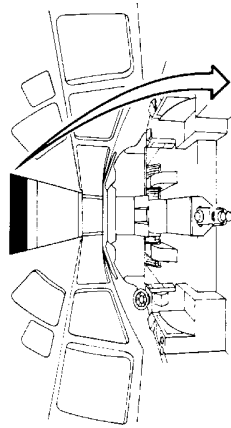
Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 6 of 9)

CAG(IGDS)

EFFECTIVITY
WJE 877

TP-80MM-WJE

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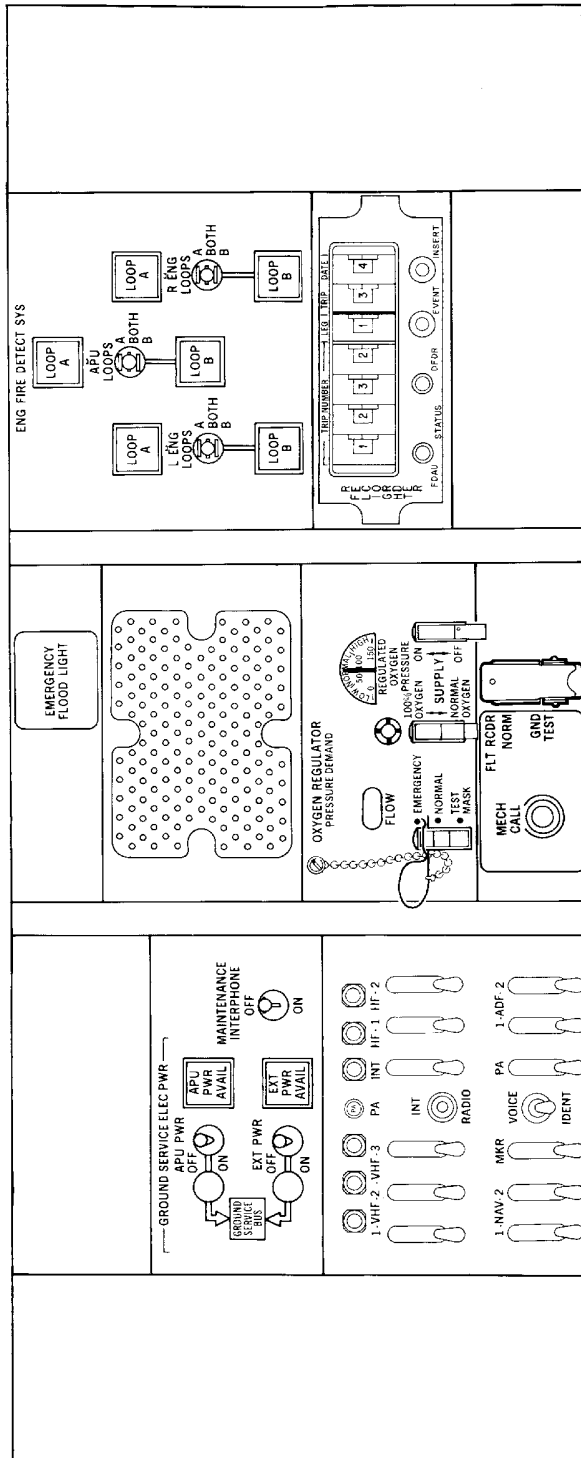
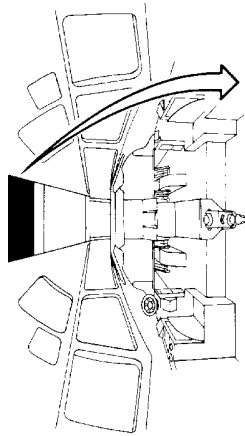
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Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 7 of 9)

EFFECTIVITY
WJE 886, 887

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AIRCRAFT MAINTENANCE MANUAL



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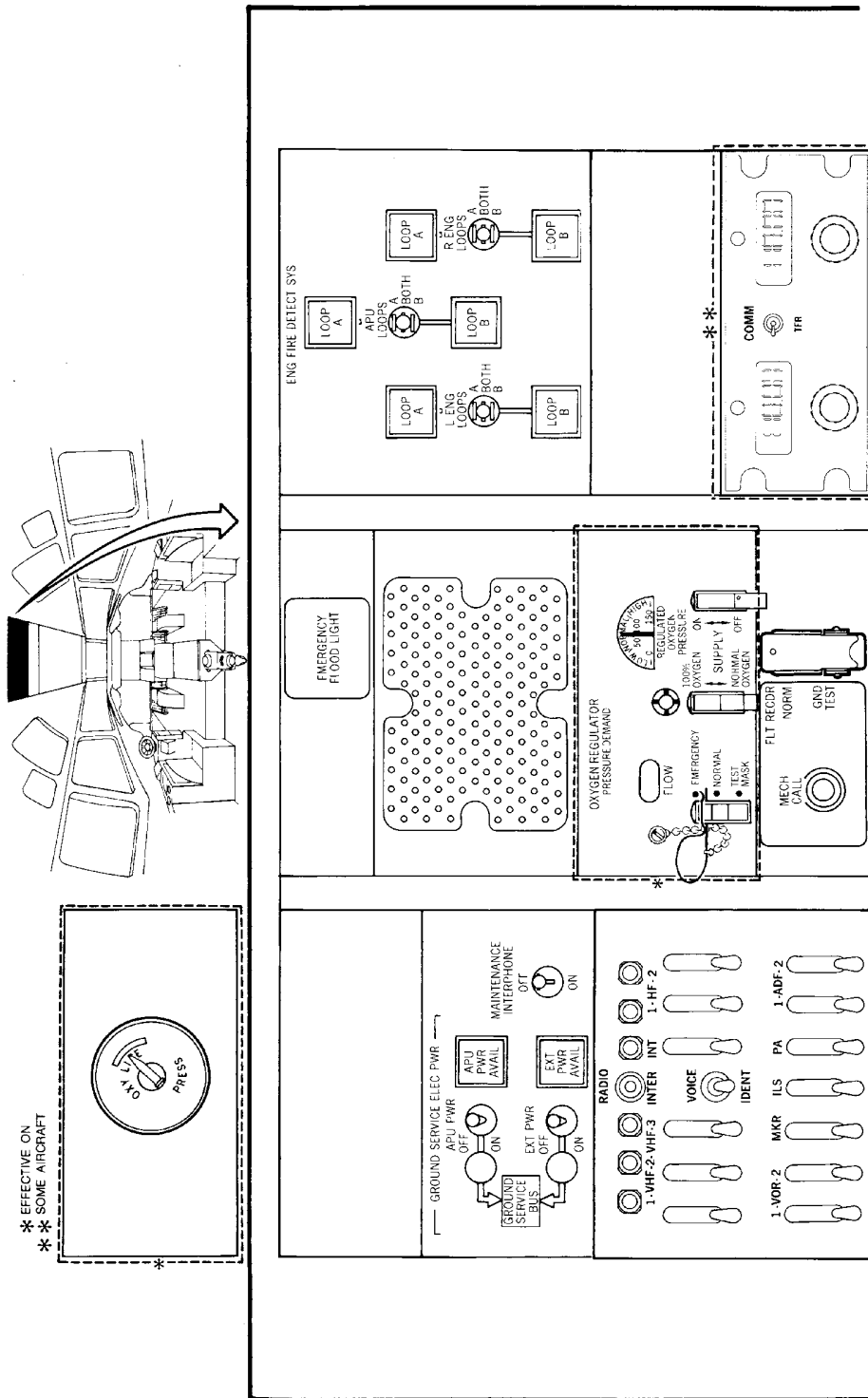
Aft Overhead Switch Panel
Figure 1/31-12-04-990-801 (Sheet 8 of 9)

EFFECTIVITY
WJE 401-404

31-12-04

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BBB2-31-606B



Aft Overhead Switch Panel
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EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

TP-80MM-WJE

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PILOT'S DISPLAY UNIT PANEL - DESCRIPTION AND OPERATION

1. General

A. The two pilot's display unit panels are located one on each side of the overhead switch panel.

2. Description

WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871-879, 886, 887, 891-893

A. The display unit panel includes the following: a cockpit speaker, a map light with switch and an air conditioned air outlet.

WJE 405-411, 880, 881, 883, 884

B. The display unit panel includes the following: a cockpit speaker, a map light with switch, a heads-up display on some aircraft, and an air conditioned air outlet.

WJE ALL

3. Operation

A. Instructions for operation of equipment on the pilot's display unit panel are included in the specific system chapter of the maintenance manual.

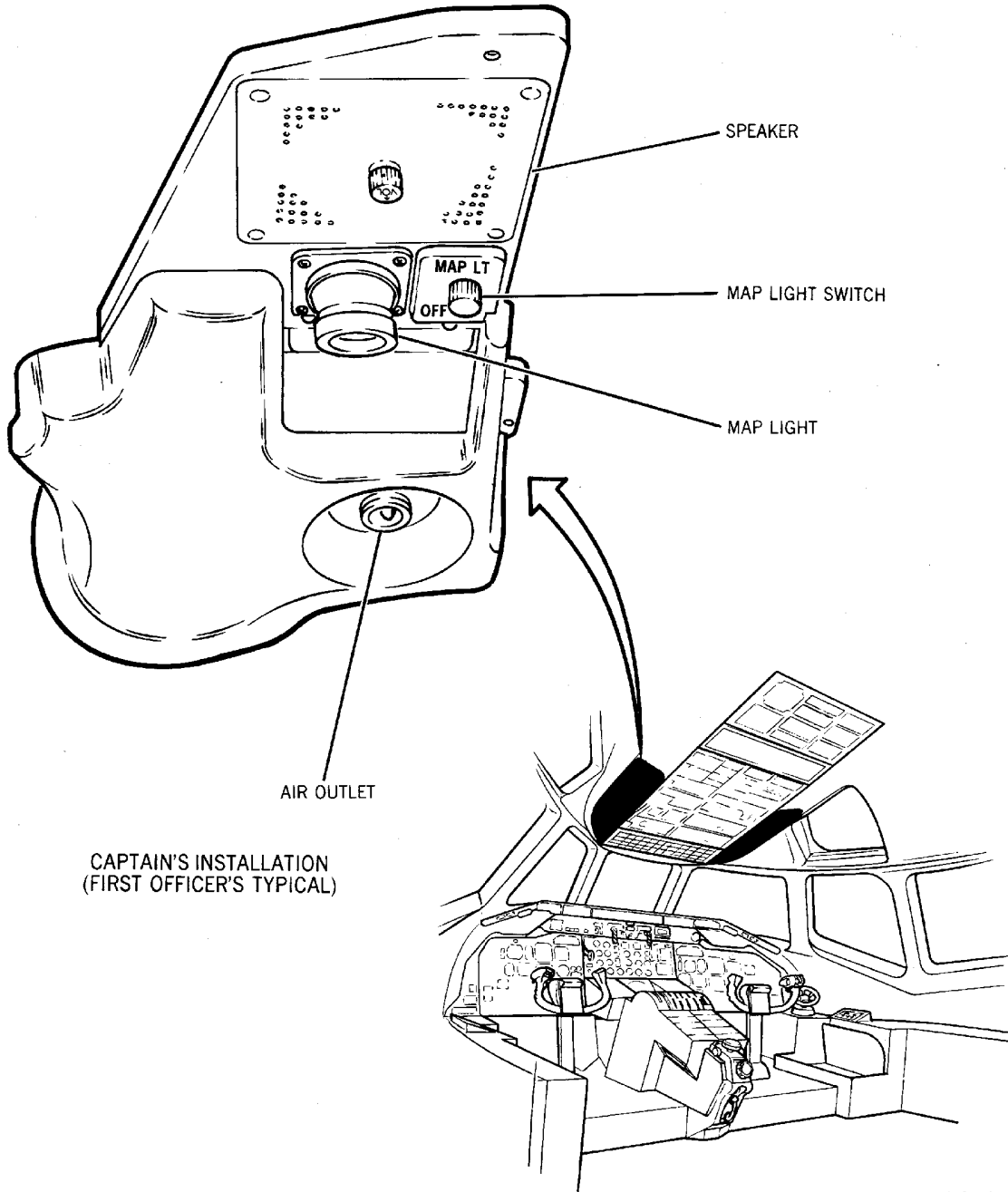
EFFECTIVITY
WJE ALL

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CAPTAIN'S INSTALLATION
(FIRST OFFICER'S TYPICAL)

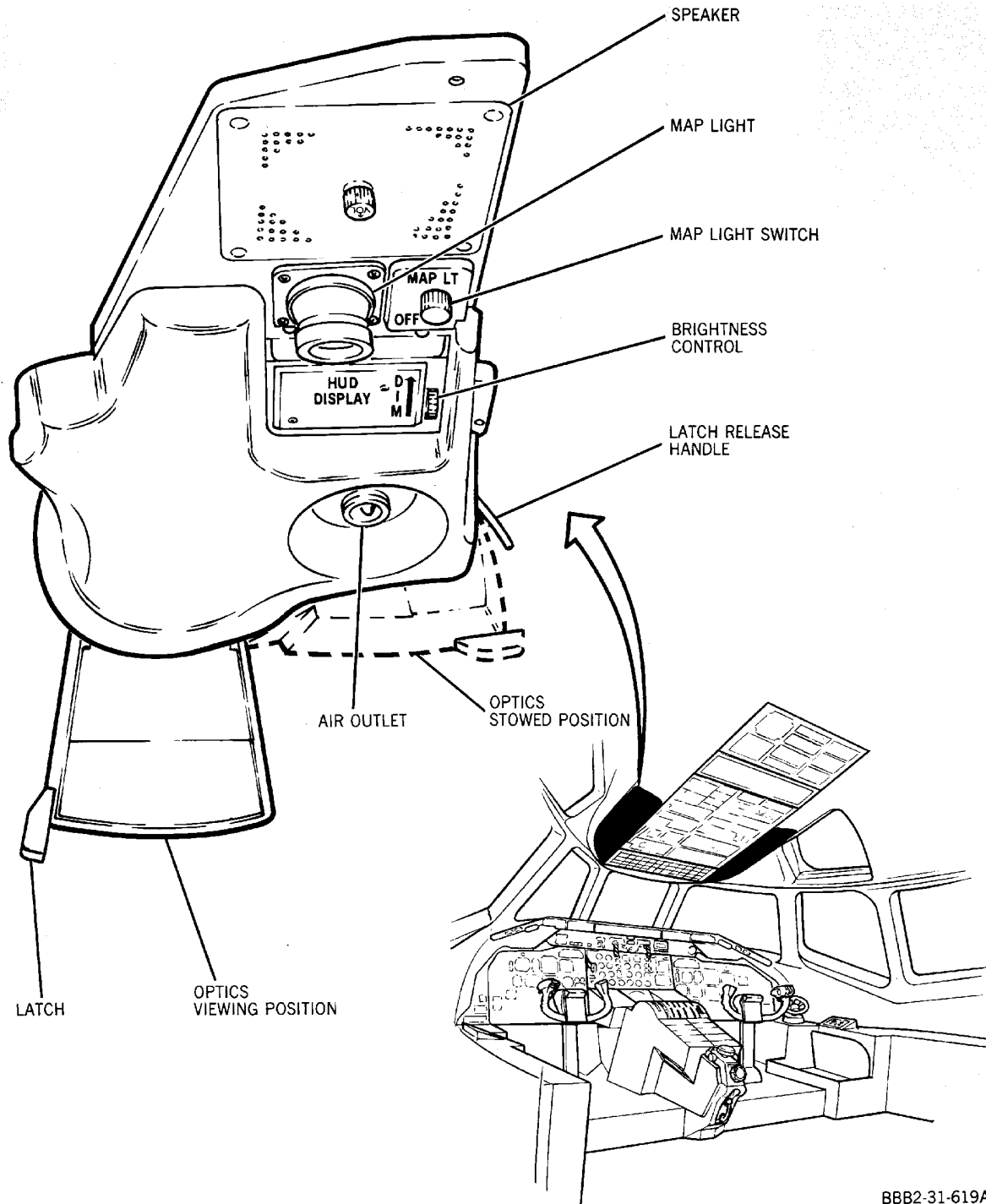
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Pilot's Display Unit Panel
Figure 1/31-12-05-990-801 (Sheet 1 of 2)

EFFECTIVITY
WJE 401-406, 409, 410, 412, 414-427, 429, 861-866,
868, 869, 871-879, 884, 886, 887, 891-893

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Pilot's Display Unit Panel
Figure 1/31-12-05-990-801 (Sheet 2 of 2)

EFFECTIVITY
WJE 407, 408, 411, 880, 881, 883

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AIRCRAFT MAINTENANCE MANUAL
PEDESTAL - DESCRIPTION AND OPERATION

1. General

- A. The pedestal is located below the center main instrument panel between the captain's and first officer's seats. The pedestal structural frame is attached to flight compartment floor structure and the individual control panels are mounted to the structural frame. All control panels and controls can be reached by either the captain or first officer.

2. Description

WJE 407, 408, 411

- A. The forward pedestal (Figure 1) has a radar indicator, a light control panel, two automatic direction finding (ADF) control panels, a SELCAL control panel, an air traffic control (ATC) panel ; has a radar indicator, two omega control panels, and an automatic direction finding (ADF) control panel; has a radar indicator, two automatic direction finding (ADF) control panels, and two audio control panels; the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls.
- B. The aft pedestal (Figure 2) has very high frequency control panels, VHF-1 and VHF-2, two audio control panels, a heads-up display (HUD) control panel ; has very high frequency control panels, VHF-1 and VHF-2, a performance maintenance system (PMS) control panel, a heads-up display (HUD) control panel; has very high frequency control panels, VHF-1 and VHF-2, a performance maintenance system (PMS) control panel, an air traffic control (ATC) panel; has very high frequency control panels, VHF-1 and VHF-2, a performance maintenance system (PMS) control panel, a heads-up display (HUD) control panel, an air traffic control (ATC) panel or Mode-S ATC panel, an instrument light control panel, a SELCAL control panel; the aileron and rudder trim controls, the stabilizer trim switch, and the automatic brake control panel.

WJE 405, 406, 409, 410, 880, 881, 883, 884

- C. The forward pedestal (Figure 1) has a radar indicator, omega control panels, automatic direction finder (ADF) control panels, the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, a control display unit (PMS), an HF control panel on some aircraft, a SELCAL control panel, an air traffic control (ATC) panel, Mode-S ATC on some aircraft, an instrument light control panel, a stabilizer trim switch, an automatic brake control panel on some aircraft, and the aileron and rudder trim controls.

WJE 875-879

- D. The forward pedestal (Figure 1) has a weather radar control panel, two multipurpose control display units (MCDU), the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, -3, an automatic direction finder (ADF) control panel, an air traffic/TCAS control panel, a SELCAL control panel, an instrument light control panel, a stabilizer trim switch, the aileron and rudder trim controls and the auto brake control panel.

WJE 886, 887

- E. The forward pedestal (Figure 1) has a control display unit (PMS), a SELCAL control panel (on aircraft 101-153), a radar indicator, an automatic direction finder (ADF) control panel, an OMEGA control panel, the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, a SELCAL control panel (on aircraft 154-999), two compass controller units (on aircraft 151-999), an instrument light control panel, a Mode-S ATC panel, the stabilizer trim switch, and the aileron and rudder trim controls.

EFFECTIVITY
WJE ALL

TP-80MM-WJE

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Config 1

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WJE 892

- F. The forward pedestal (Figure 1) has a radar indicator, an automatic direction finder (ADF) control panel, omega control panels, the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, a control display unit (PMS), a SELCAL control panel, an air traffic control (ATC) panel, an instrument light control panel, a stabilizer trim switch, the aileron and rudder trim controls. On aircraft 107 and 110 a pusher dump switch is installed. On aircraft 108, the automatic brake control panel is installed.

WJE 873, 874

- G. The forward pedestal (Figure 1) has a radar indicator, an instrument light control panel, an automatic direction finder (ADF) control panel, an air traffic control (ATC) panel, the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, a control display unit (PMS), a SELCAL control panel, a stabilizer trim switch, the aileron and rudder trim controls.

WJE 401-404, 412, 414

- H. The forward pedestal (Figure 1) has a radar indicator, multifunction control display units (MCDU), the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has very high frequency (VHF) control panels VHF-1, -2, an automatic direction finder (ADF) control panel, an ACARS control unit, an air traffic control (ATC) panel, a SELCAL control panel, an instrument light control panel, a stabilizer trim switch, the aileron and rudder trim controls and the auto brake control panel.

WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

- I. The forward pedestal (Figure 1) has a radar control panel, two multifunction control display units (MCDU), the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has an air traffic control panel (ATC), an instrument light control panel, a SELCAL control panel, very high frequency control panels VHF-1 and VHF-2, automatic direction finder control panels ADF-1 and ADF-2, a stabilizer trim switch, the aileron and rudder trim controls and the auto brake control panel.

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- J. The forward pedestal (Figure 1) has a radar indicator with the control panel incorporated, a light control panel, an air traffic control panel, the throttle quadrant and throttles, speed brake and spoilers, flaps and slats, and the various trim controls. The aft pedestal (Figure 2) has control panels for a selective calling control panel, two very high frequency control panels, two automatic direction finding control panels, the aileron and rudder trim controls, and the stabilizer trim switch.

WJE ALL

- K. Mounted within and below the pedestal frame are switch assemblies actuated by the center pedestal controls. These switches and controls are covered in the specific system chapters of the maintenance manual.

3. Operation

- A. Instructions for operation of the controls on the pedestal are included in the specific control system chapter of the maintenance manual.

EFFECTIVITY
WJE ALL

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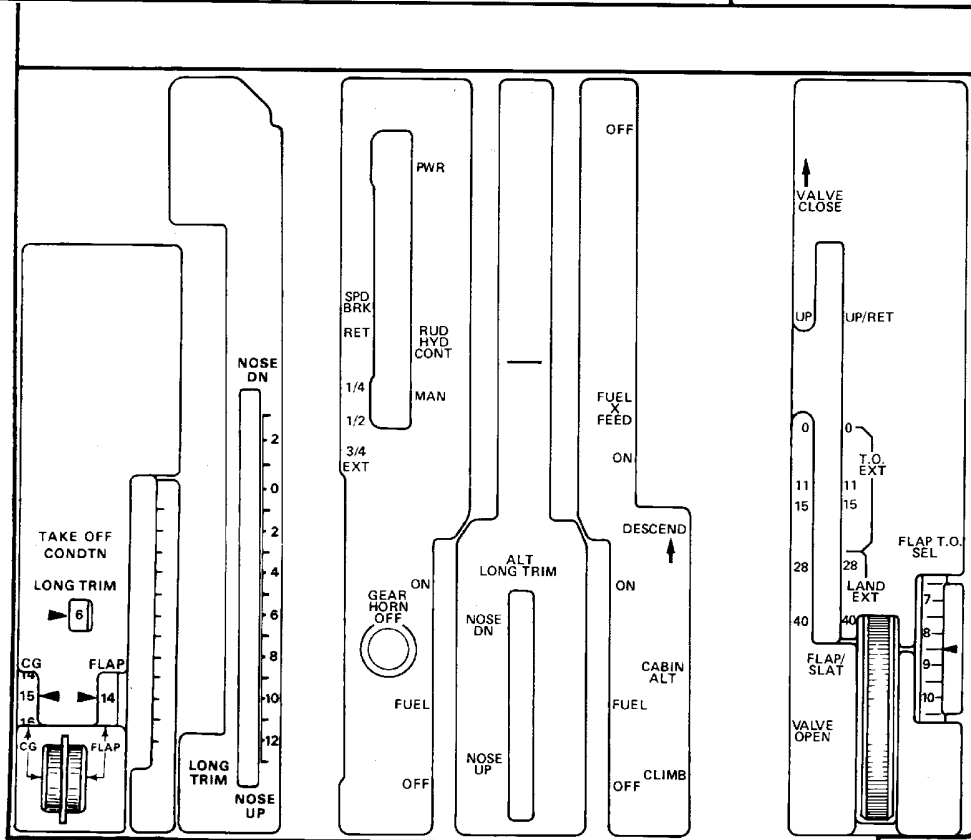
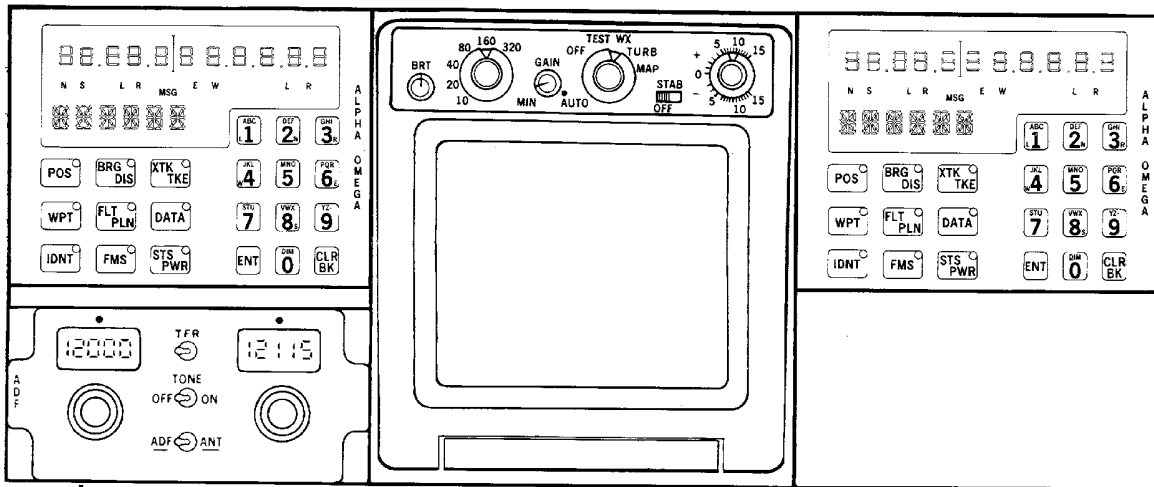
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Config 1

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BBB2-31-863

Pedestal Panels Forward
Figure 1/31-13-01-990-801 (Sheet 1 of 15)

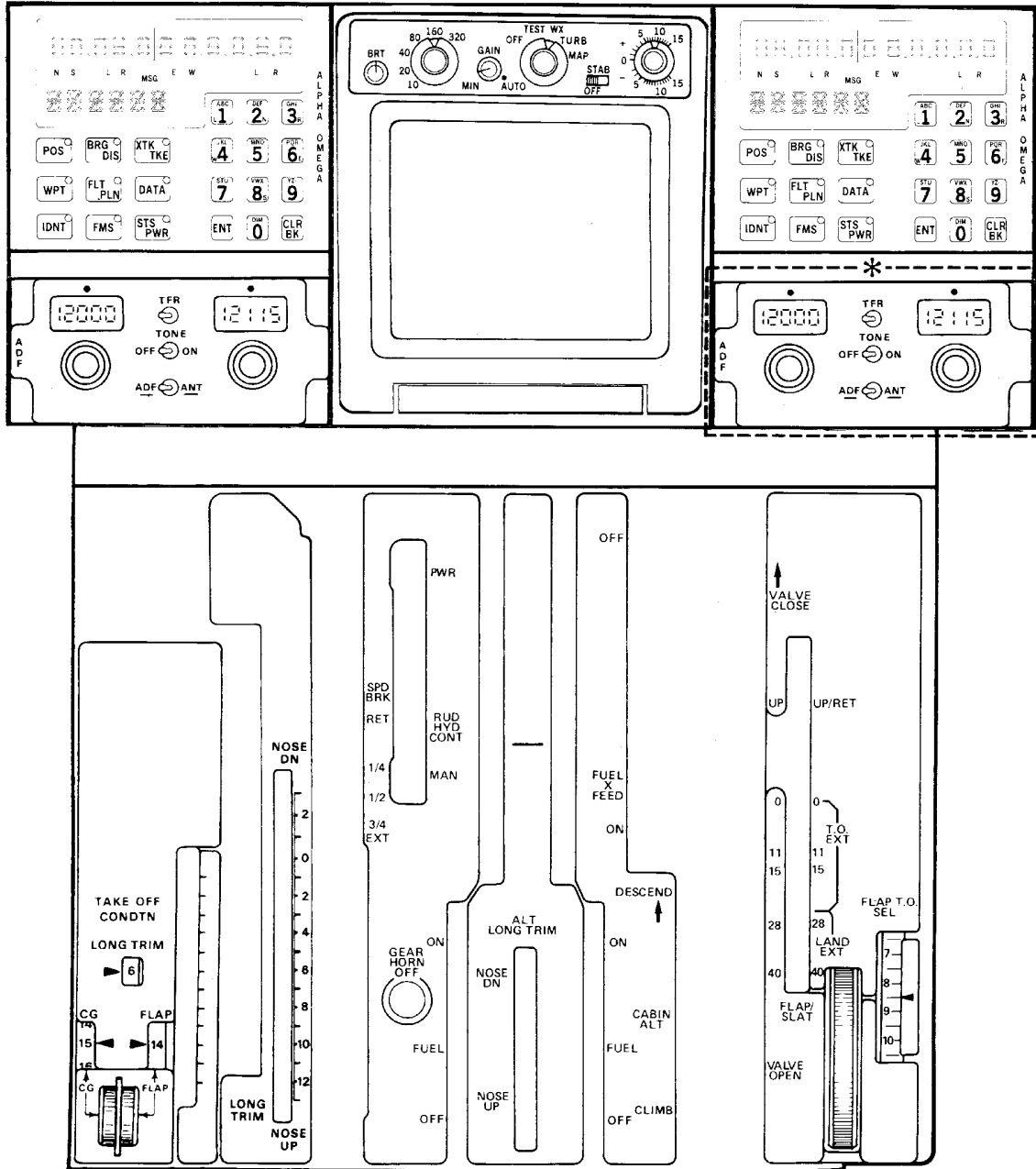
EFFECTIVITY
WJE 880

TP-80MM-WJE

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* EFFECTIVE ON SOME AIRCRAFT

BBB2-31-1169

Pedestal Panels Forward
Figure 1/31-13-01-990-801 (Sheet 2 of 15)

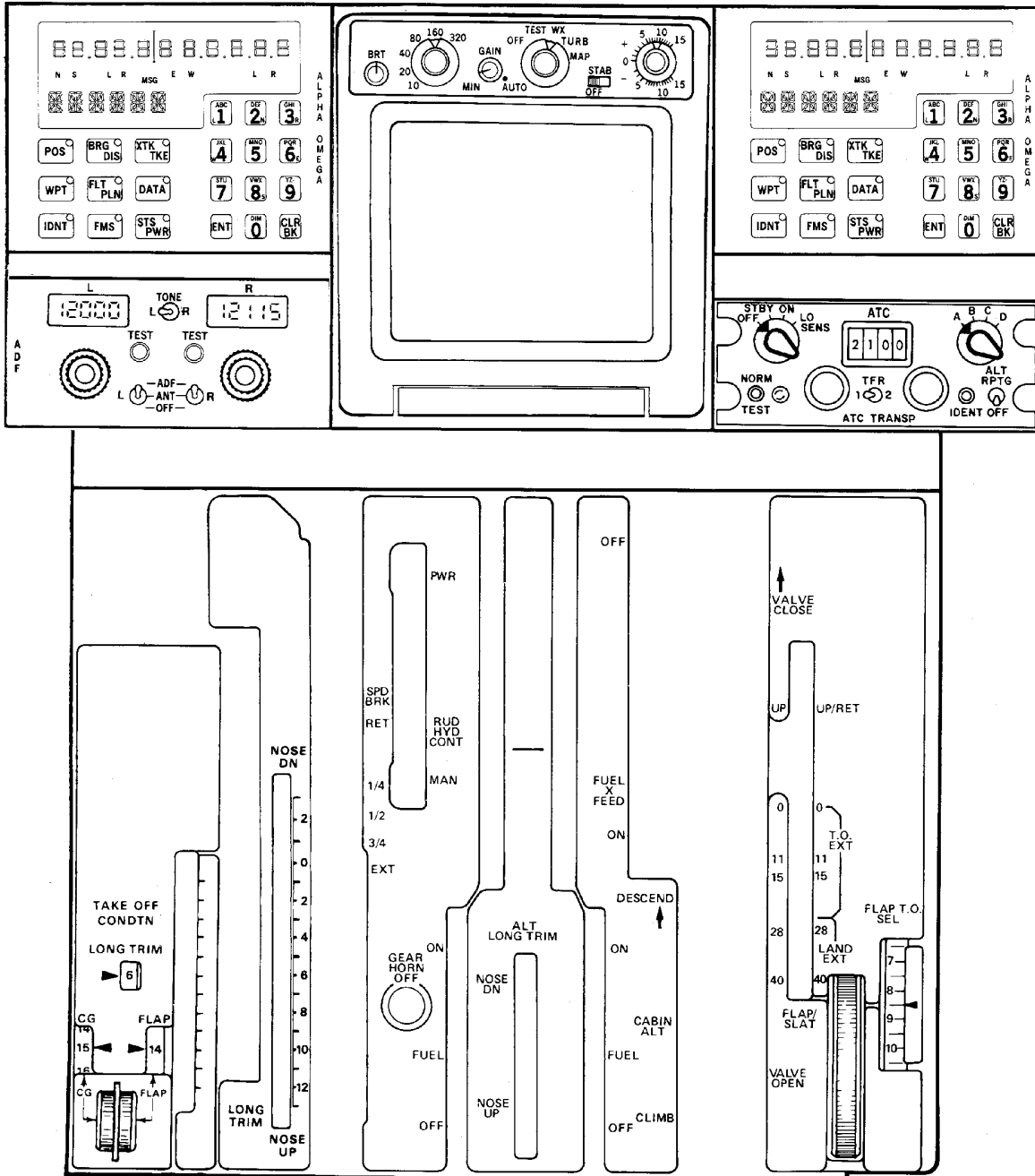
EFFECTIVITY
WJE 405, 409, 884

TP-80MM-WJE

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BBB2-31-941

Pedestal Panels Forward
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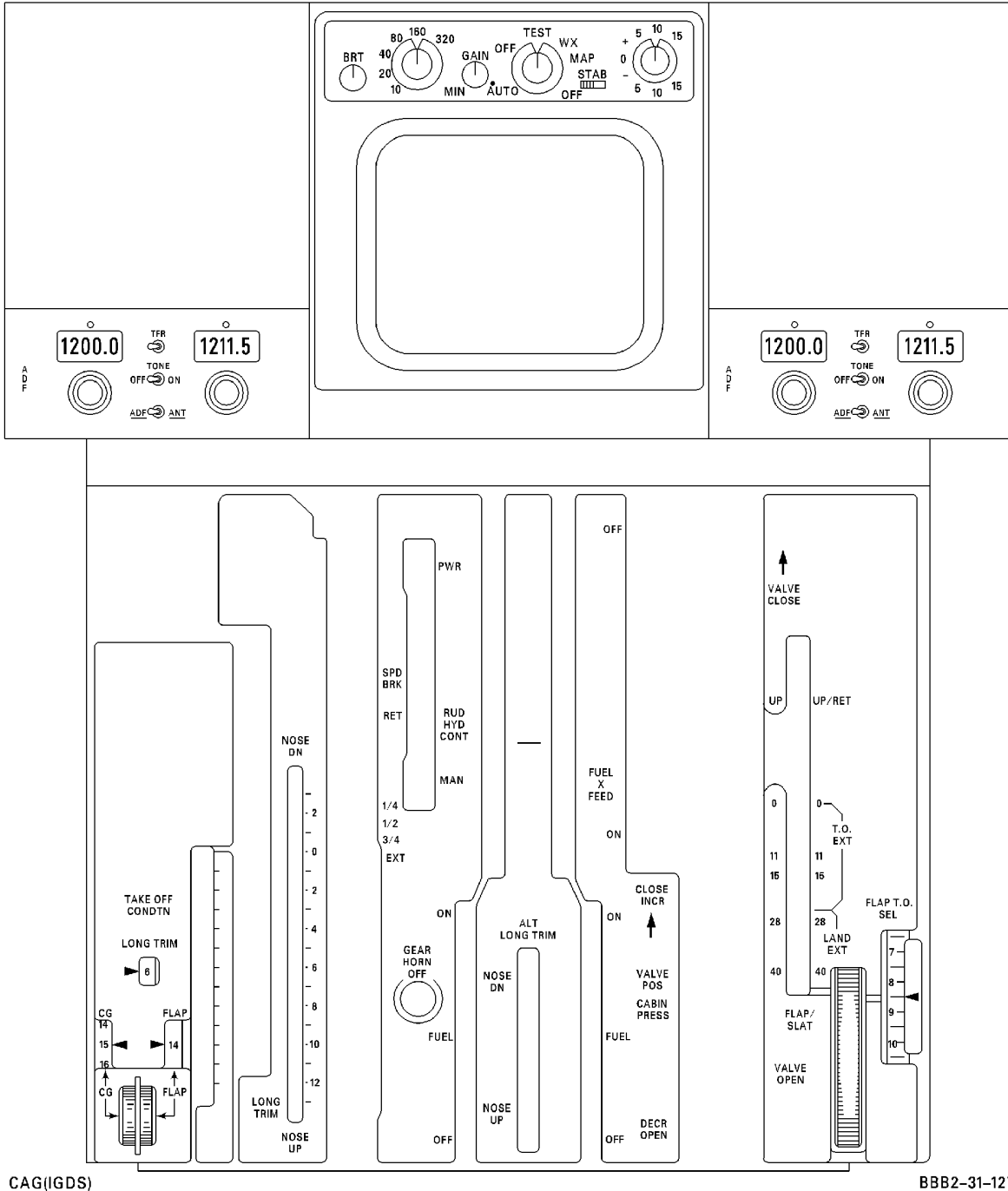
EFFECTIVITY
WJE 881, 883

TP-80MM-WJE

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Pedestal Panels Forward
Figure 1/31-13-01-990-801 (Sheet 4 of 15)

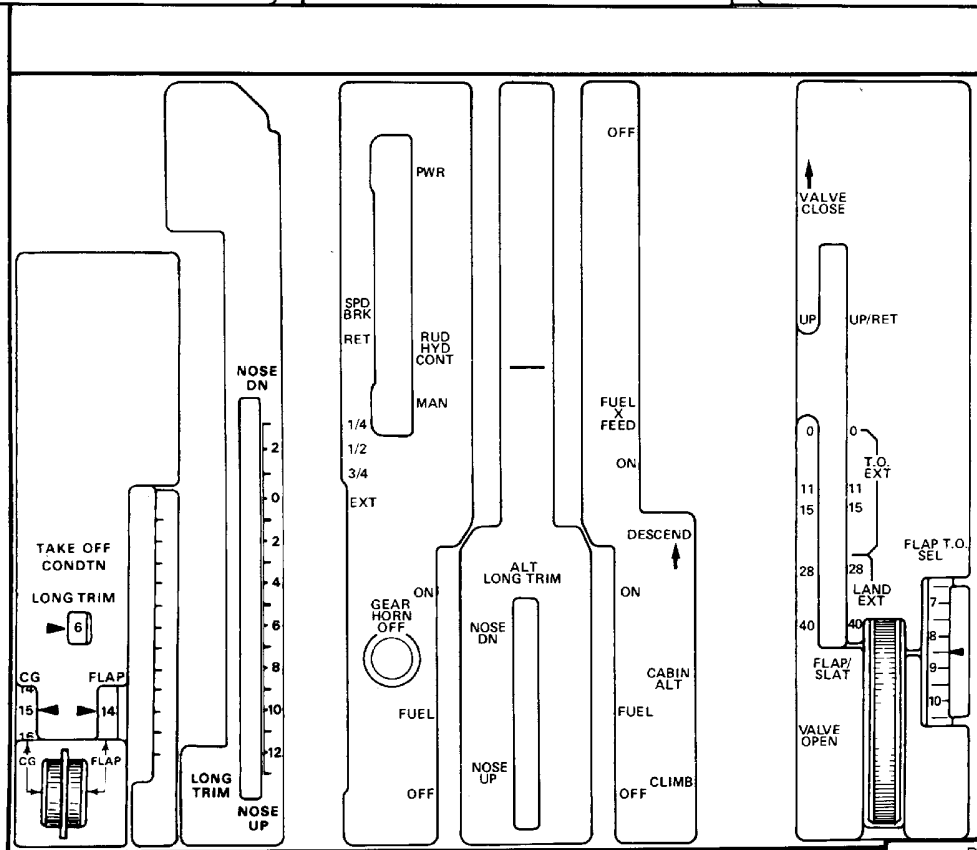
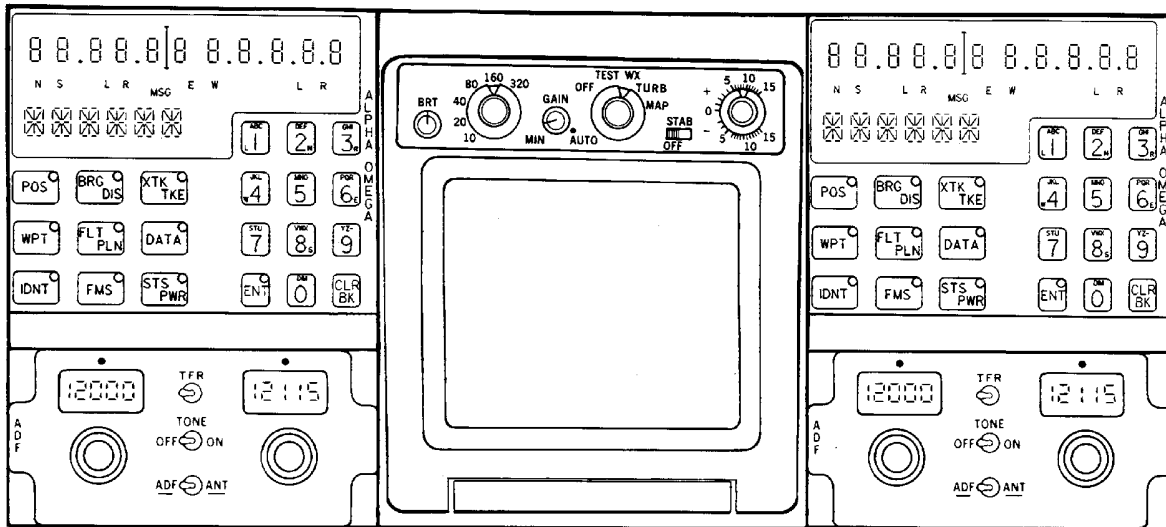
EFFECTIVITY
WJE 406

TP-80MM-WJE

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BBB2-31-773

Pedestal Panels Forward
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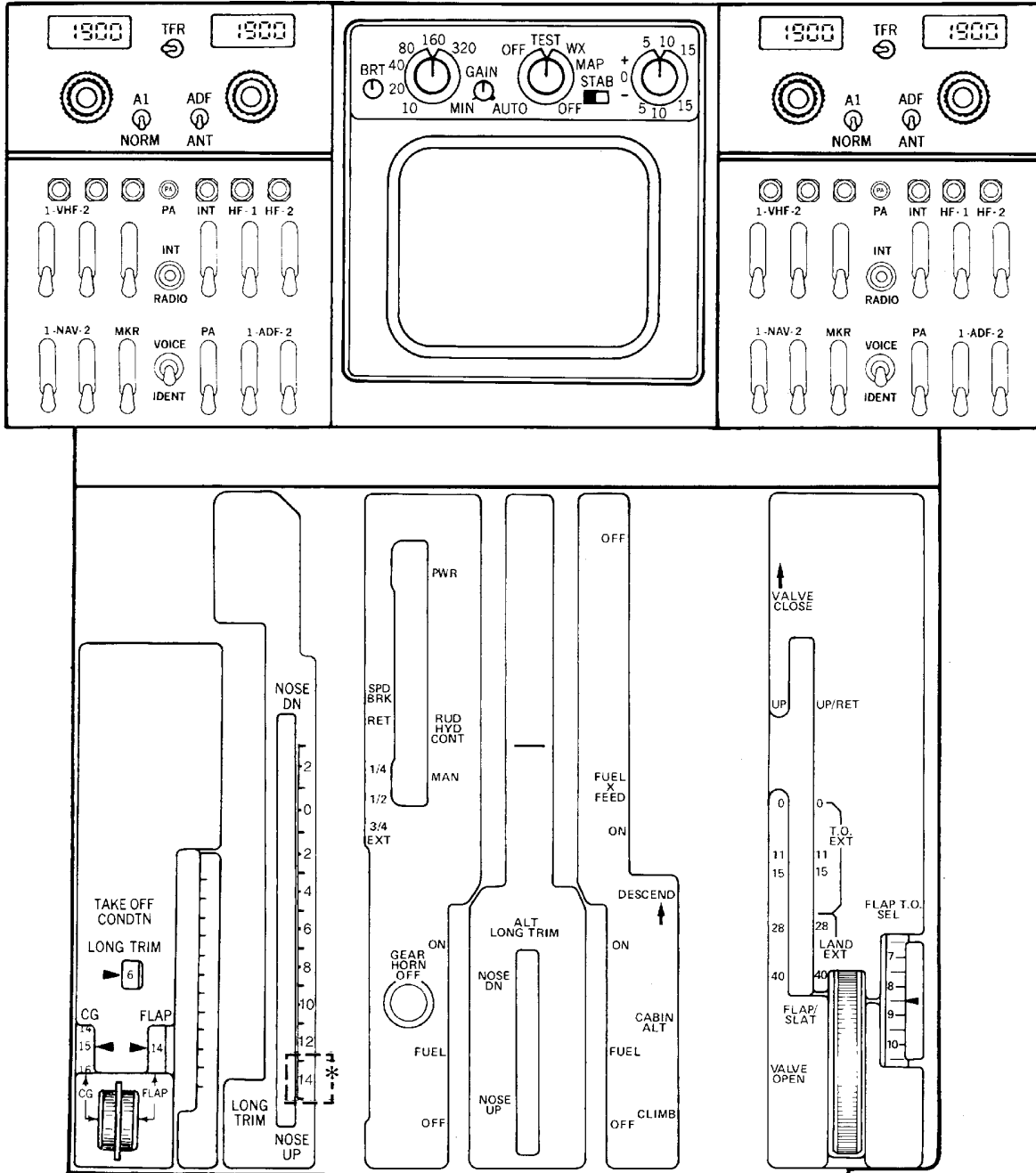
EFFECTIVITY
WJE 410

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*EFFECTIVE ON SOME AIRCRAFT

BBB2-31-1105

Pedestal Panels Forward
Figure 1/31-13-01-990-801 (Sheet 6 of 15)

EFFECTIVITY
WJE 407, 408, 411

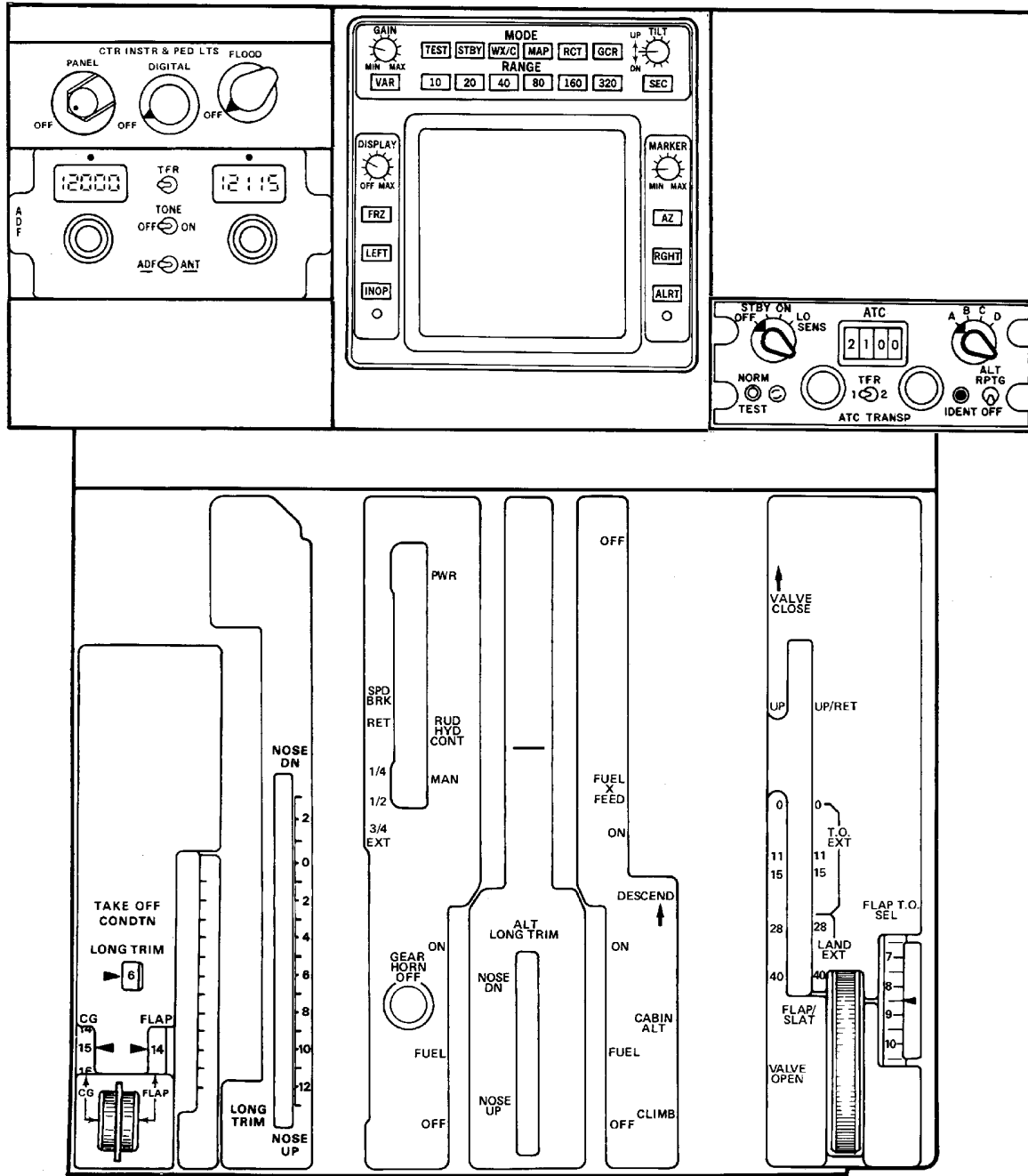
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BBB2-31-587C

Pedestal Panels Forward
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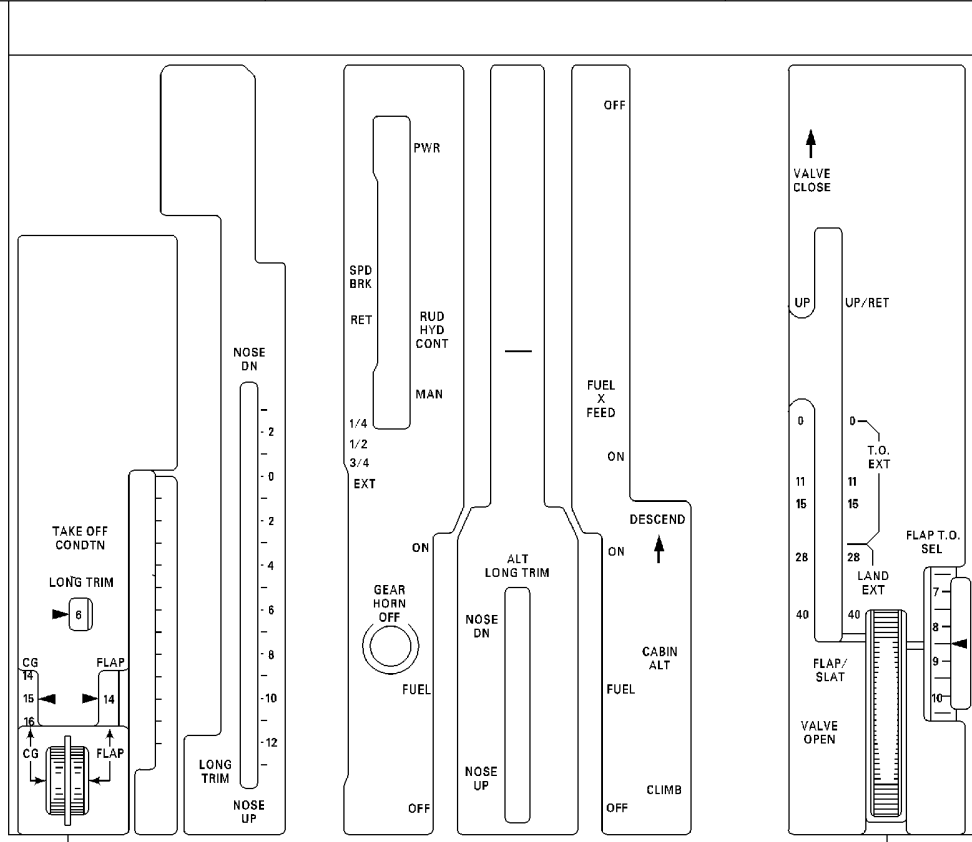
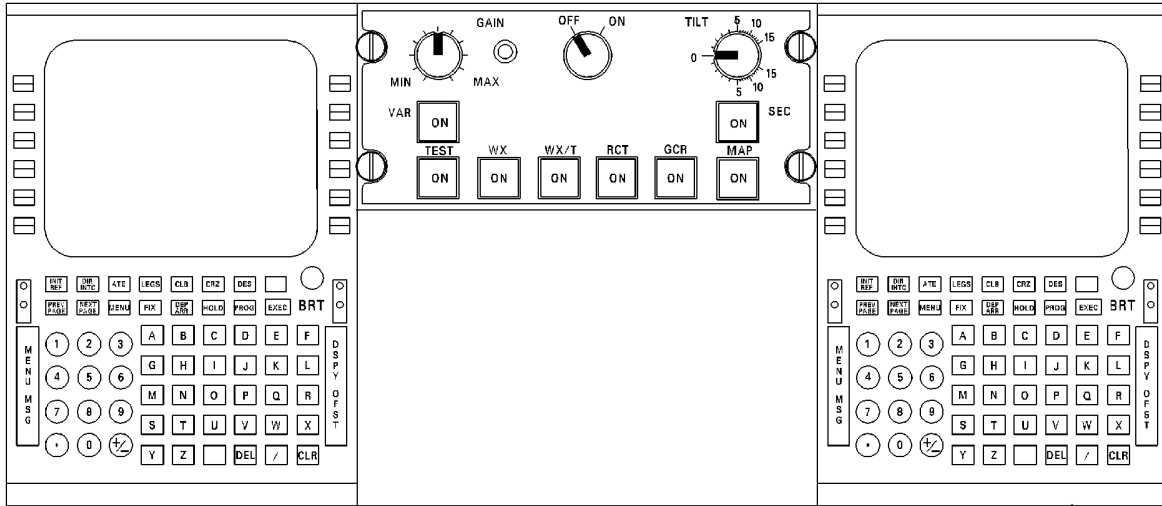
EFFECTIVITY
WJE 873, 874

TP-80MM-WJE

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CAG(IGDS)

BBB2-31-1302

**Pedestal Panels Forward
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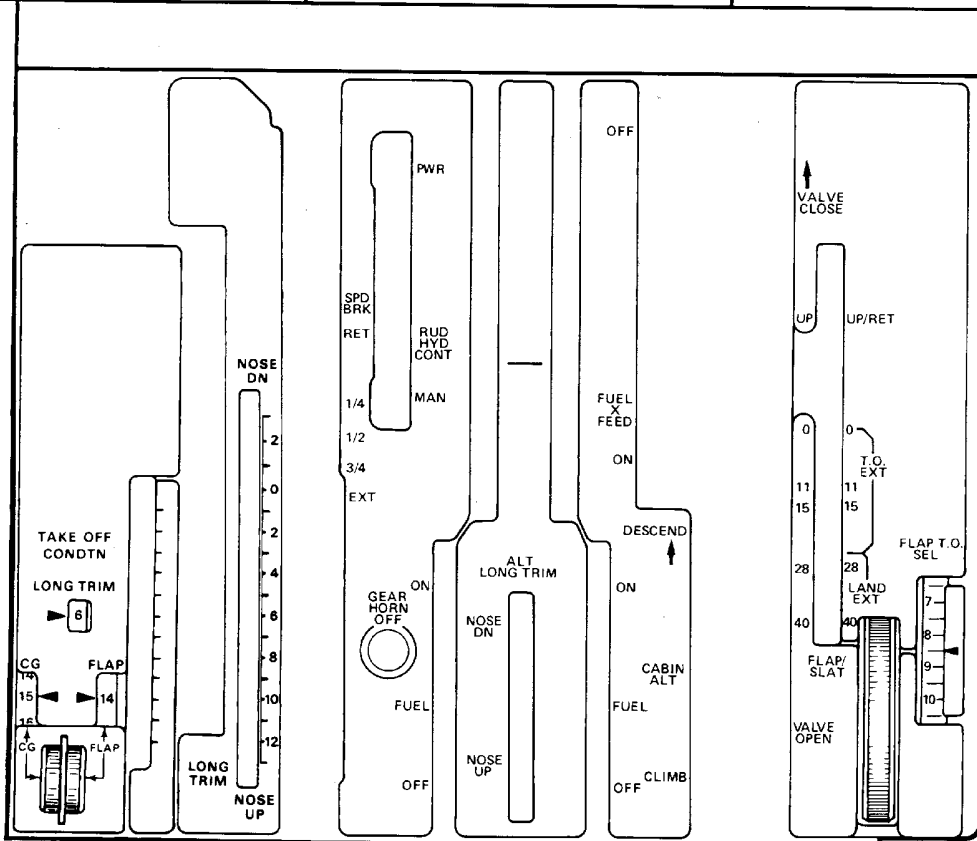
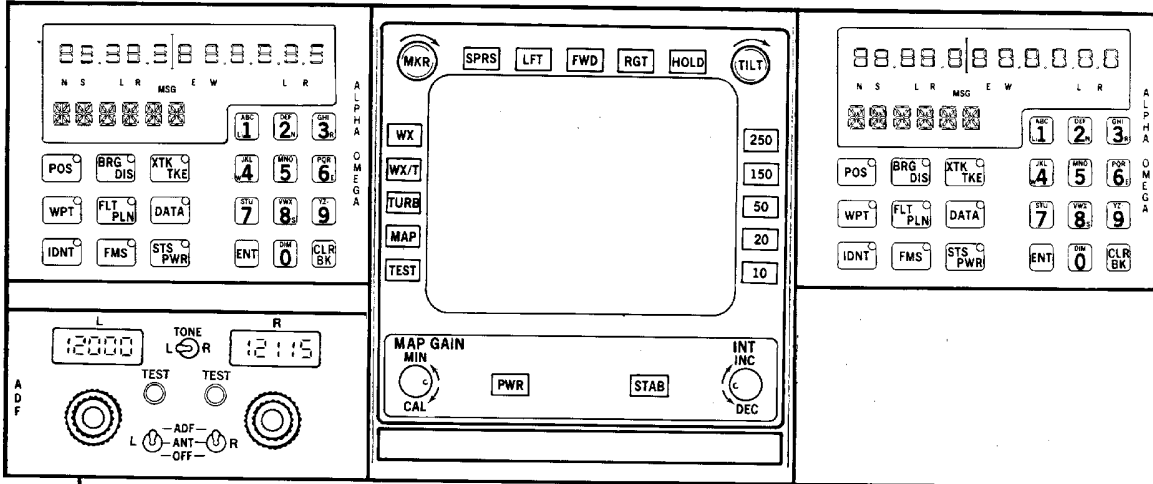
EFFECTIVITY
WJE 875, 876

TP-80MM-WJE

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BBB2-31-1020

Pedestal Panels Forward
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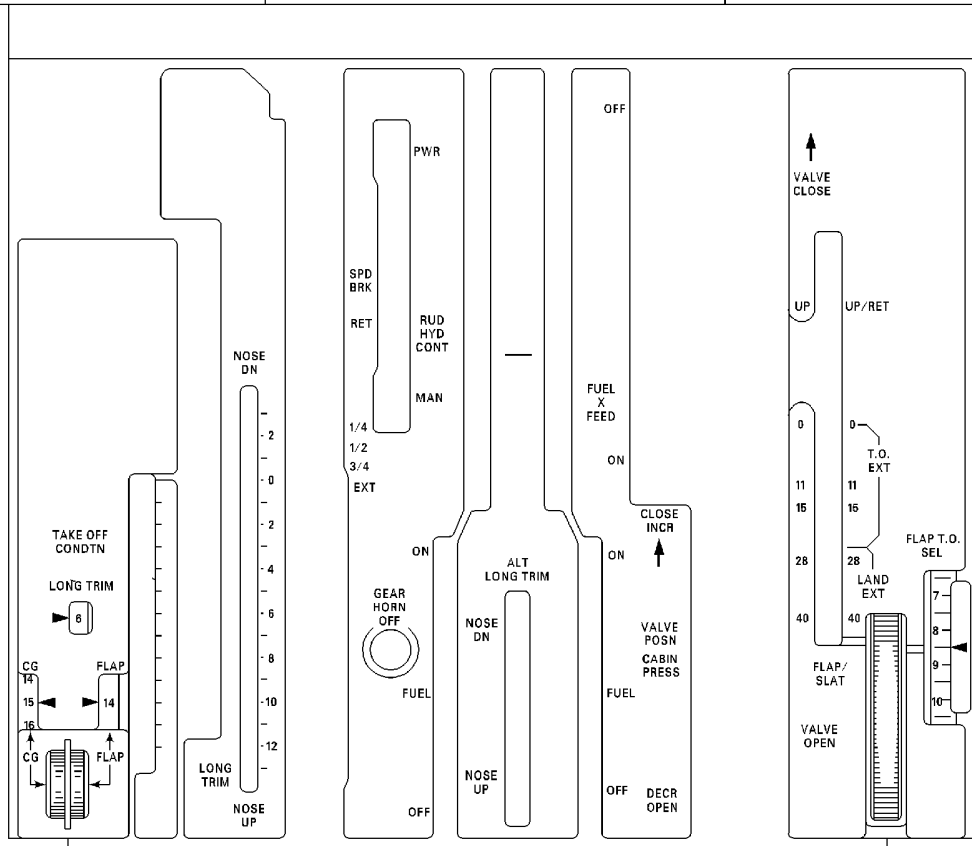
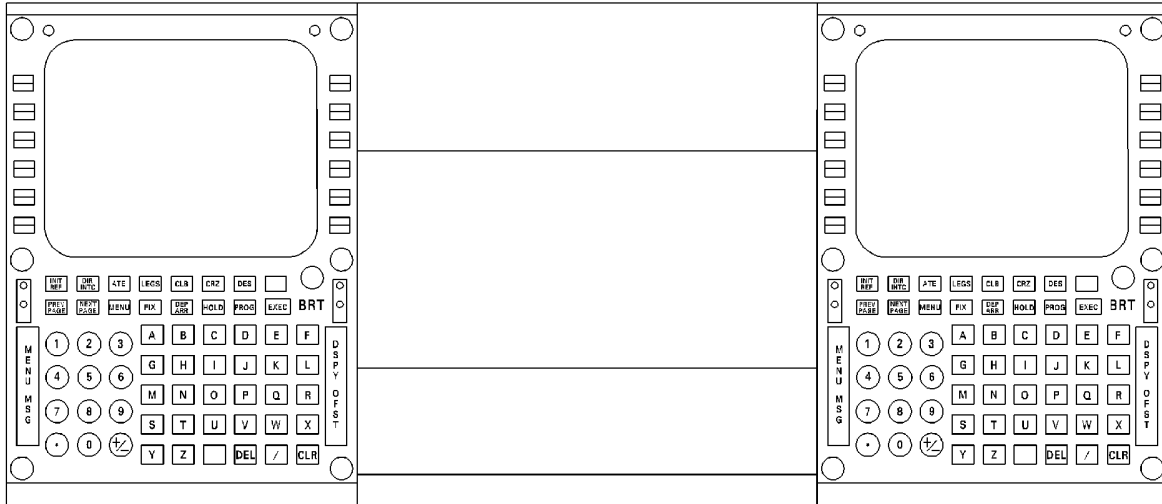
EFFECTIVITY
WJE 892, 893

TP-80MM-WJE

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CAG(IGDS)

BBB2-31-1475

Pedestal Panels Forward
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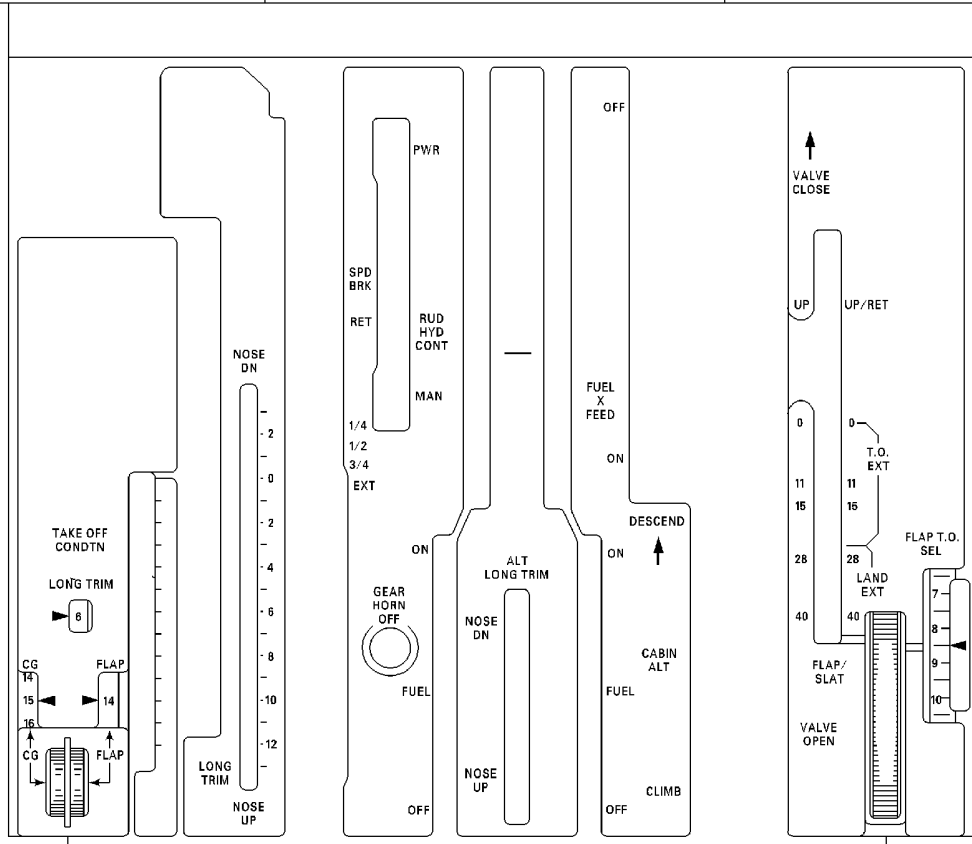
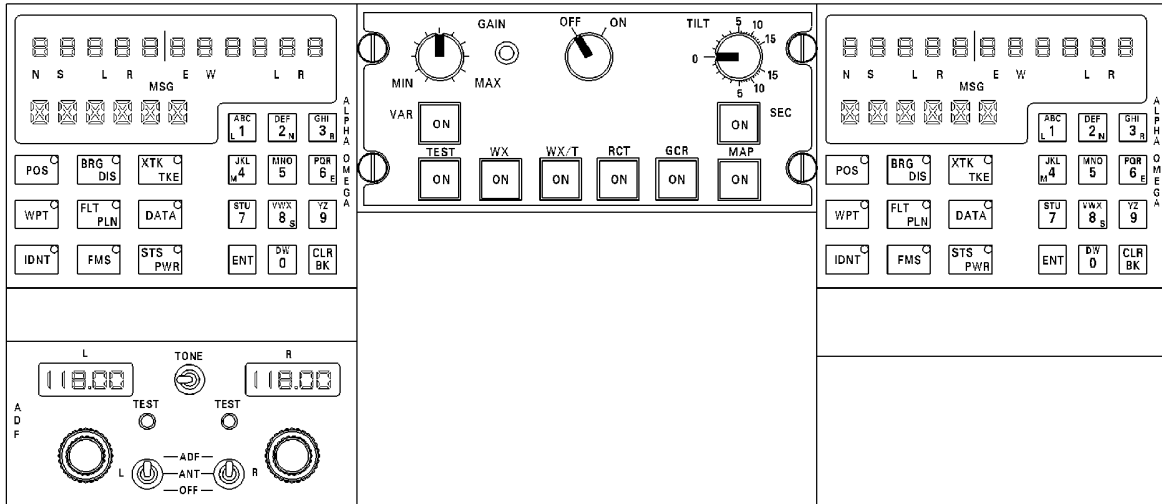
EFFECTIVITY
WJE 877

TP-80MM-WJE

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CAG(IGDS)

BBB2-31-1399

Pedestal Panels Forward
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EFFECTIVITY
WJE 878, 879

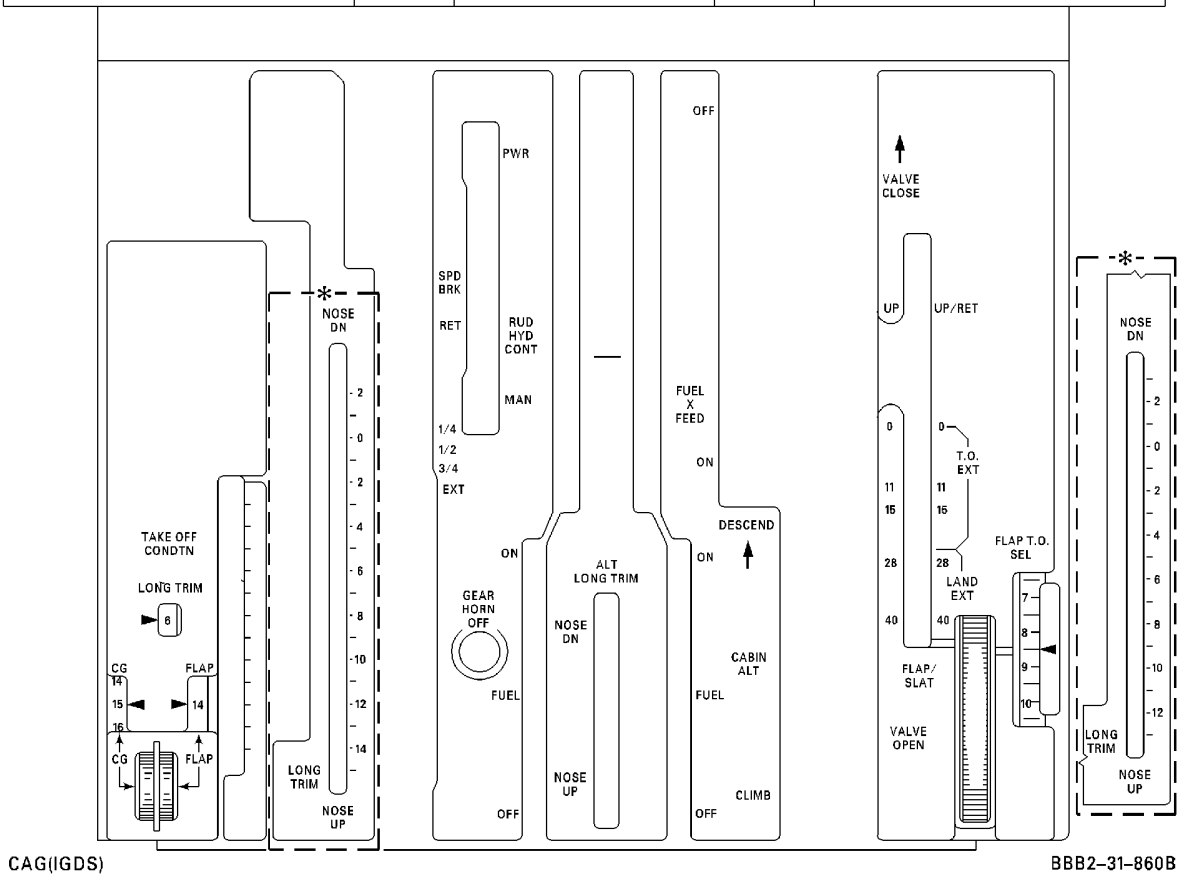
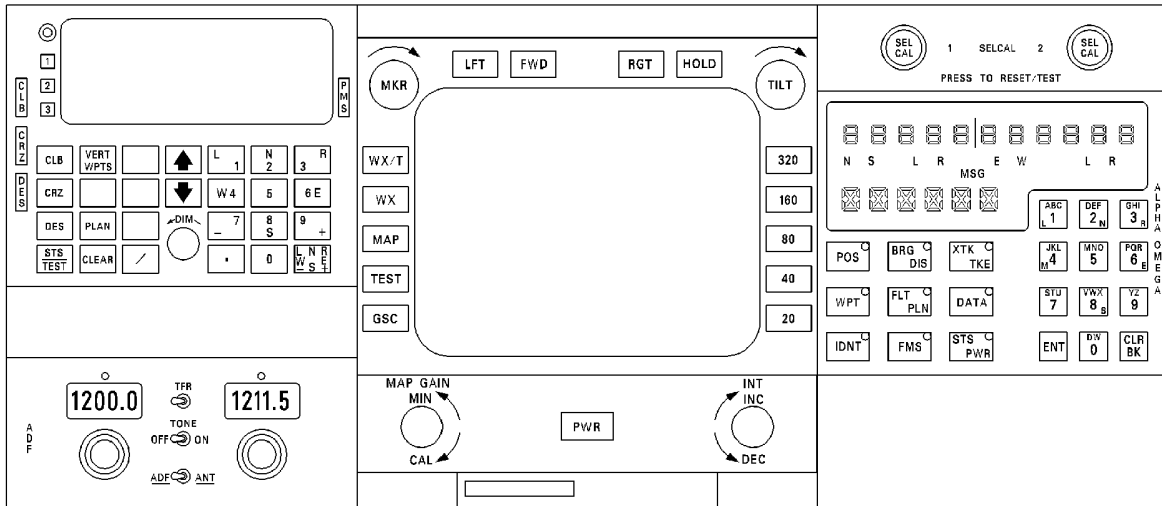
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* EFFECTIVE ON SOME AIRCRAFT



Pedestal Panels Forward
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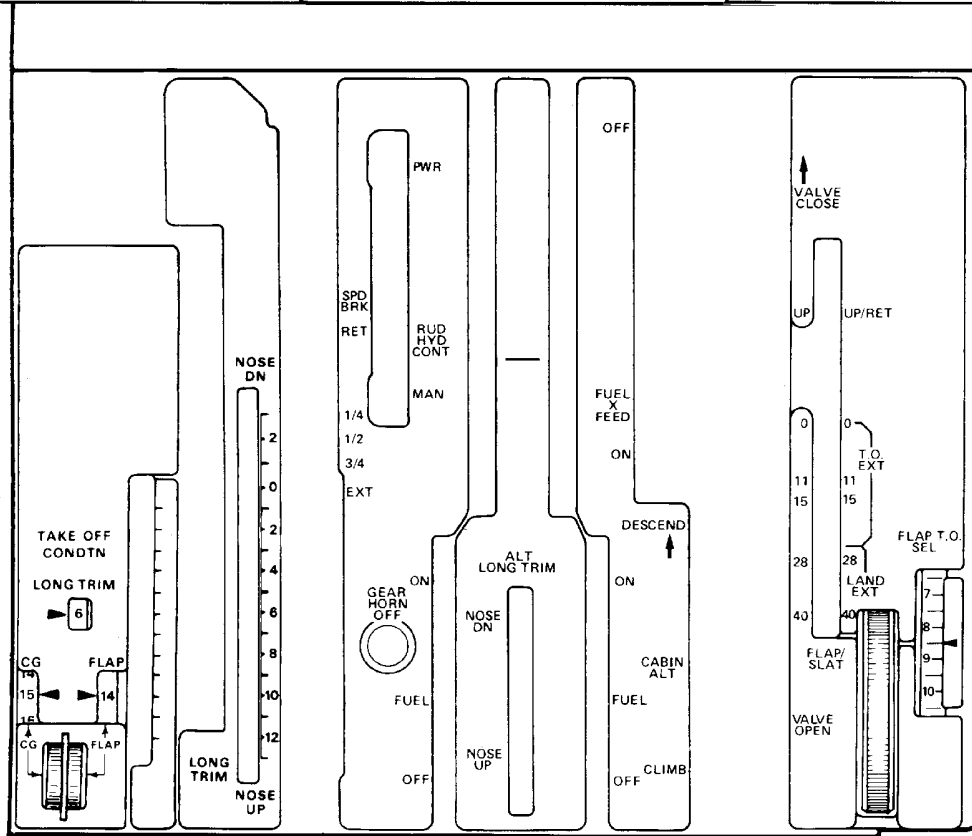
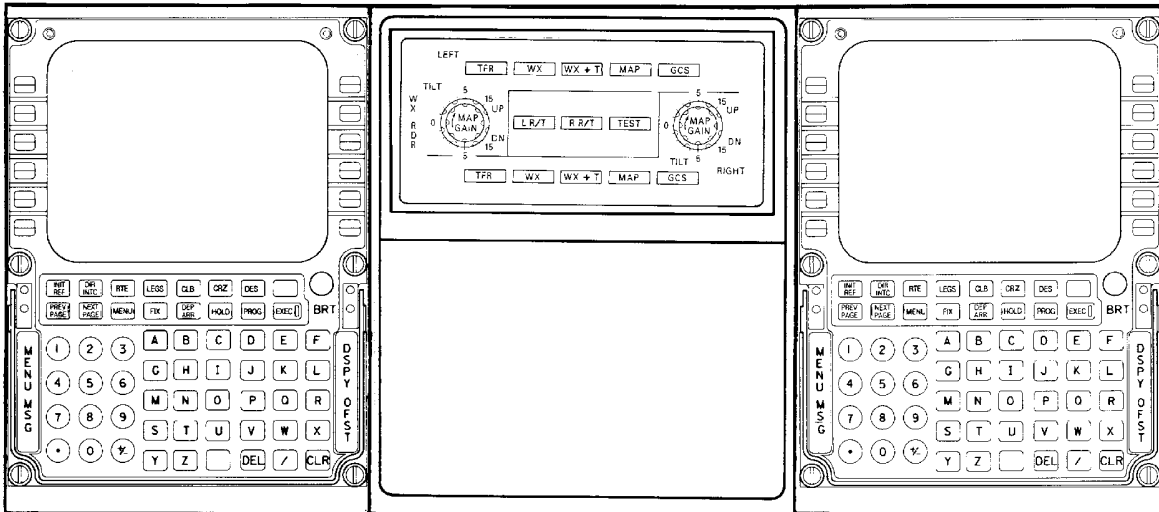
EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

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BBB2-31-1112

**Pedestal Panels Forward
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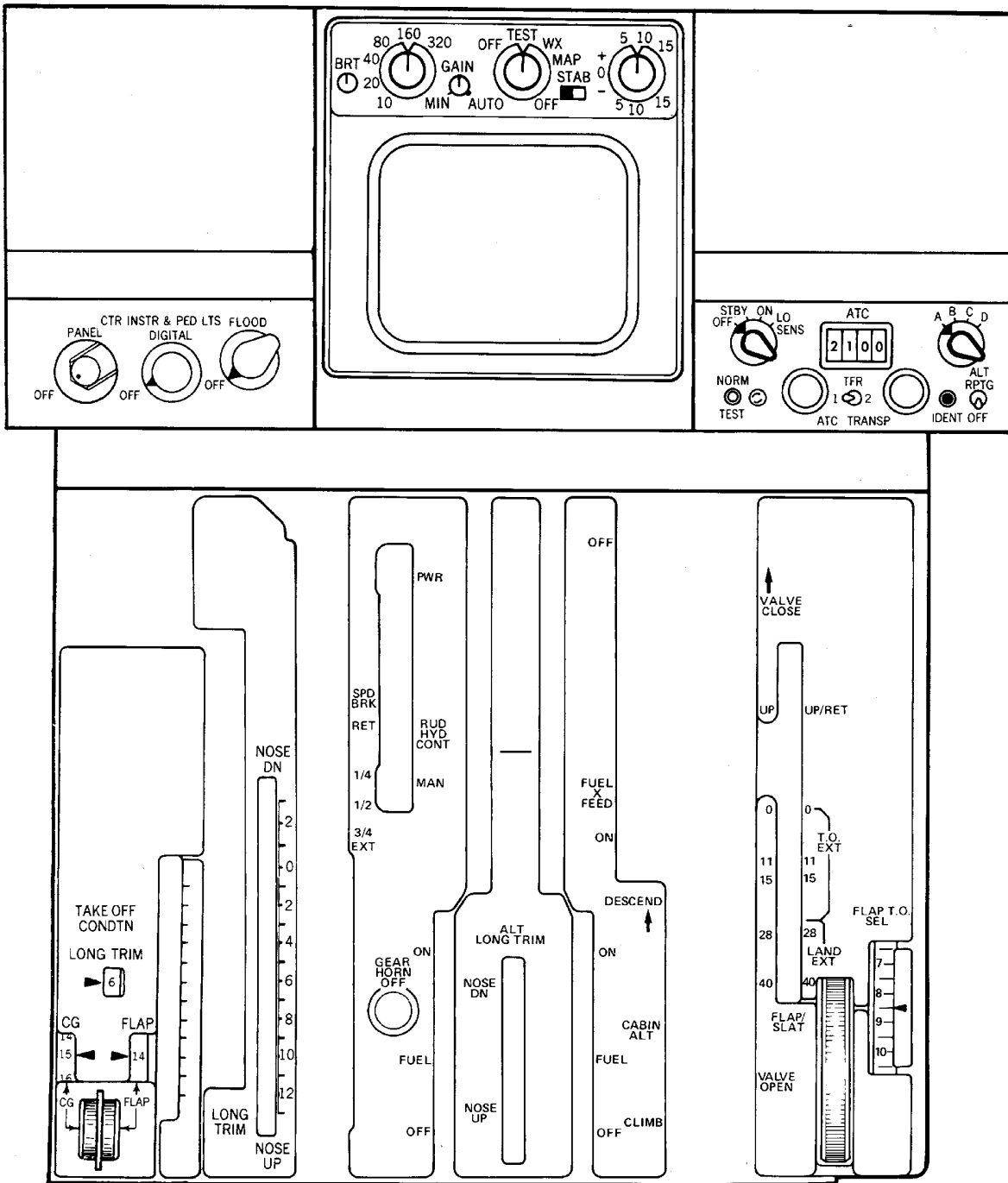
EFFECTIVITY
WJE 401-404, 412, 414

TP-80MM-WJE

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Pedestal Panels Forward
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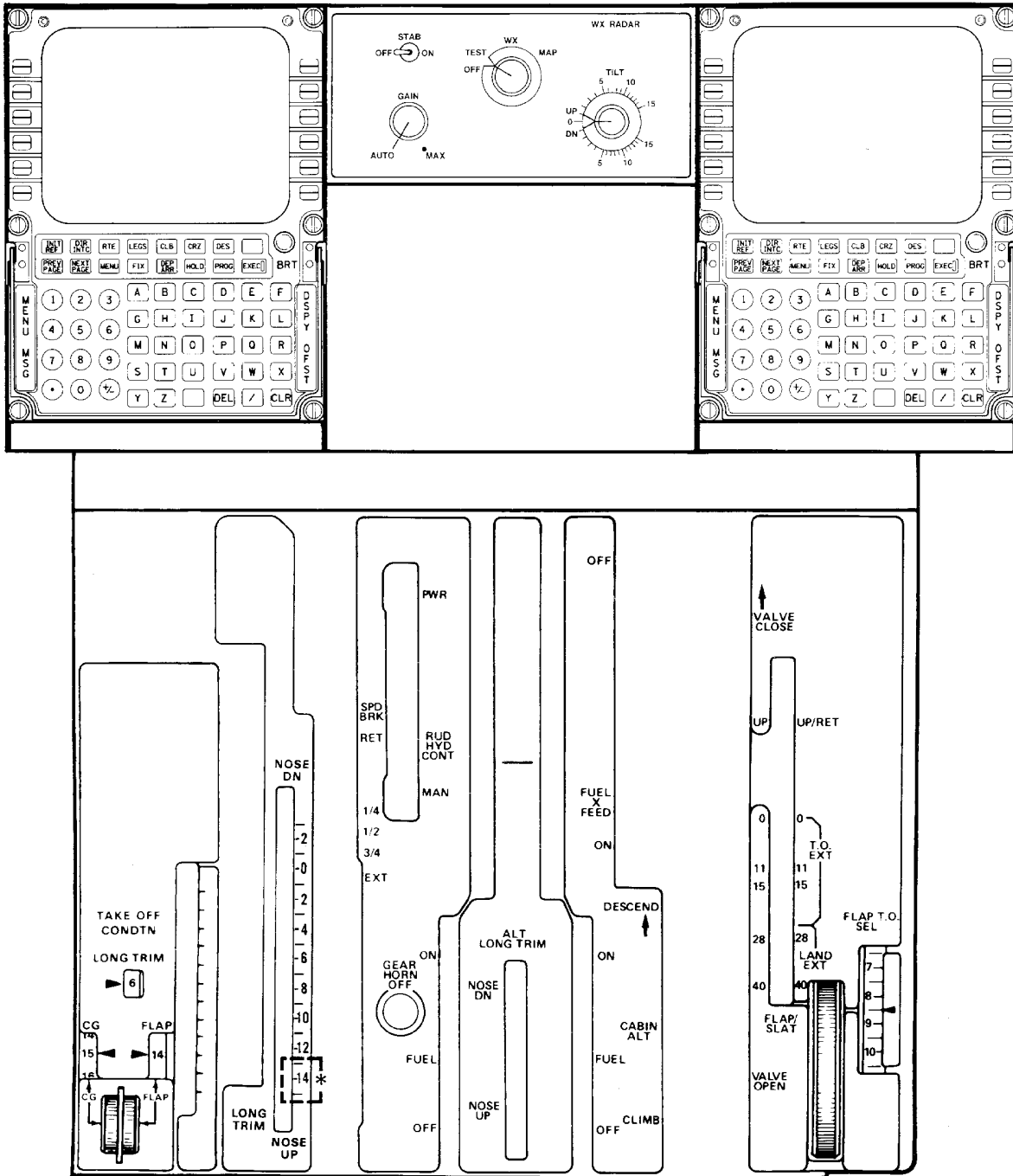
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

TP-80MM-WJE

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* EFFECTIVE ON SOME AIRCRAFT

BBB2-31-1092

**Pedestal Panels Forward
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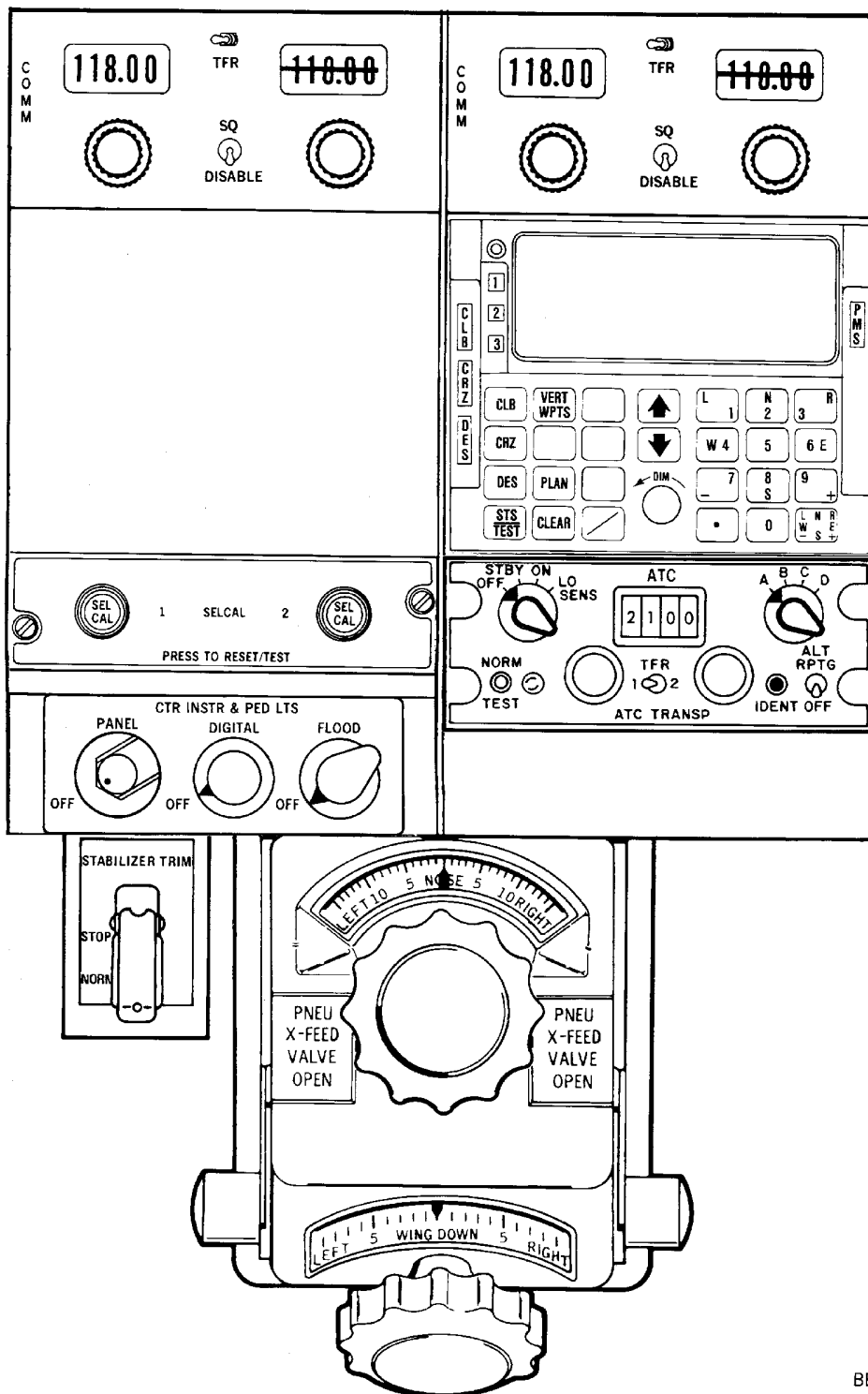
EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

TP-80MM-WJE

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BBB2-31-699B

Pedestal Panels Aft
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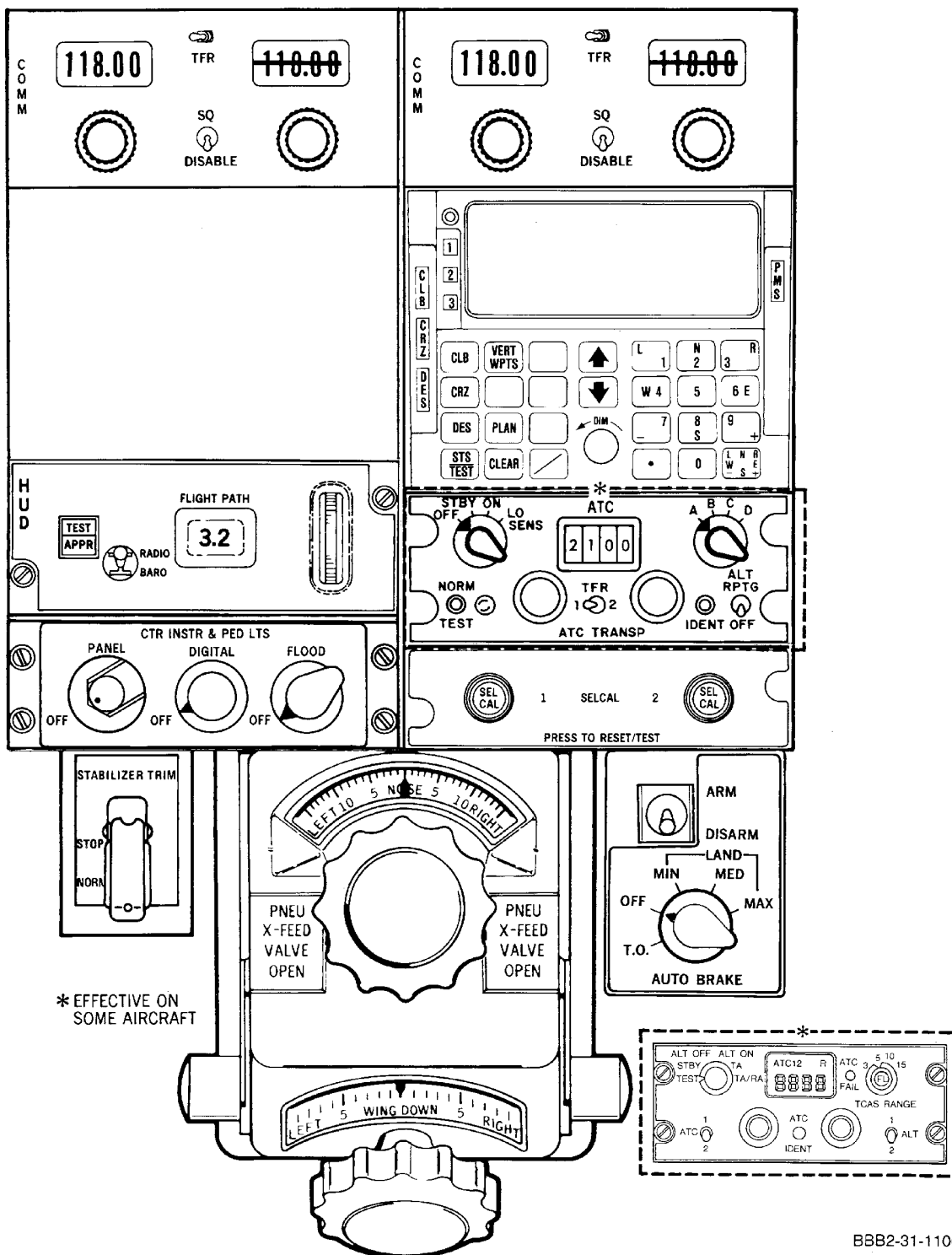
EFFECTIVITY
WJE 880

TP-80MM-WJE

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BBB2-31-1106

Pedestal Panels Aft
Figure 2/31-13-01-990-802 (Sheet 2 of 14)

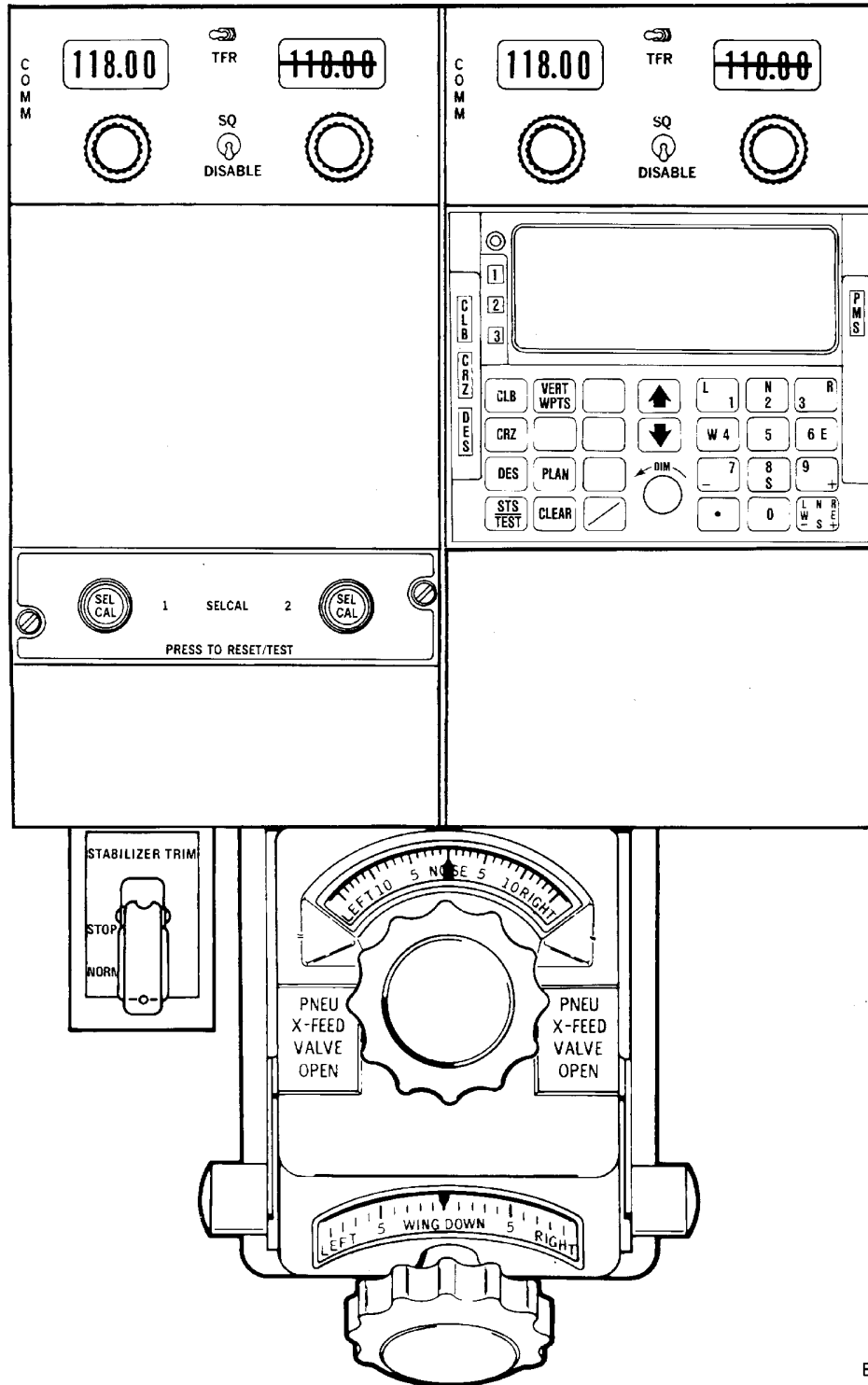
EFFECTIVITY
WJE 407, 408, 411

TP-80MM-WJE

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BBB2-31-904

Pedestal Panels Aft
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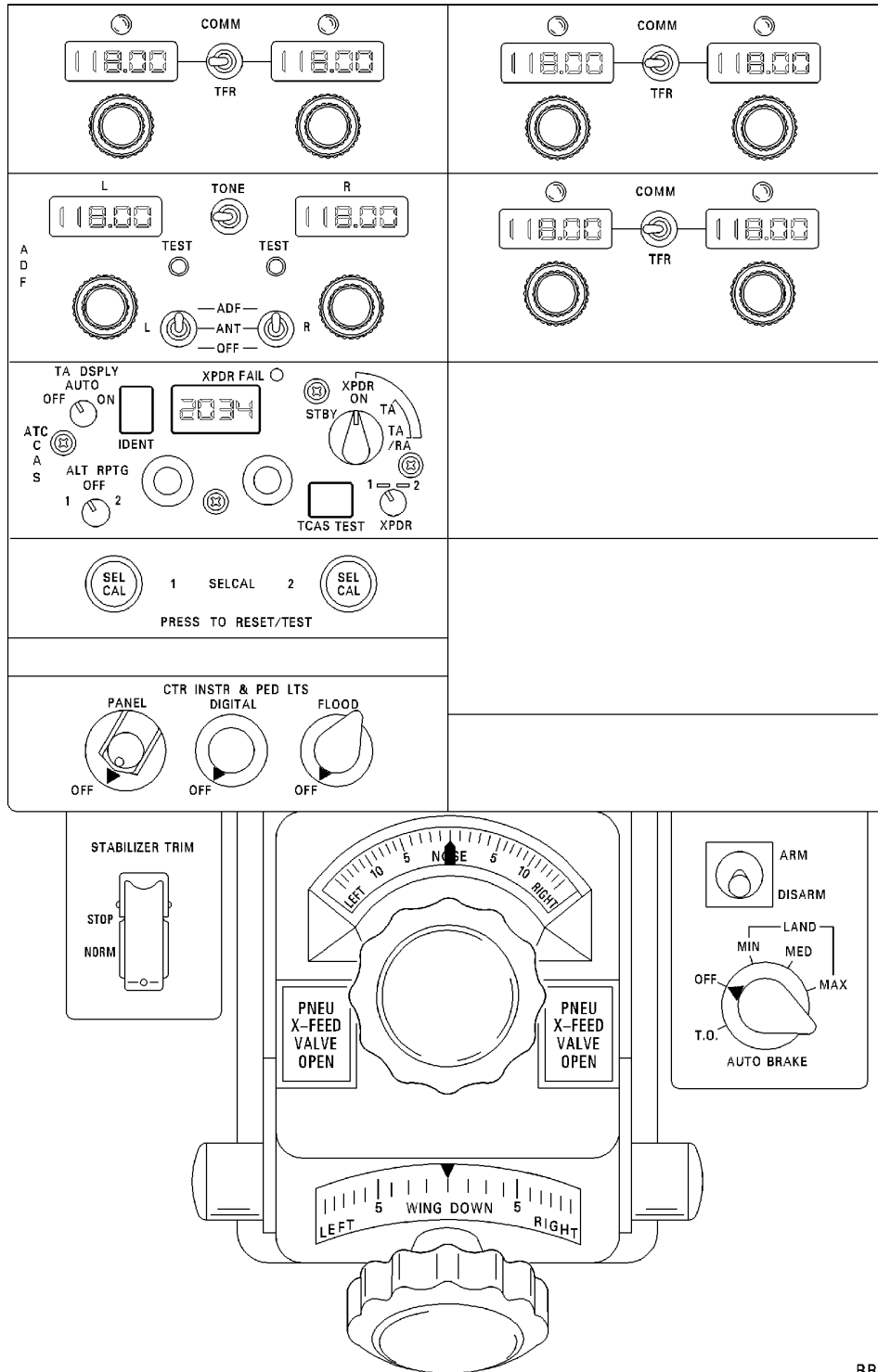
EFFECTIVITY
WJE 873, 874

TP-80MM-WJE

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CAG(IGDS)

BBB2-31-1303

**Pedestal Panels Aft
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EFFECTIVITY
WJE 875-877

TP-80MM-WJE

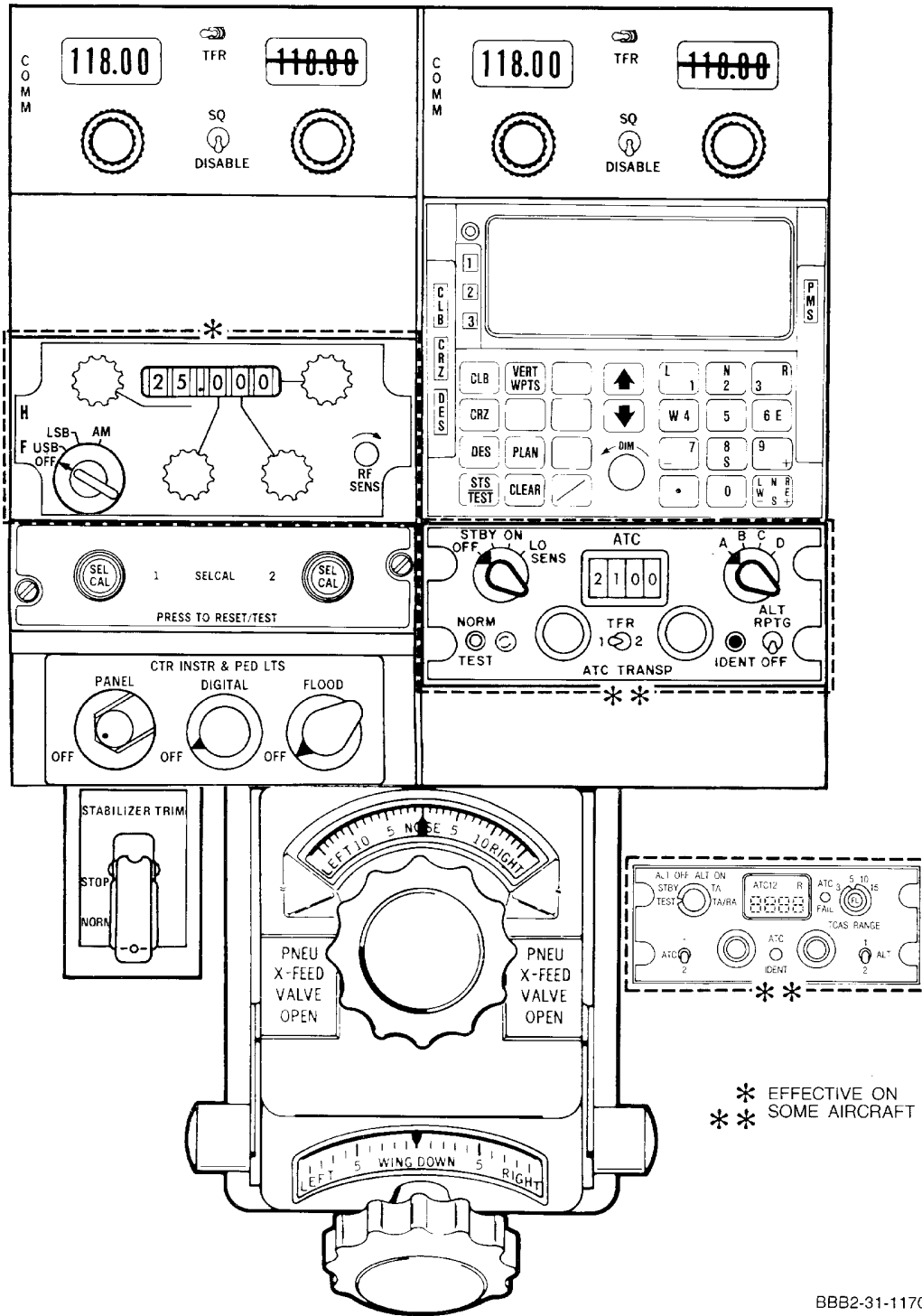
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BBB2-31-1170

Pedestal Panels Aft
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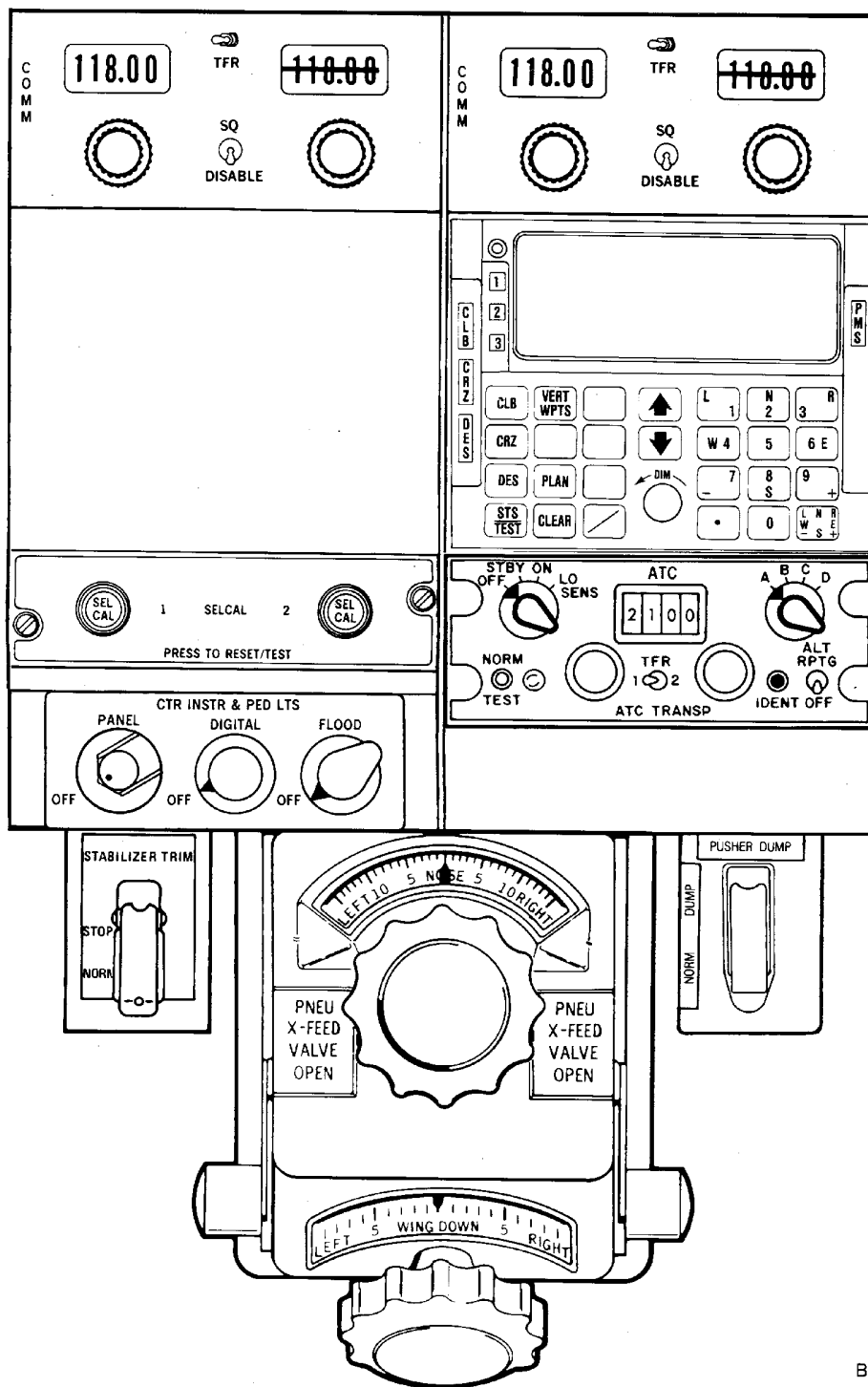
EFFECTIVITY
WJE 410

TP-80MM-WJE

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BBB2-31-897A

Pedestal Panels Aft
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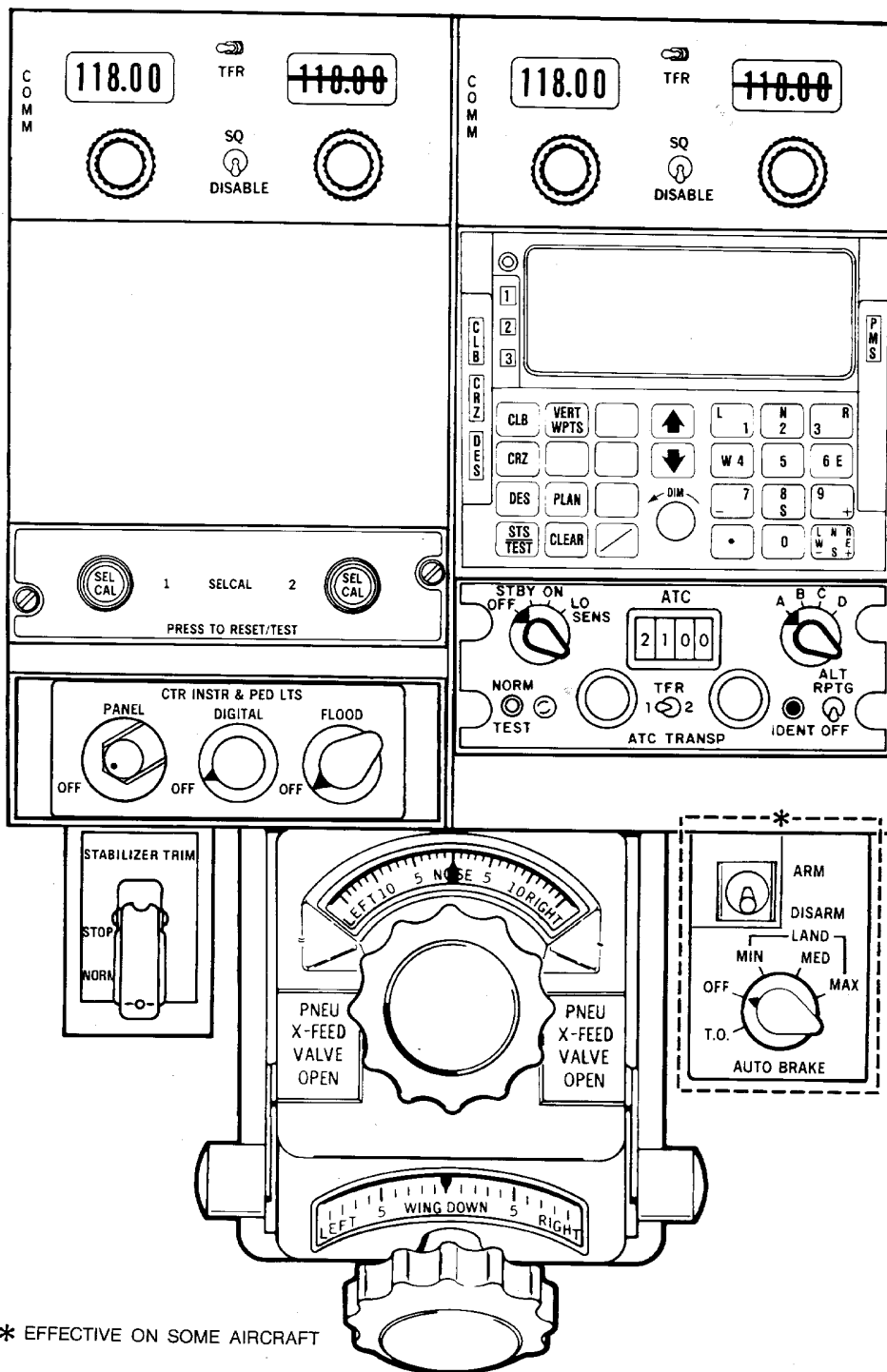
EFFECTIVITY
WJE 892

TP-80MM-WJE

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* EFFECTIVE ON SOME AIRCRAFT

BBB2-31-959A

Pedestal Panels Aft
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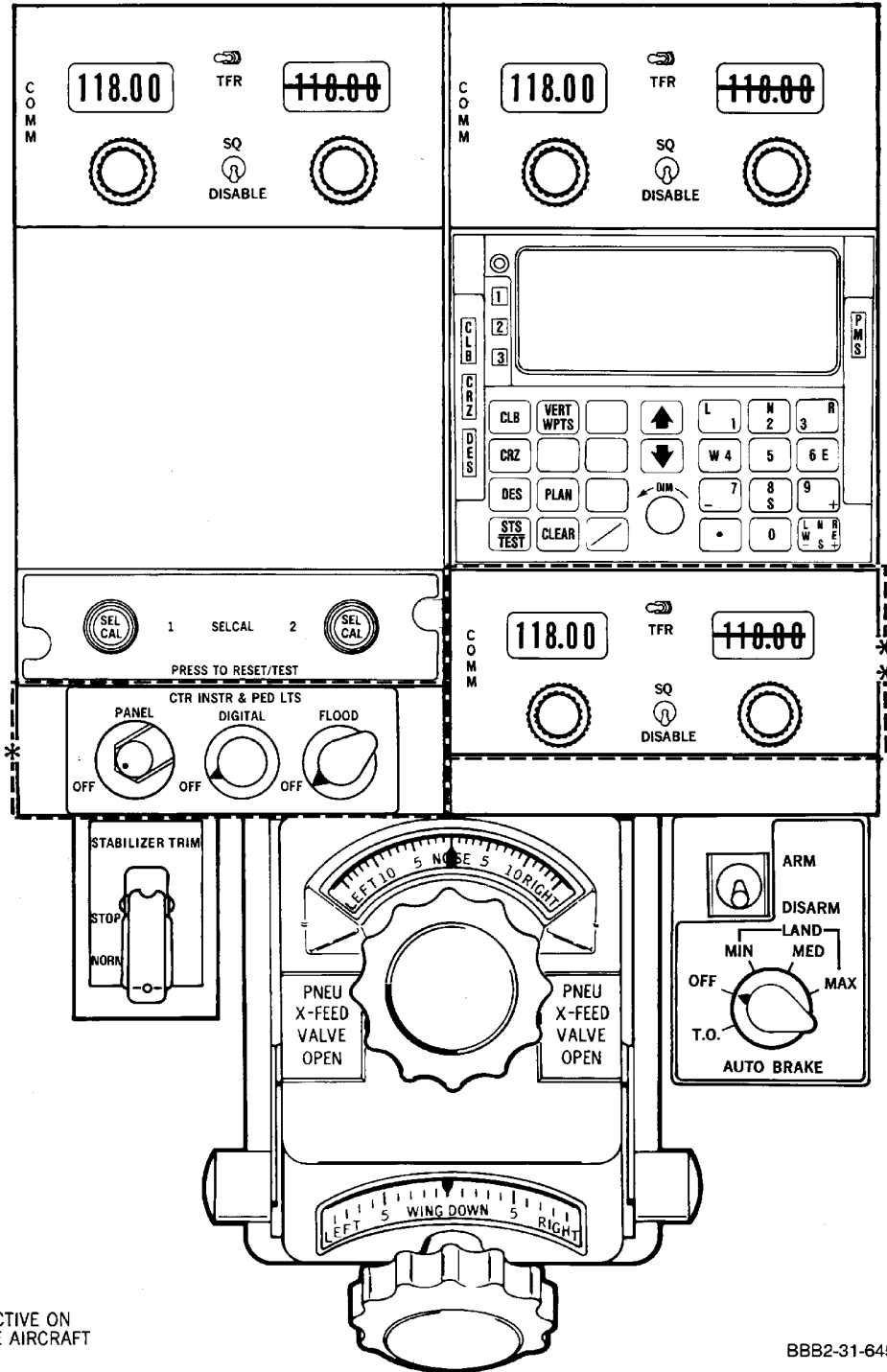
EFFECTIVITY
WJE 405, 409, 884, 893

TP-80MM-WJE

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* EFFECTIVE ON
* * SOME AIRCRAFT

BBB2-31-645B

Pedestal Panels Aft
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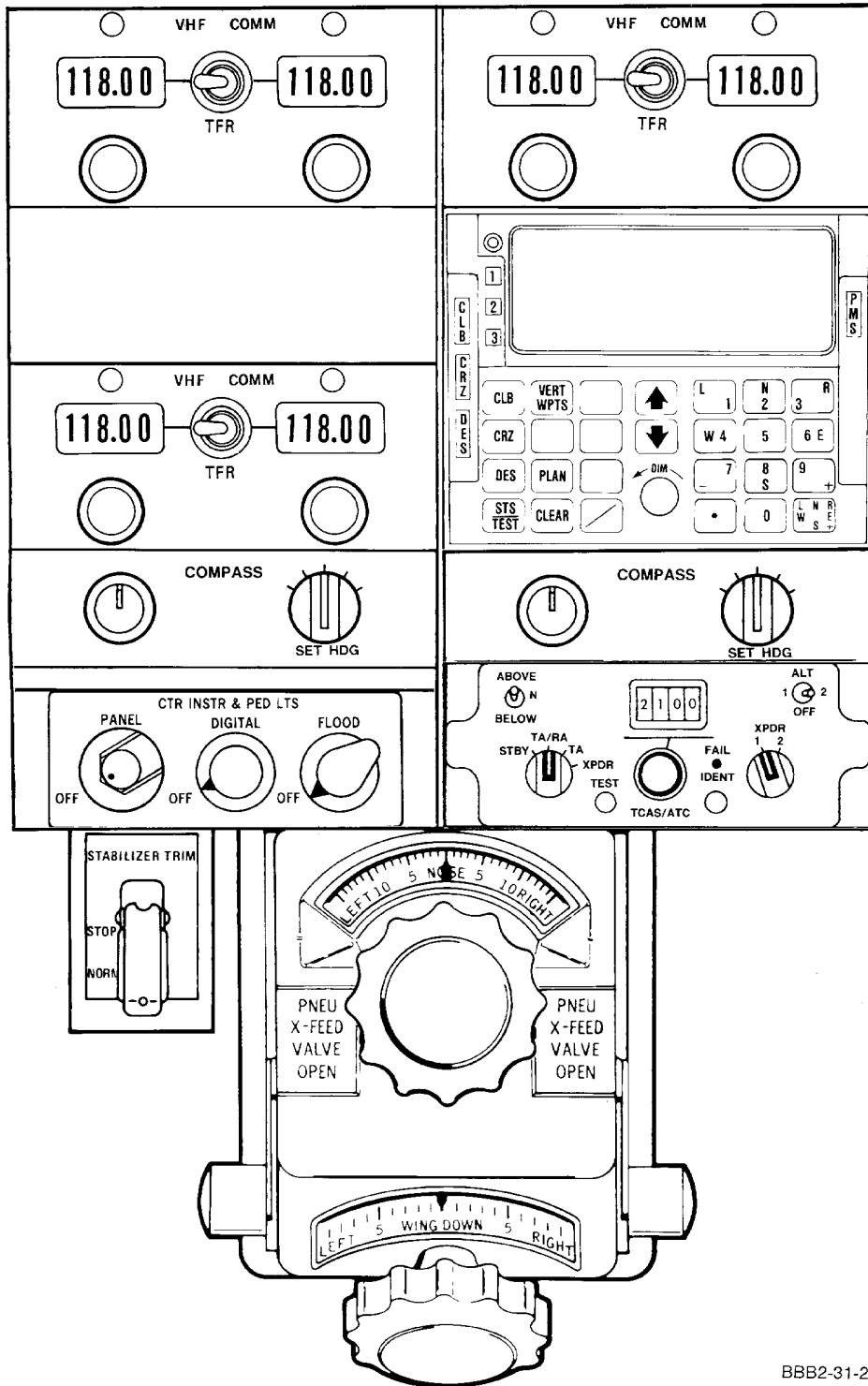
EFFECTIVITY
WJE 881, 883

TP-80MM-WJE

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BBB2-31-216C

Pedestal Panels Aft
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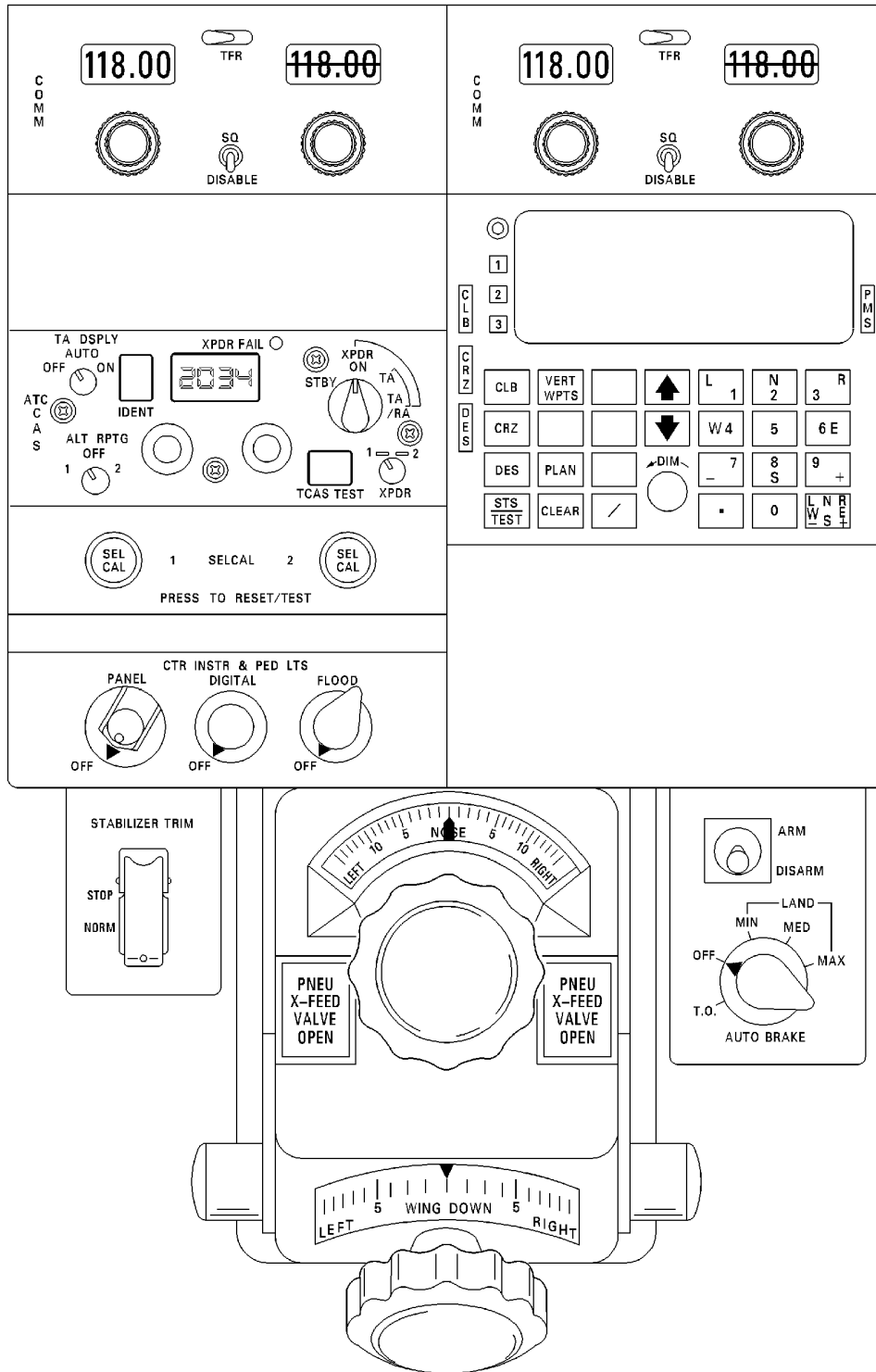
EFFECTIVITY
WJE 406

TP-80MM-WJE

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CAG(IGDS)

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EFFECTIVITY
WJE 878, 879

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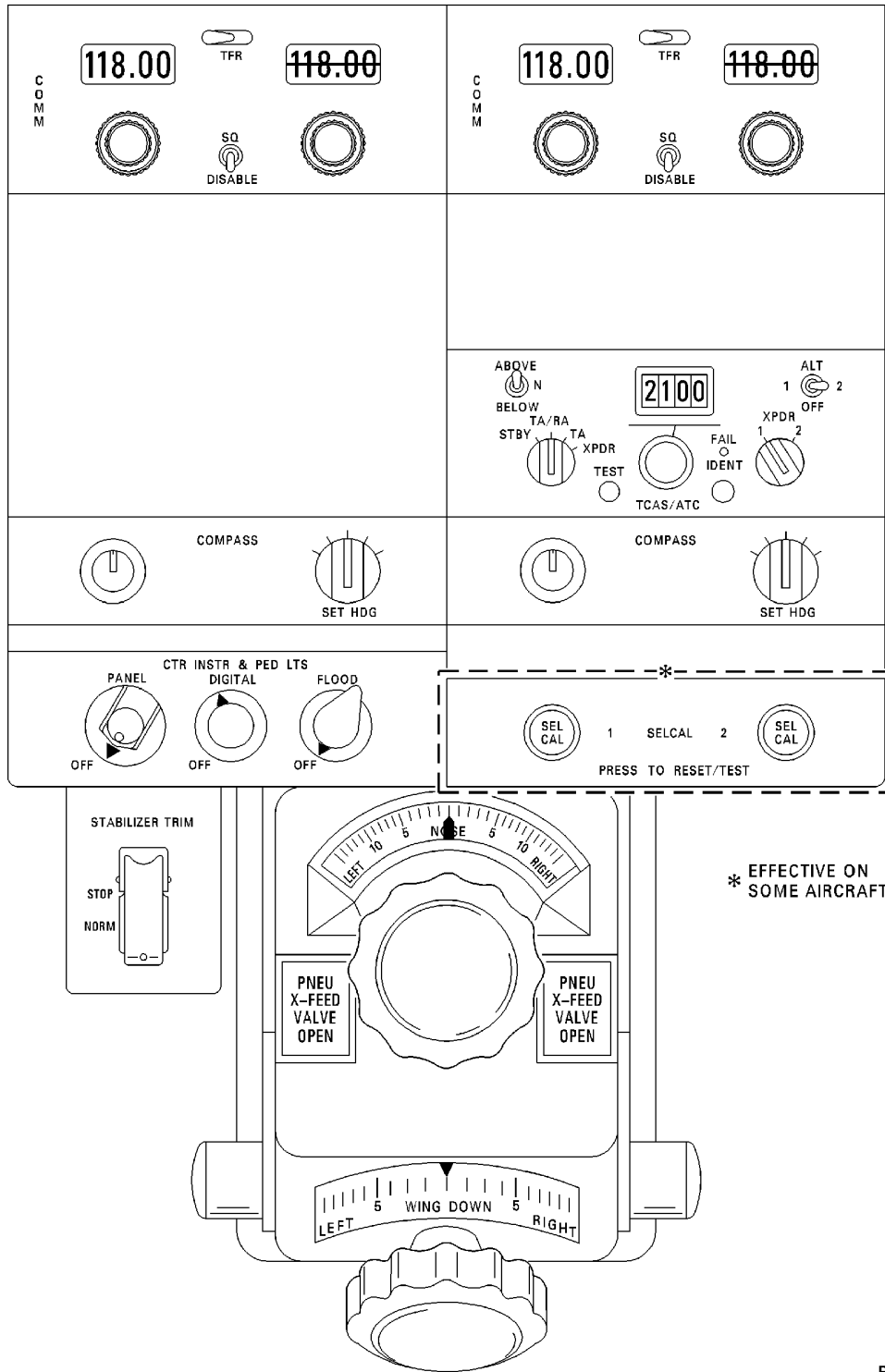
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CAG(IGDS)

BBB2-31-1216

Pedestal Panels Aft
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EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

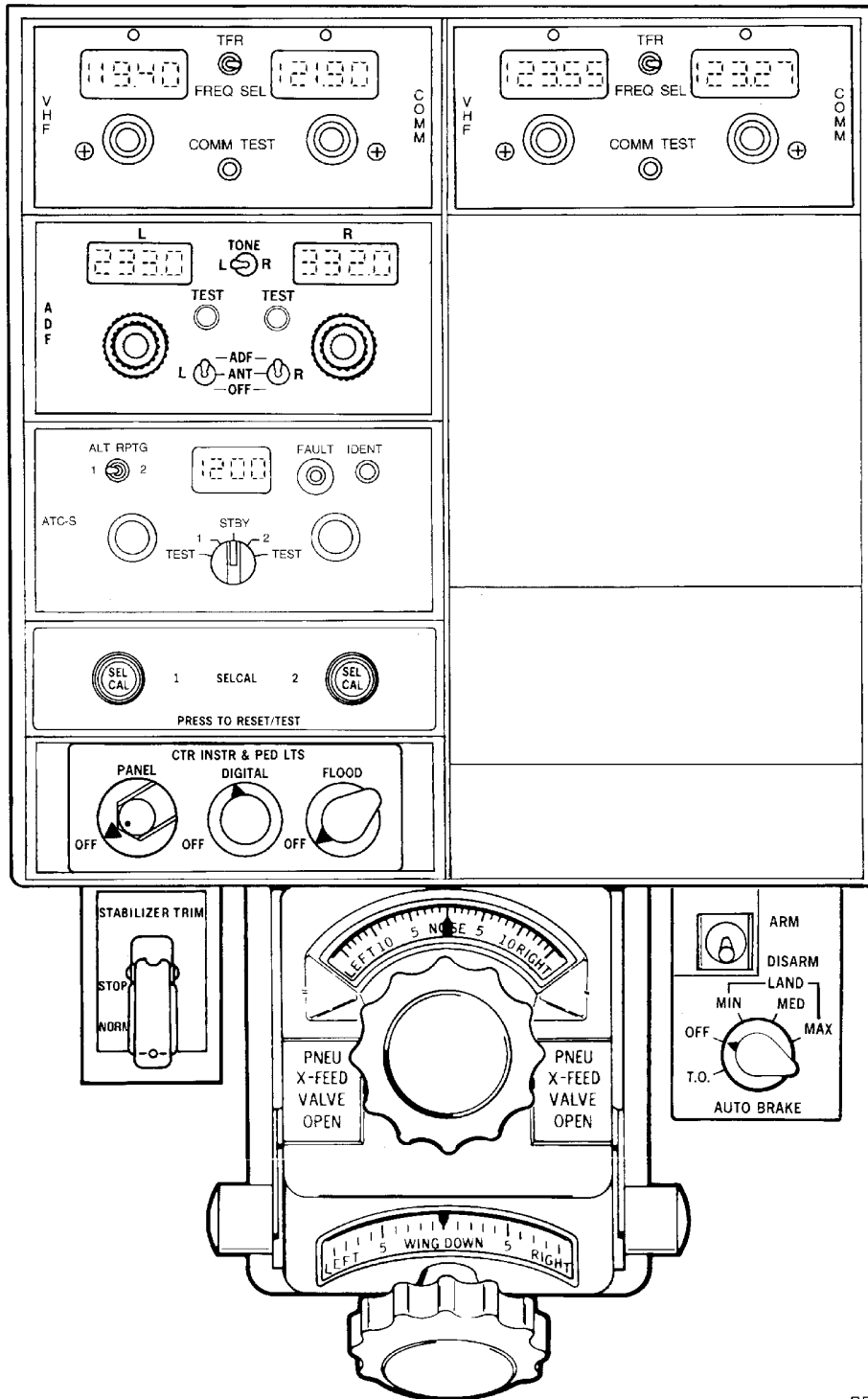
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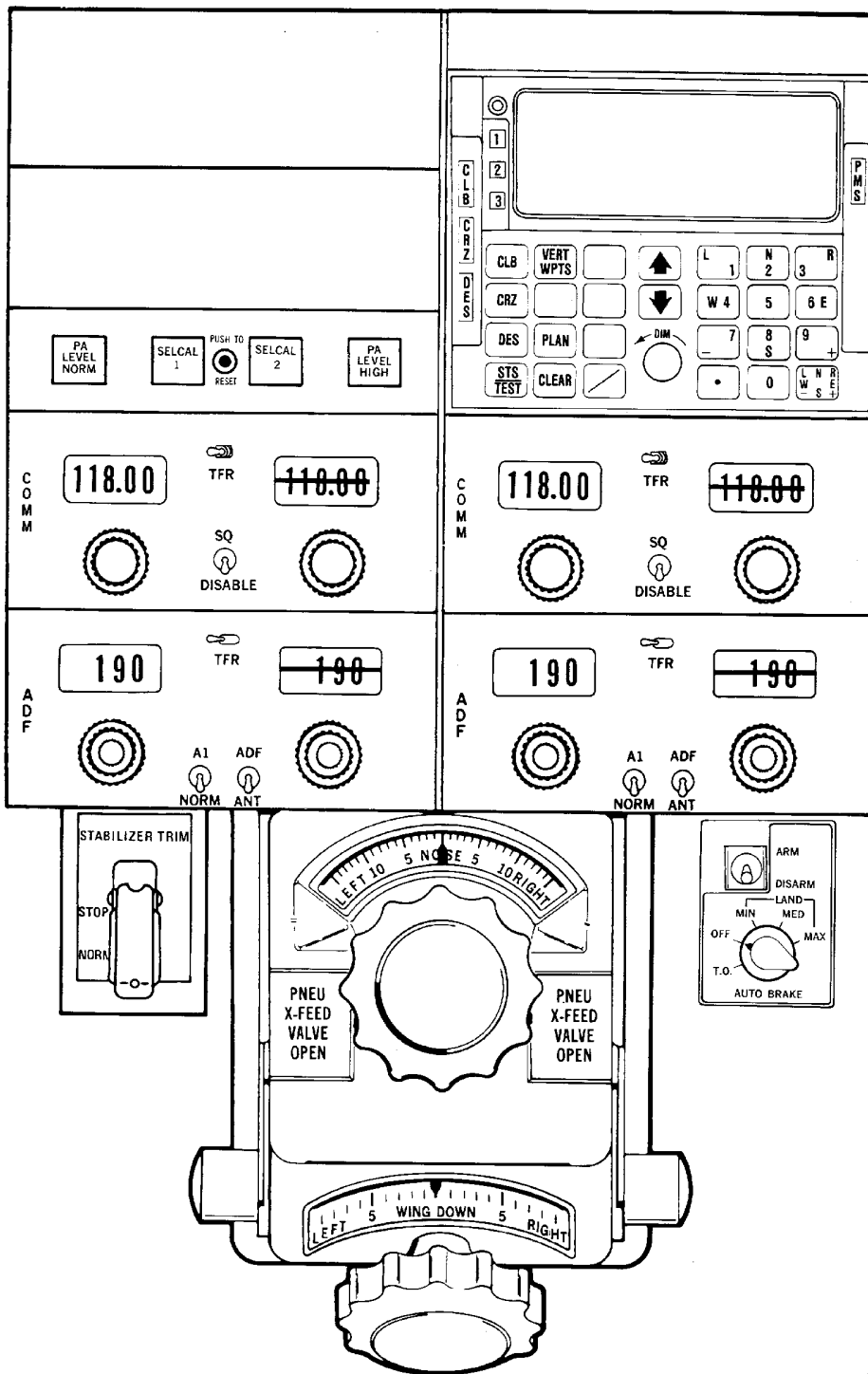
EFFECTIVITY
WJE 401-404, 412, 414

TP-80MM-WJE

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BBB2-31-669B

Pedestal Panels Aft
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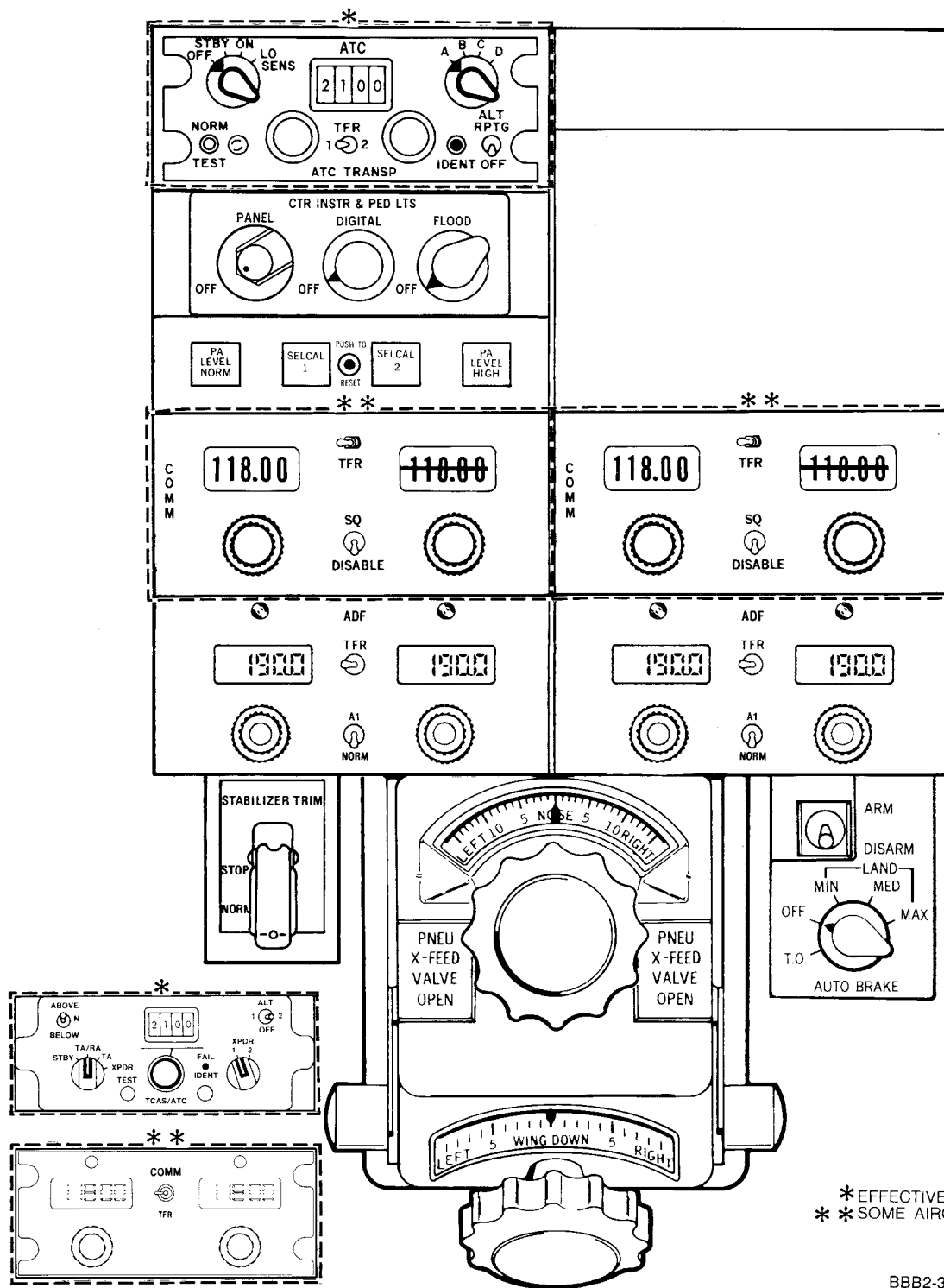
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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BBB2-31-351E

Pedestal Panels Aft
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EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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CONSOLES - DESCRIPTION AND OPERATION

1. General

- A. Two consoles are located in the flight compartment (Figure 1), designated left console and right console.

2. Description

- A. The left console is located to the left of the captain's seat and the right console is located to the right of the first officer's seat (Figure 1).

WJE 407, 408, 411, 880

- B. Mounted within the left console is a speaker for the central aural warning system, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, passenger oxygen mask test panel, and jacks for the handmike, mask mike, and headset.

WJE 405, 406, 409, 873-879, 881, 883, 884, 886, 887, 892, 893

- C. Mounted within the left console is an audio control panel, a speaker for the central aural warning system, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, jack box control panel, oxygen regulator panel, flight guidance status/test panel, passenger oxygen mask test panel, and jacks for the handmike, mask mike headset, and oxygen mask.

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- D. Mounted within the left console is an audio control panel, a speaker for the central aural warning system, the pilot's call bell, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, flight guidance status/test panel, passenger oxygen mask test panel, and jacks for the handmike, mask mike headset, and oxygen mask.

WJE 401-404, 412, 414

- E. Mounted within the left console is an audio control panel, a speaker for the central aural warning system, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, jack box control panel, flight guidance status/test panel, passenger oxygen mask test panel, and jacks for the handmike, mask mike headset, and oxygen mask.

WJE 410

- F. Mounted within the left console is an audio control panel, a speaker for the central aural warning system, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, jack panel, EROS oxygen mask and hose box, and jacks for the handmike, and mask mike headset.

WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

- G. Mounted within the left console is an audio control panel, a speaker for the central aural warning system, a ground service bus circuit breaker panel, an instrument light circuit breaker panel, jack panel, EROS oxygen mask and hose box, a jack for the handmike and an oxygen mask mike switch.

WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872

- H. Installed on top of the left console is the nosewheel steering control wheel.

WJE 407, 408, 411, 880

- I. Installed on top of the left console is the nosewheel steering control wheel and an oxygen regulator.

WJE 401-406, 409, 412, 414, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 881, 883, 884, 886, 887, 891-893

- J. Installed on top of the left console is the nosewheel steering control wheel and an oxygen mask mike switch.

EFFECTIVITY
WJE ALL

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WJE 405, 406, 409, 873-879, 881, 883, 884, 886, 887, 892, 893

- K. Mounted within the right console is a speaker for the central aural warning system, jacks for hand mike, headset, an instrument light circuit breaker panel, jack box control panel, oxygen regulator panel, instrument light transformer, and a digital flight guidance lighting controller.

WJE 407, 408, 411, 880

- L. Mounted within the right console is a speaker for the central aural warning system, jacks for hand mike, mask mike, headset, an instrument light circuit breaker panel, an instrument lighting transformer, and a digital flight guidance lighting controller.

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- M. Mounted within the right console is a speaker for the central aural warning system, jacks for hand mike, headset, an instrument light circuit breaker panel, instrument light transformer, and a digital flight guidance lighting controller.

WJE 401-404, 412, 414

- N. Mounted within the right console is a speaker for the central aural warning system, jacks for hand mike, headset, an instrument light circuit breaker panel, jack box control panel, instrument light transformer, and a digital flight guidance lighting controller.

WJE 410

- O. Mounted within the right console is a speaker for the central aural warning system, jacks for hand mike, headset, an instrument light circuit breaker panel, jack panel, instrument light transformer, EROS oxygen mask and hose box, and a digital flight guidance lighting controller.

WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

- P. Mounted within the right console is a speaker for the central aural warning system, a jack for the hand mike, and an oxygen mask mike switch.

WJE 401-406, 409, 412, 414, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 881, 883, 884, 886, 887, 891-893

- Q. Installed on top of the right console is an audio control panel, and an oxygen mask mike switch.

WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872

- R. Installed on top of the right console is an audio control panel.

WJE ALL

3. Operation

- A. Instructions for operation of equipment on the left and right consoles are included in the specific system chapter of the maintenance manual.

EFFECTIVITY
WJE ALL

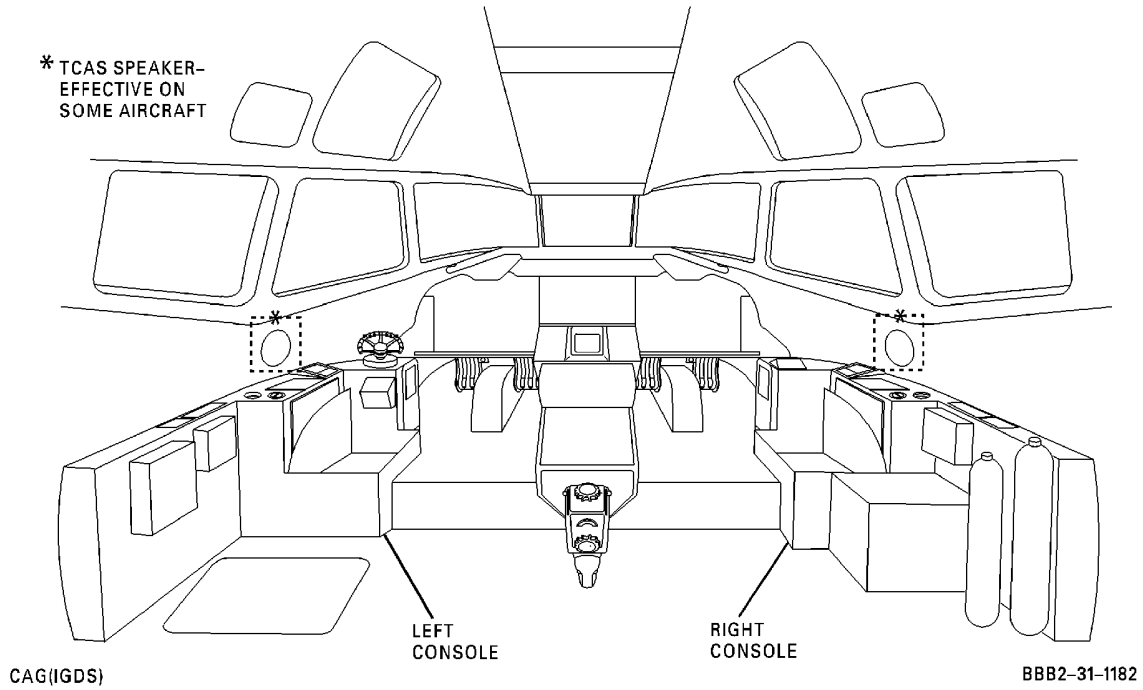
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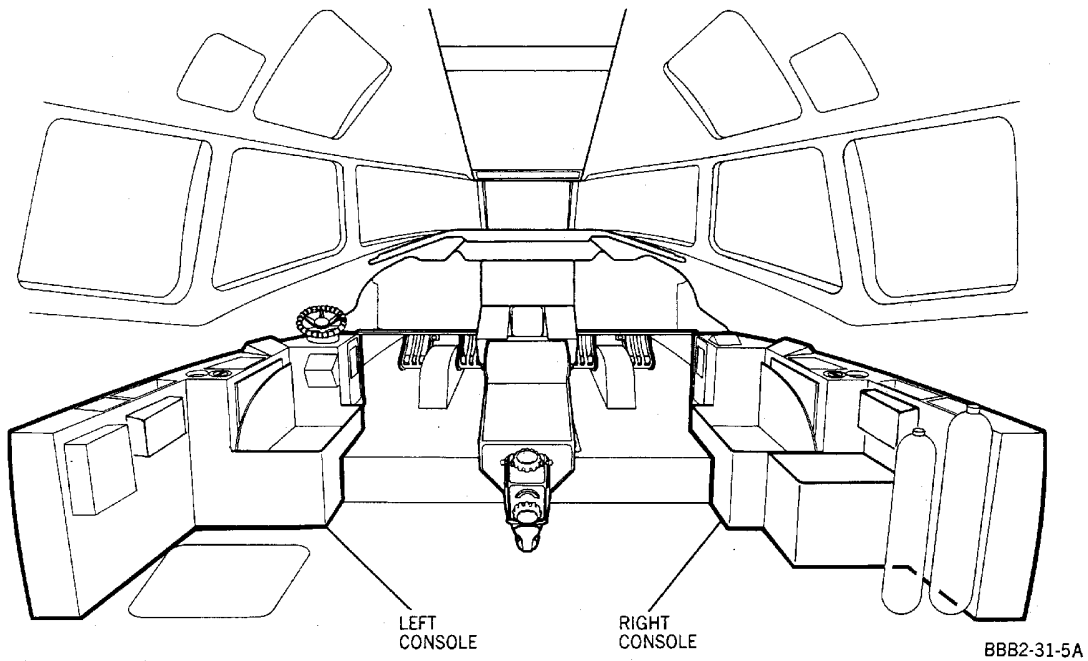
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WJE 401-409, 411, 412, 414, 880, 881, 883, 884, 886, 887



Console Locations
Figure 1/31-14-01-990-801 (Sheet 1 of 3)

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 891-893



Console Locations
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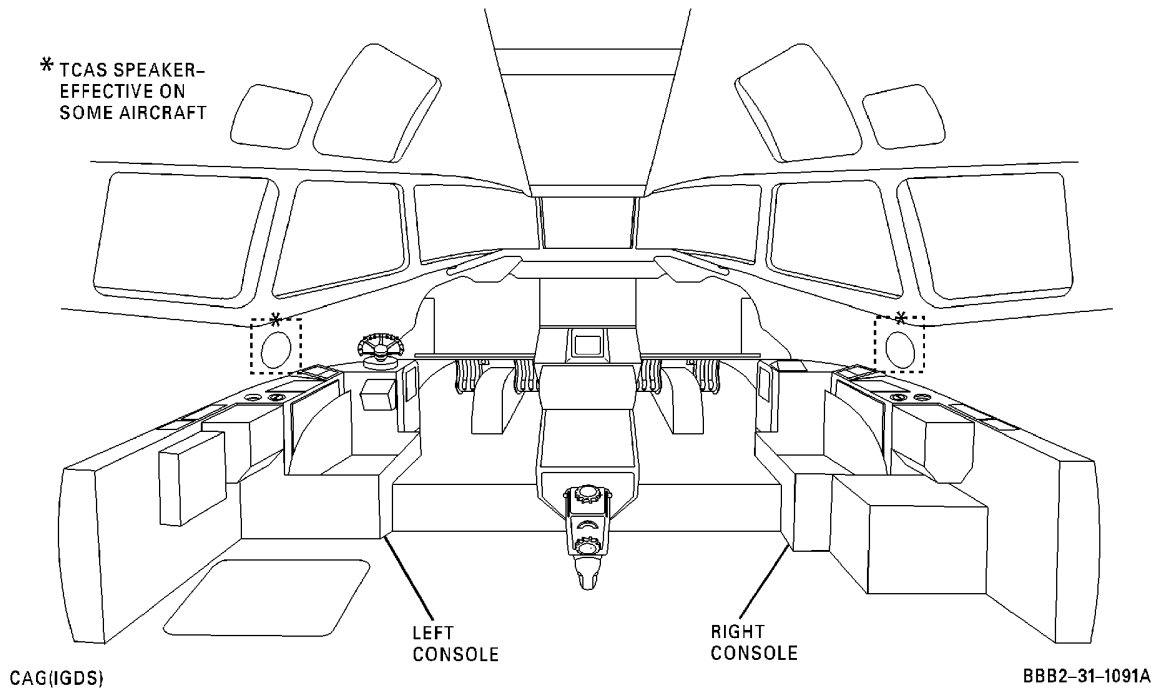
EFFECTIVITY
WJE ALL

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WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872



Console Locations
Figure 1/31-14-01-990-801 (Sheet 3 of 3)

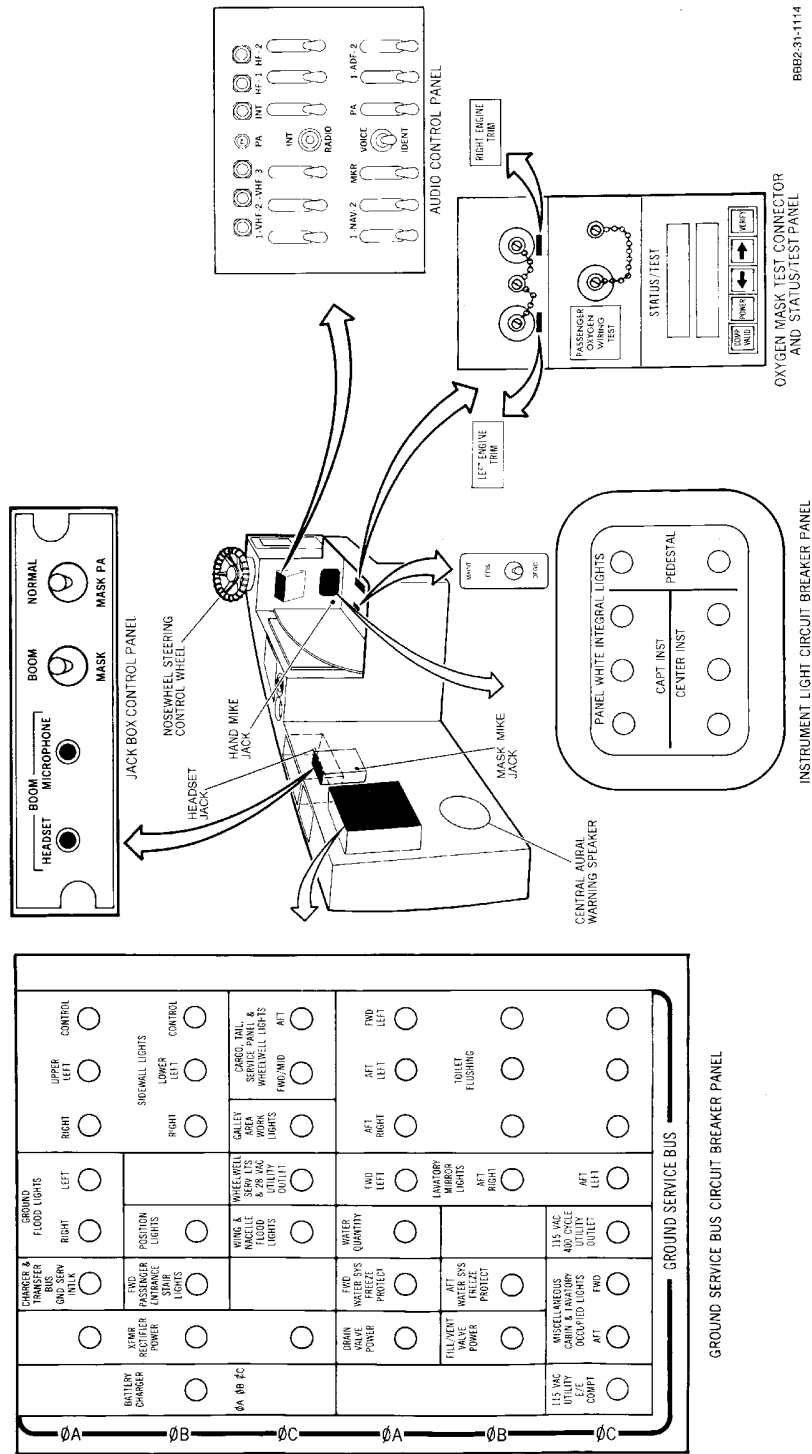
EFFECTIVITY
WJE ALL

31-14-01

TP-80MM-WJE

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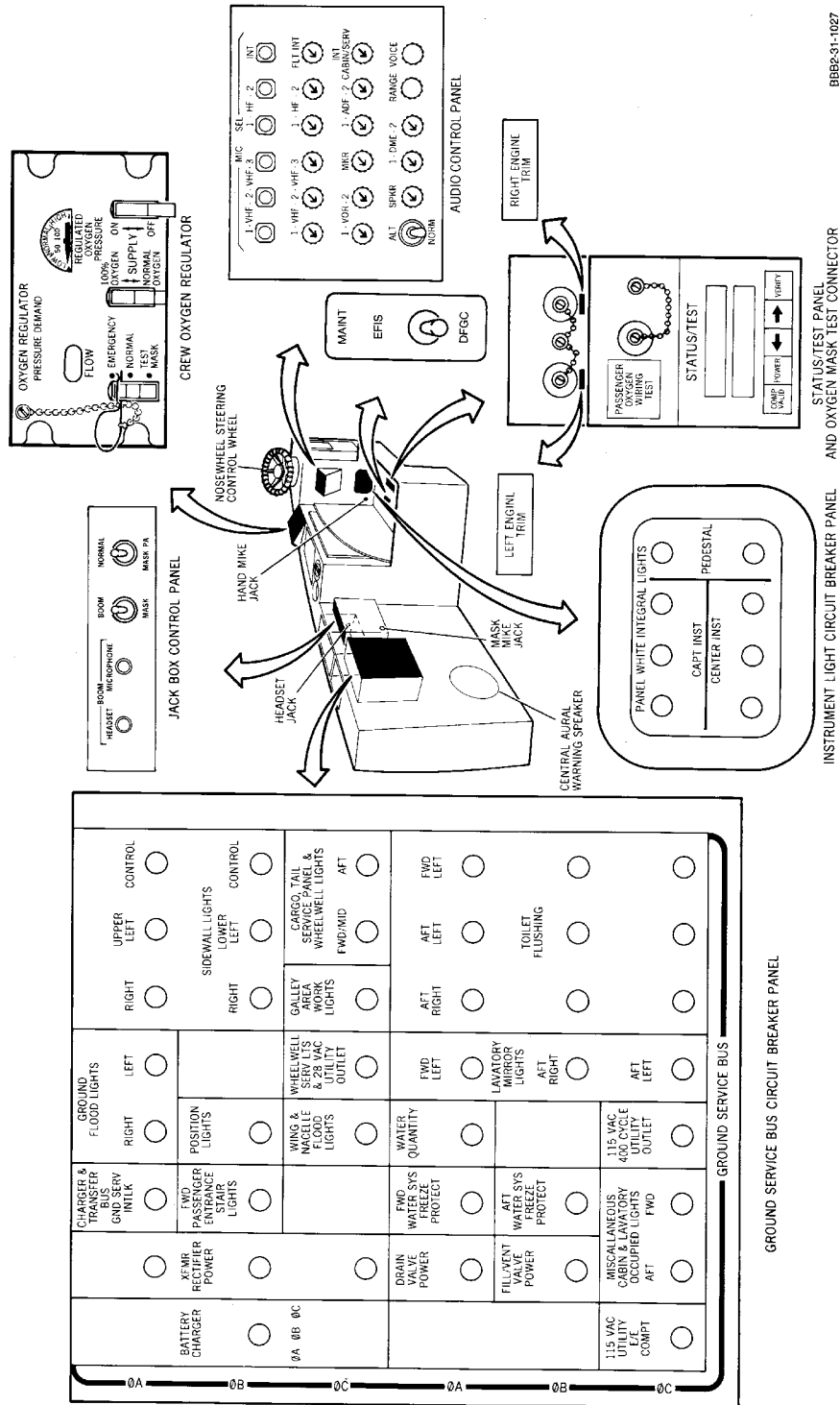
BB62-31-1114

Left Console
Figure 2/31-14-01-990-802 (Sheet 1 of 11)

EFFECTIVITY
WJE 401-404, 412, 414

31-14-01

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BBB2-31-1027

STATUS/TEST PANEL AND OXYGEN MASK TEST CONNECTOR

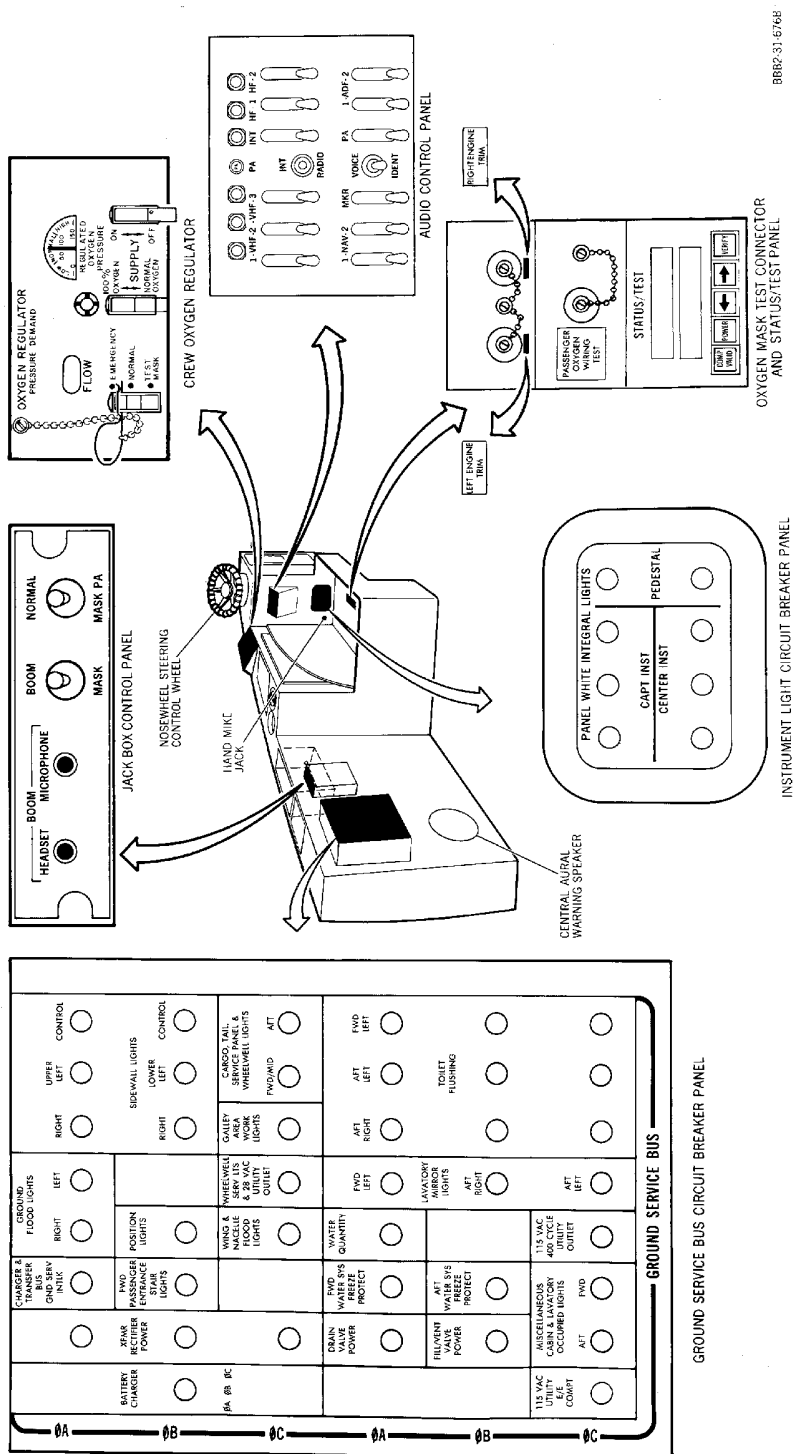
INSTRUMENT LIGHT CIRCUIT BREAKER PANEL

Left Console
Figure 2/31-14-01-990-802 (Sheet 2 of 11)

EFFECTIVITY
WJE 886, 887

31-14-01

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BBB-31-676B

Left Console
Figure 2/31-14-01-990-802 (Sheet 3 of 11)

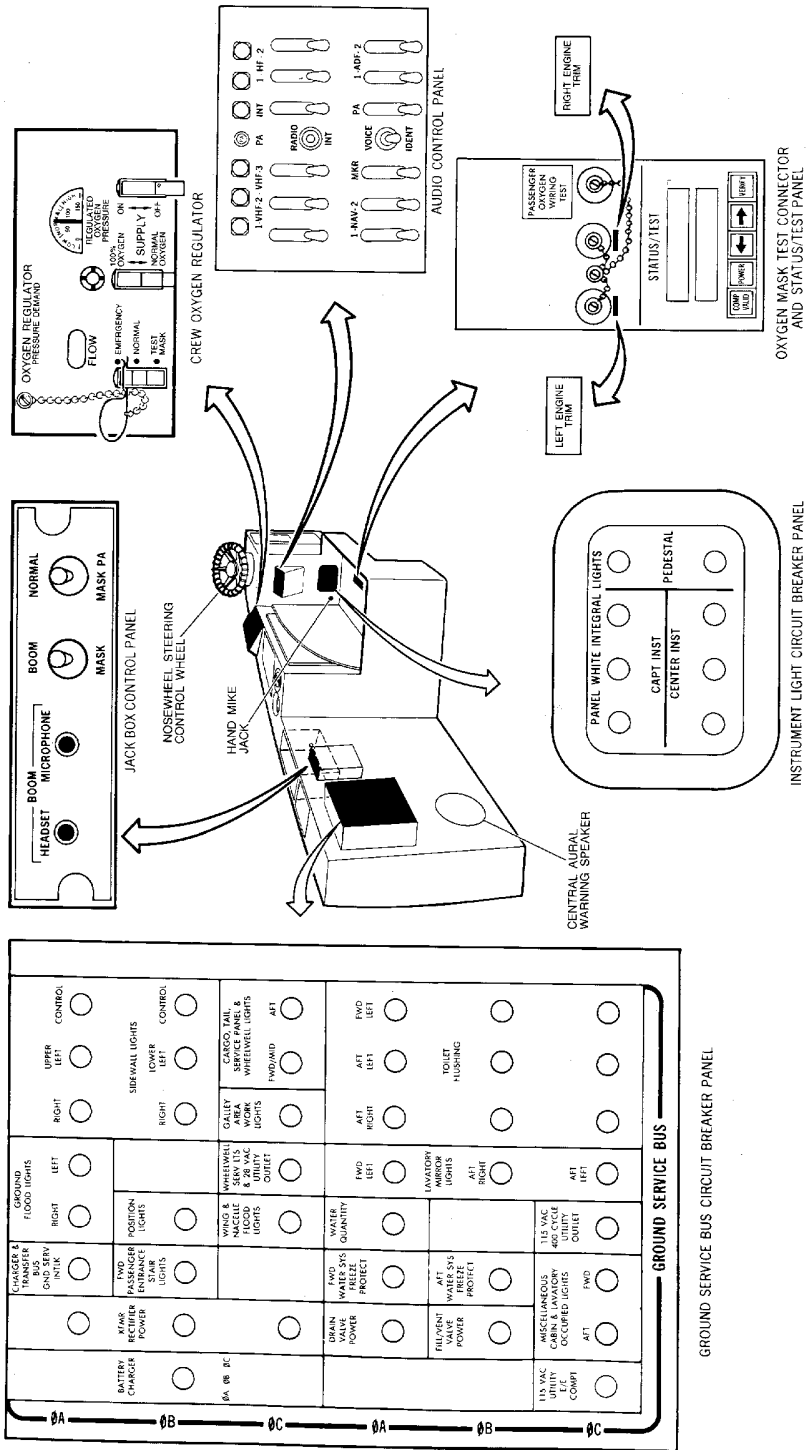
EFFECTIVITY
WJE 405, 409, 873, 874, 881, 883, 884, 893

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TP-80MM-WJE

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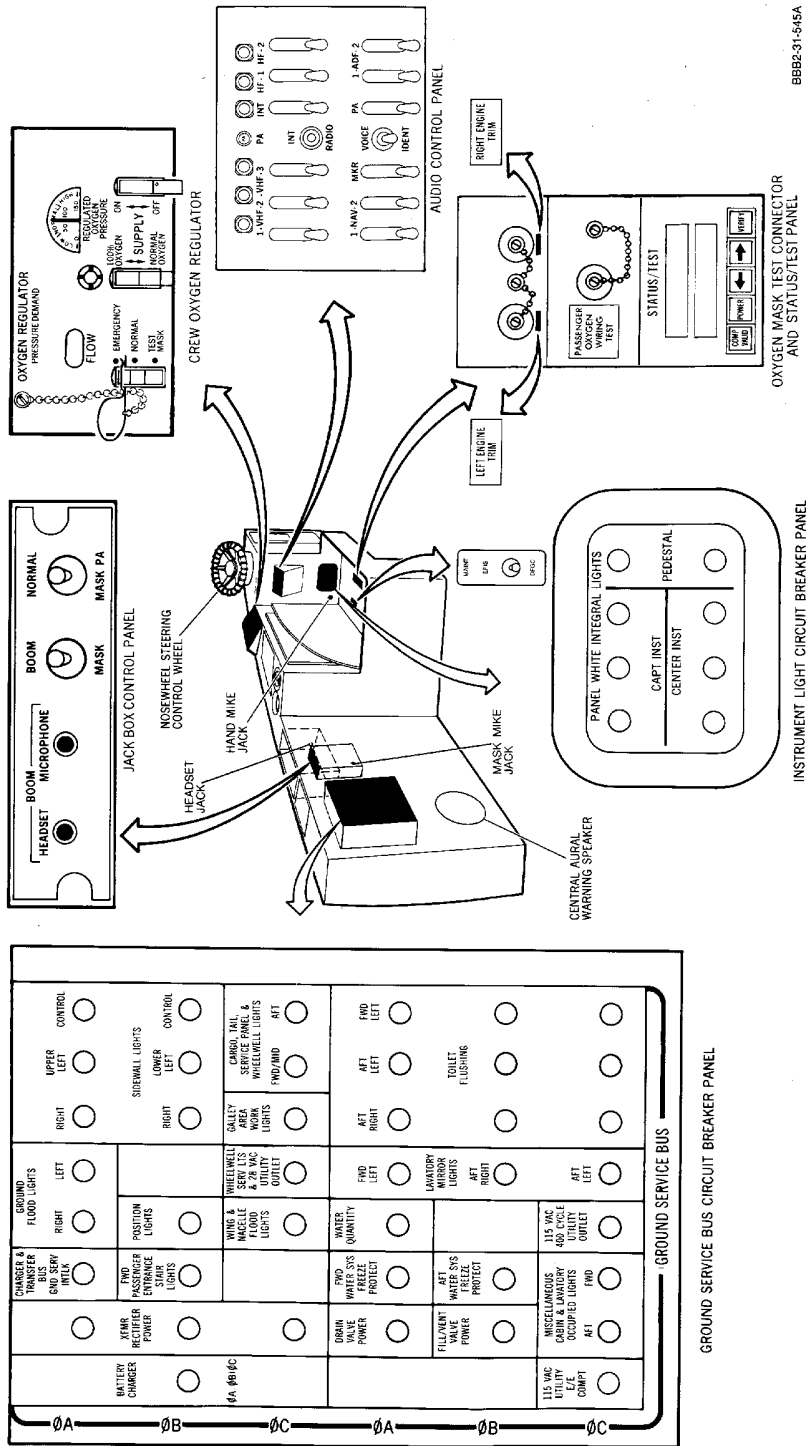
BBB2-31-888A

Left Console
Figure 2/31-14-01-990-802 (Sheet 4 of 11)

EFFECTIVITY
WJE 892

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



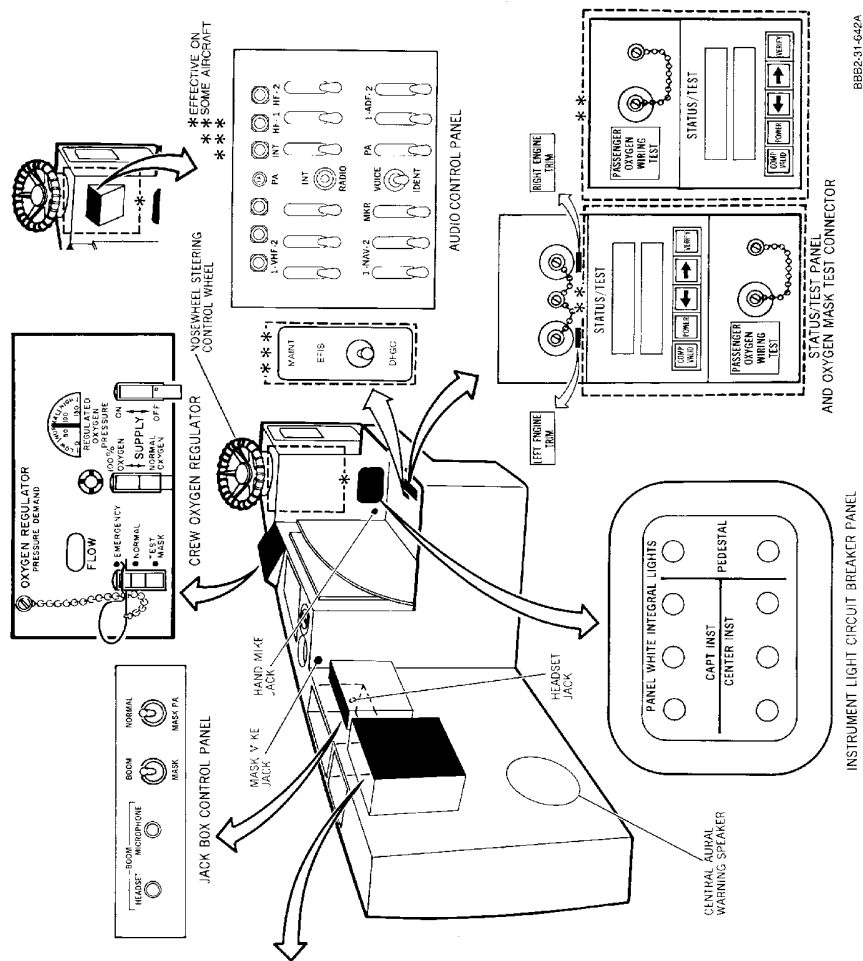
BBB2-31-545A

Left Console
Figure 2/31-14-01-990-802 (Sheet 5 of 11)

EFFECTIVITY
WJE 406

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-642A

BATTERY CHARGER		115 VAC UTILITY COMP		115 VAC CABIN & JAWDORY OCCUPIED LIGHTS		115 VAC 480 CYCLE OUTLET		115 VAC FWD		GROUND SERVICE BUS	
DRAIN VALVE POWER		MISCELLANEOUS		MISCELLANEOUS		MISCELLANEOUS		MISCELLANEOUS		GROUND SERVICE BUS	
TUS/GEN VALVE POWER		WATER SYS FREEZE PROTECT		WATER SYS FREEZE PROTECT		WATER SYS FREEZE PROTECT		WATER SYS FREEZE PROTECT		GROUND SERVICE BUS	
EWD WATER SYS PROTECT		WATER SYS QUANTITY		WATER SYS QUANTITY		WATER SYS QUANTITY		WATER SYS QUANTITY		GROUND SERVICE BUS	
WING & WHEELWELL FLOOD LIGHTS		WING & WHEELWELL FLOOD LIGHTS		WING & WHEELWELL FLOOD LIGHTS		WING & WHEELWELL FLOOD LIGHTS		WING & WHEELWELL FLOOD LIGHTS		GROUND SERVICE BUS	
FWD PASSENGER ENTRANCE LIGHTS		POSITION LIGHTS		POSITION LIGHTS		POSITION LIGHTS		POSITION LIGHTS		GROUND SERVICE BUS	
CHARGER & TRANSFER BUS		GROUND LIGHTS		GROUND LIGHTS		GROUND LIGHTS		GROUND LIGHTS		GROUND SERVICE BUS	
UPPER CONTROL		UPPER CONTROL		UPPER CONTROL		UPPER CONTROL		UPPER CONTROL		GROUND SERVICE BUS	
RIGHT		RIGHT		RIGHT		RIGHT		RIGHT		GROUND SERVICE BUS	
LEFT		LEFT		LEFT		LEFT		LEFT		GROUND SERVICE BUS	
SIDELIGHTS		SIDELIGHTS		SIDELIGHTS		SIDELIGHTS		SIDELIGHTS		GROUND SERVICE BUS	
LOWER CONTROL		LOWER CONTROL		LOWER CONTROL		LOWER CONTROL		LOWER CONTROL		GROUND SERVICE BUS	
CARGO BAY SERVICE PANEL & WHEELWELL LIGHTS		CARGO BAY SERVICE PANEL & WHEELWELL LIGHTS		CARGO BAY SERVICE PANEL & WHEELWELL LIGHTS		CARGO BAY SERVICE PANEL & WHEELWELL LIGHTS		CARGO BAY SERVICE PANEL & WHEELWELL LIGHTS		GROUND SERVICE BUS	
CALLEY AREA WORK LIGHTS		CALLEY AREA WORK LIGHTS		CALLEY AREA WORK LIGHTS		CALLEY AREA WORK LIGHTS		CALLEY AREA WORK LIGHTS		GROUND SERVICE BUS	
FWD/MID AFT		FWD/MID AFT		FWD/MID AFT		FWD/MID AFT		FWD/MID AFT		GROUND SERVICE BUS	
TOILET FLUSHING		TOILET FLUSHING		TOILET FLUSHING		TOILET FLUSHING		TOILET FLUSHING		GROUND SERVICE BUS	
FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		GROUND SERVICE BUS	
AFT RIGHT		AFT RIGHT		AFT RIGHT		AFT RIGHT		AFT RIGHT		GROUND SERVICE BUS	
AFT LEFT		AFT LEFT		AFT LEFT		AFT LEFT		AFT LEFT		GROUND SERVICE BUS	
FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		GROUND SERVICE BUS	
JAWDORY WORK LIGHTS		JAWDORY WORK LIGHTS		JAWDORY WORK LIGHTS		JAWDORY WORK LIGHTS		JAWDORY WORK LIGHTS		GROUND SERVICE BUS	
AFT RIGHT		AFT RIGHT		AFT RIGHT		AFT RIGHT		AFT RIGHT		GROUND SERVICE BUS	
AFT LEFT		AFT LEFT		AFT LEFT		AFT LEFT		AFT LEFT		GROUND SERVICE BUS	
FWD RIGHT		FWD RIGHT		FWD RIGHT		FWD RIGHT		FWD RIGHT		GROUND SERVICE BUS	
FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		FWD LEFT		GROUND SERVICE BUS	

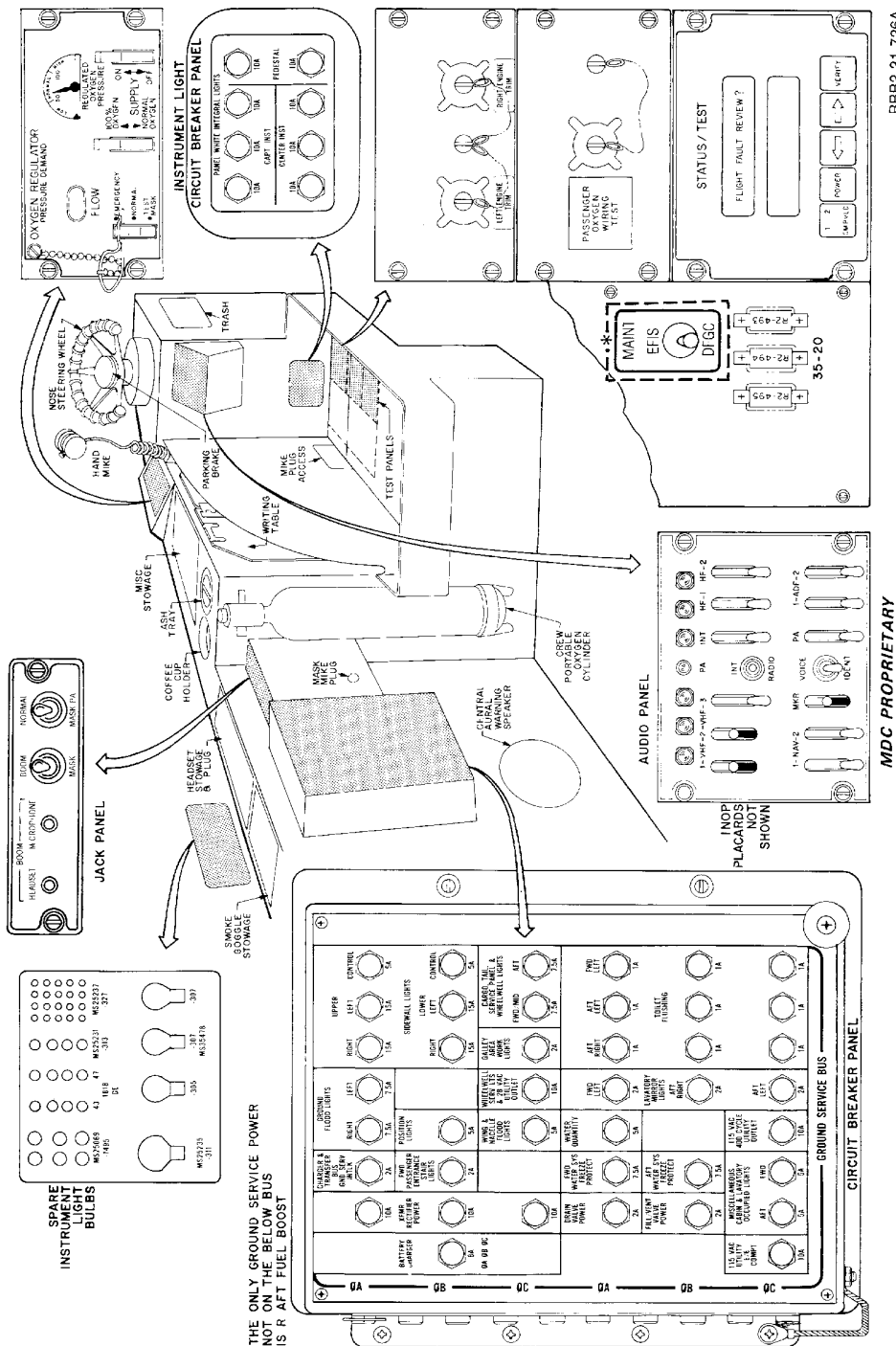
GROUND SERVICE BUS CIRCUIT BREAKER PANEL

Left Console
Figure 2/31-14-01-990-802 (Sheet 6 of 11)

EFFECTIVITY
WJE 407, 408, 411, 880

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-726A

MDC PROPRIETARY

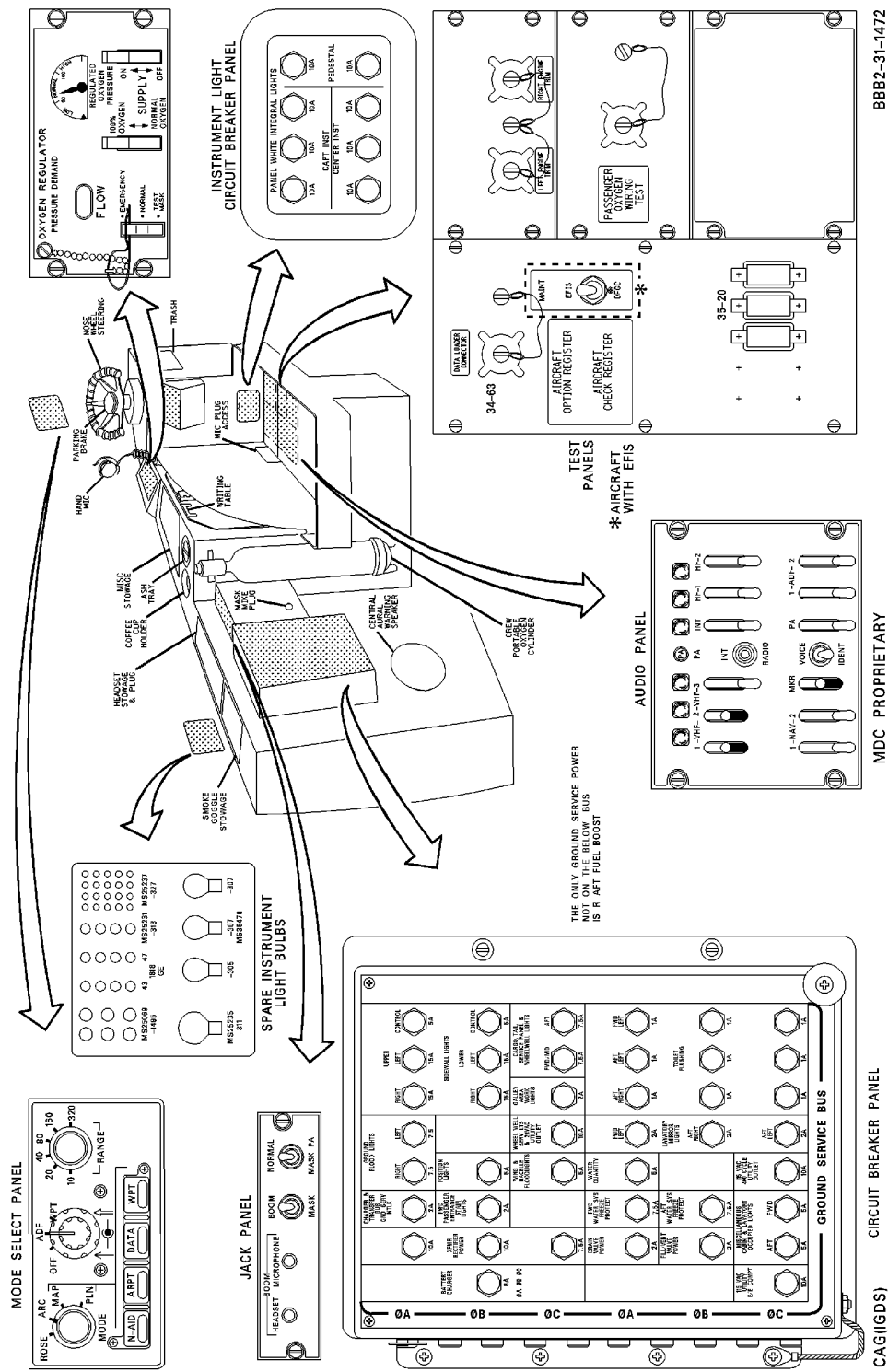
Left Console
Figure 2/31-14-01-990-802 (Sheet 7 of 11)

EFFECTIVITY
WJE 875, 876, 878, 879

TP-80MM-WJE

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1472

MDC PROPRIETARY

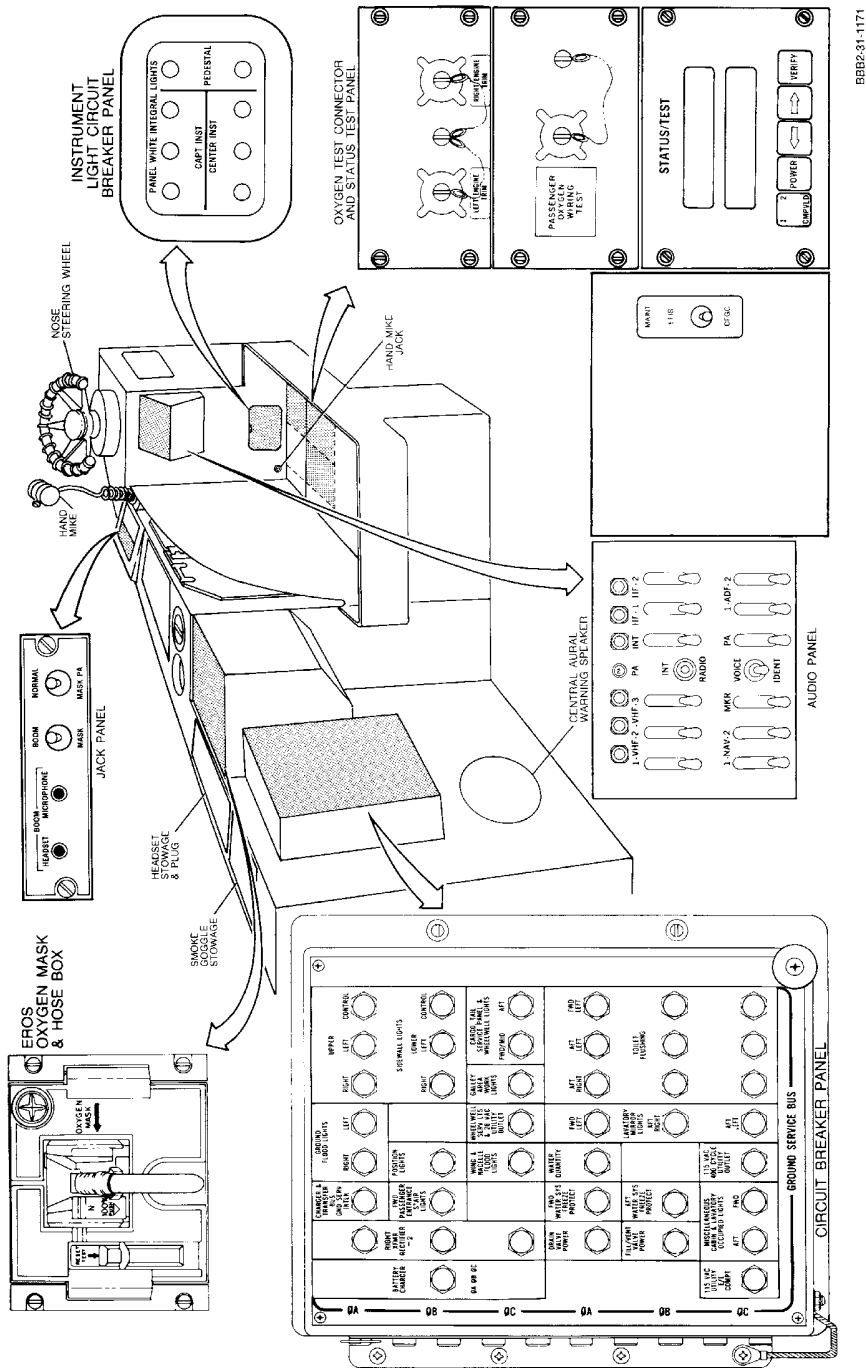
CAG(I/GDS) CIRCUIT BREAKER PANEL

Left Console
Figure 2/31-14-01-990-802 (Sheet 8 of 11)

EFFECTIVITY
WJE 877

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1171

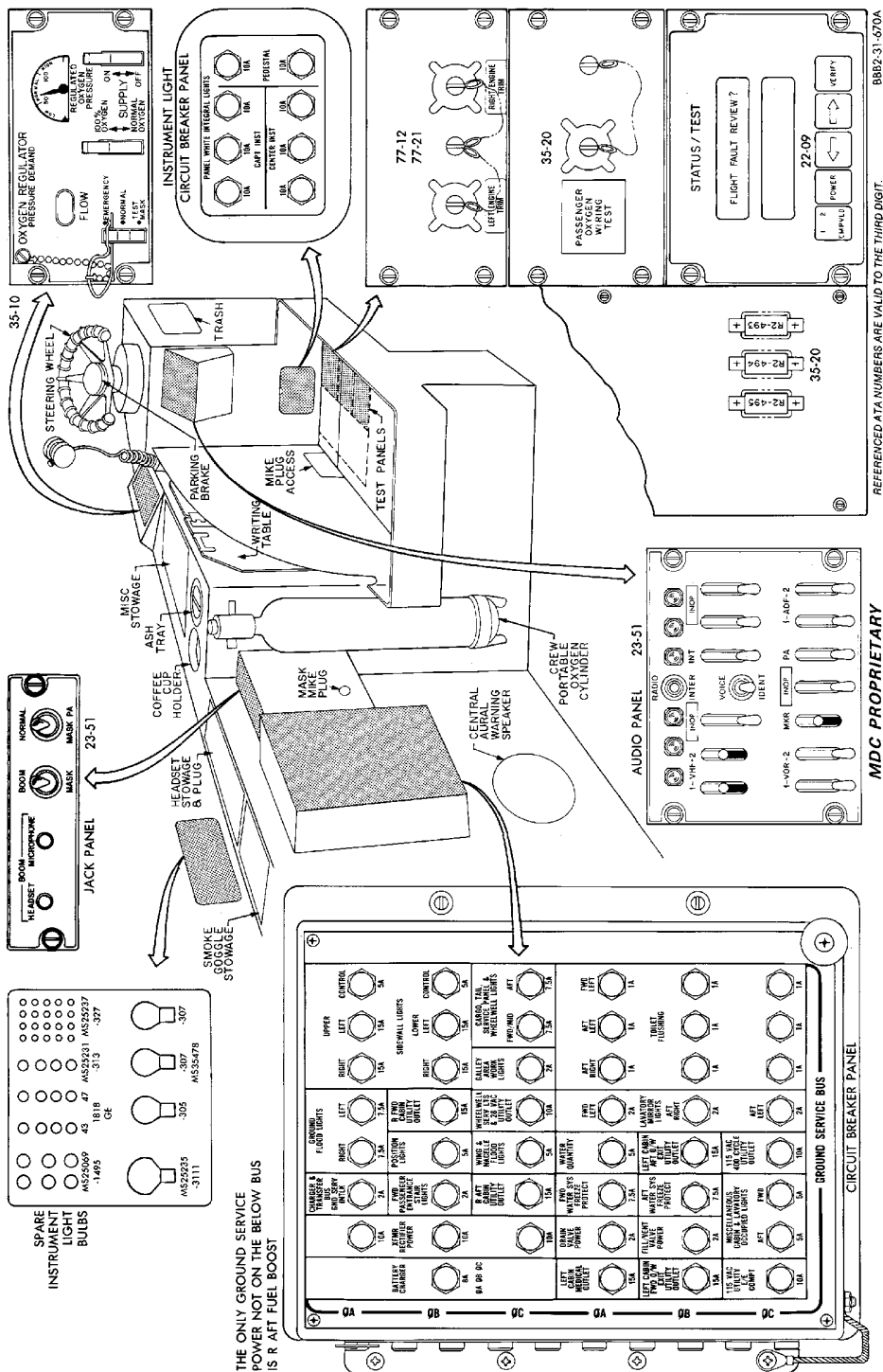
Left Console Figure 2/31-14-01-990-802 (Sheet 9 of 11)

EFFECTIVITY
WJE 410

TP-80MM-WJE

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL

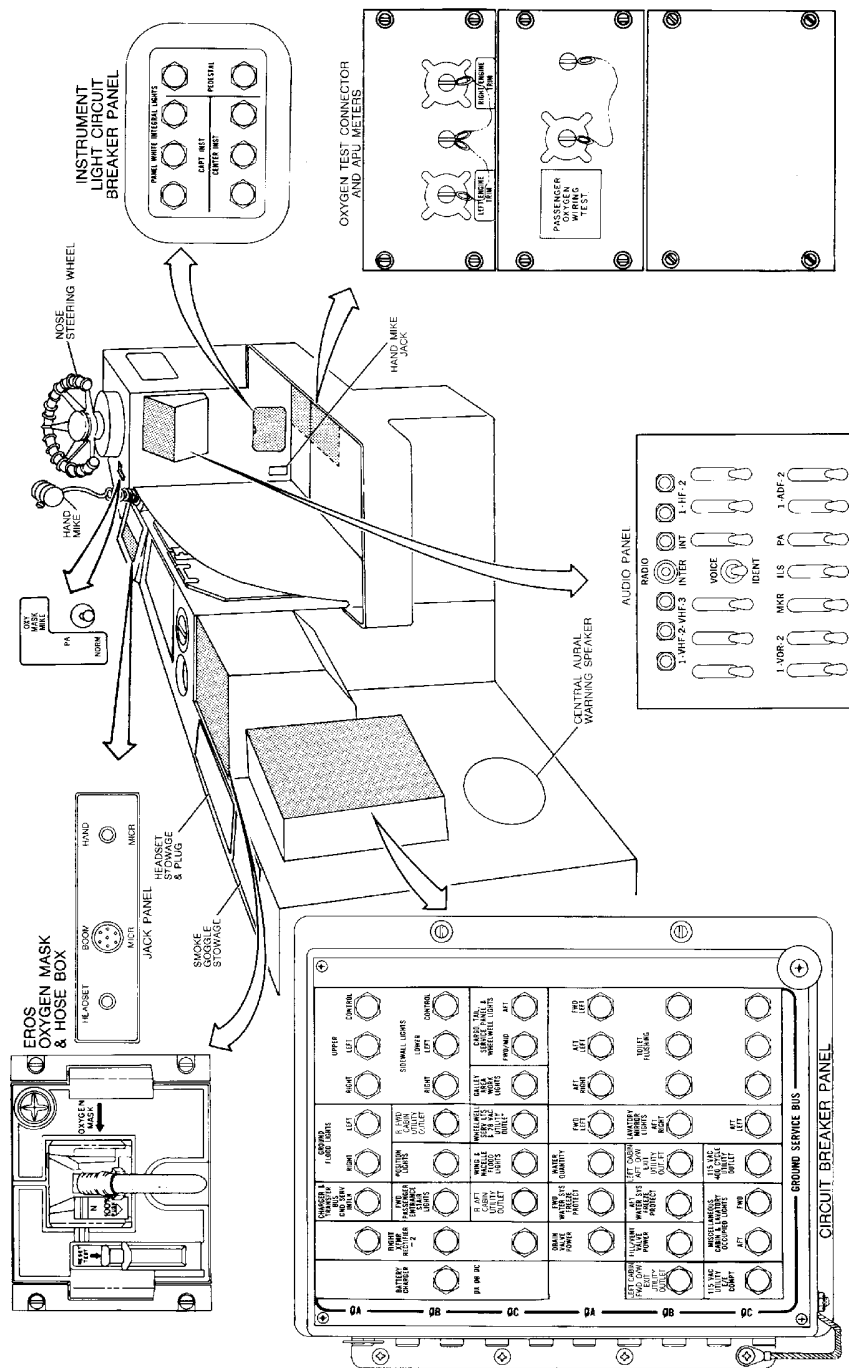


Left Console
Figure 2/31-14-01-990-802 (Sheet 10 of 11)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-14-01

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BBB2-31-1093

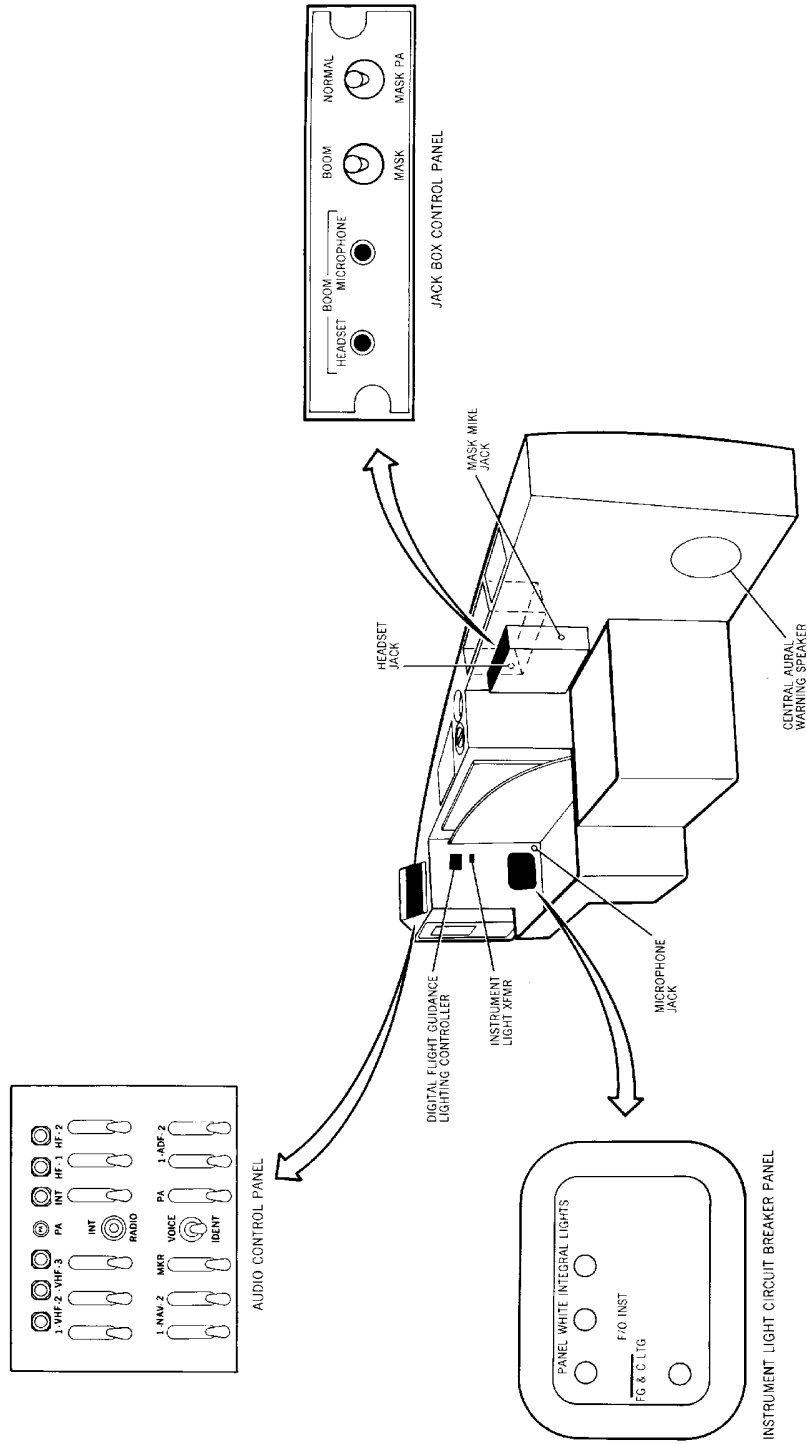
Left Console
Figure 2/31-14-01-990-802 (Sheet 11 of 11)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

31-14-01

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BB62-31-1116



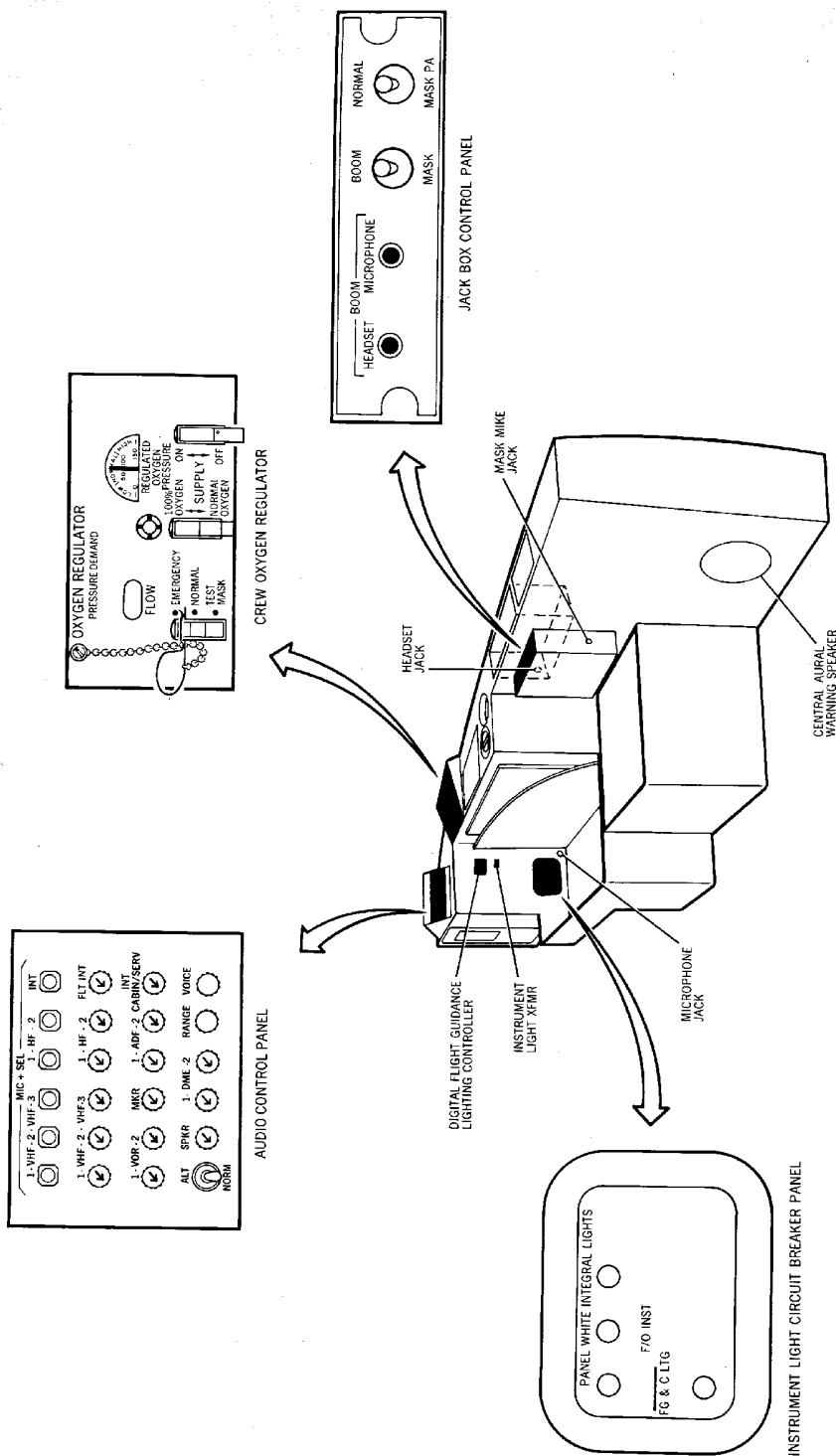
Right Console
Figure 3/31-14-01-990-803 (Sheet 1 of 10)

EFFECTIVITY
WJE 401-404, 412, 414

TP-80MM-WJE

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BBB2-31-536A



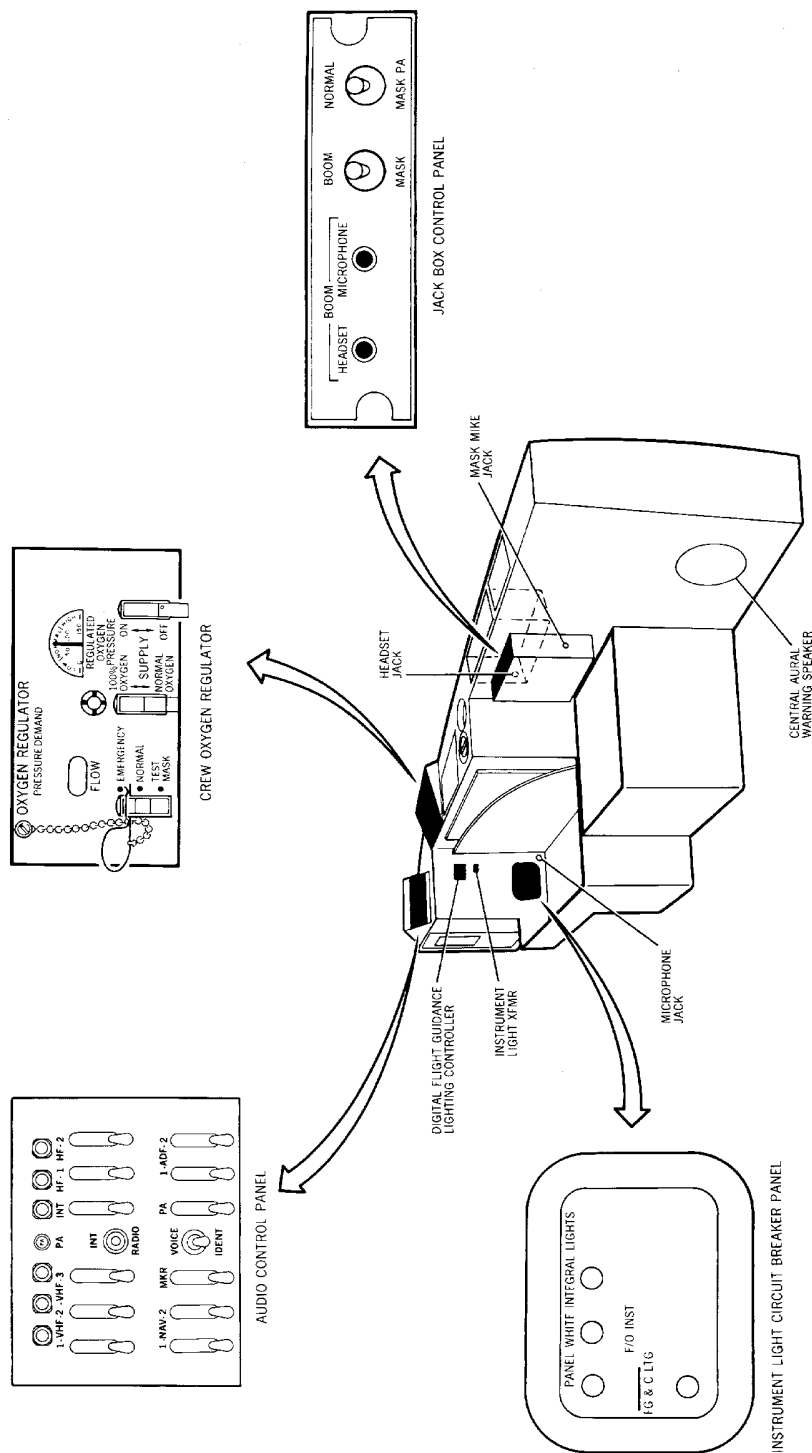
Right Console
Figure 3/31-14-01-990-803 (Sheet 2 of 10)

EFFECTIVITY
WJE 886, 887

31-14-01

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-588C



Right Console
Figure 3/31-14-01-990-803 (Sheet 3 of 10)

EFFECTIVITY
WJE 405, 406, 409, 873, 874, 881, 883, 884, 893

TP-80MM-WJE

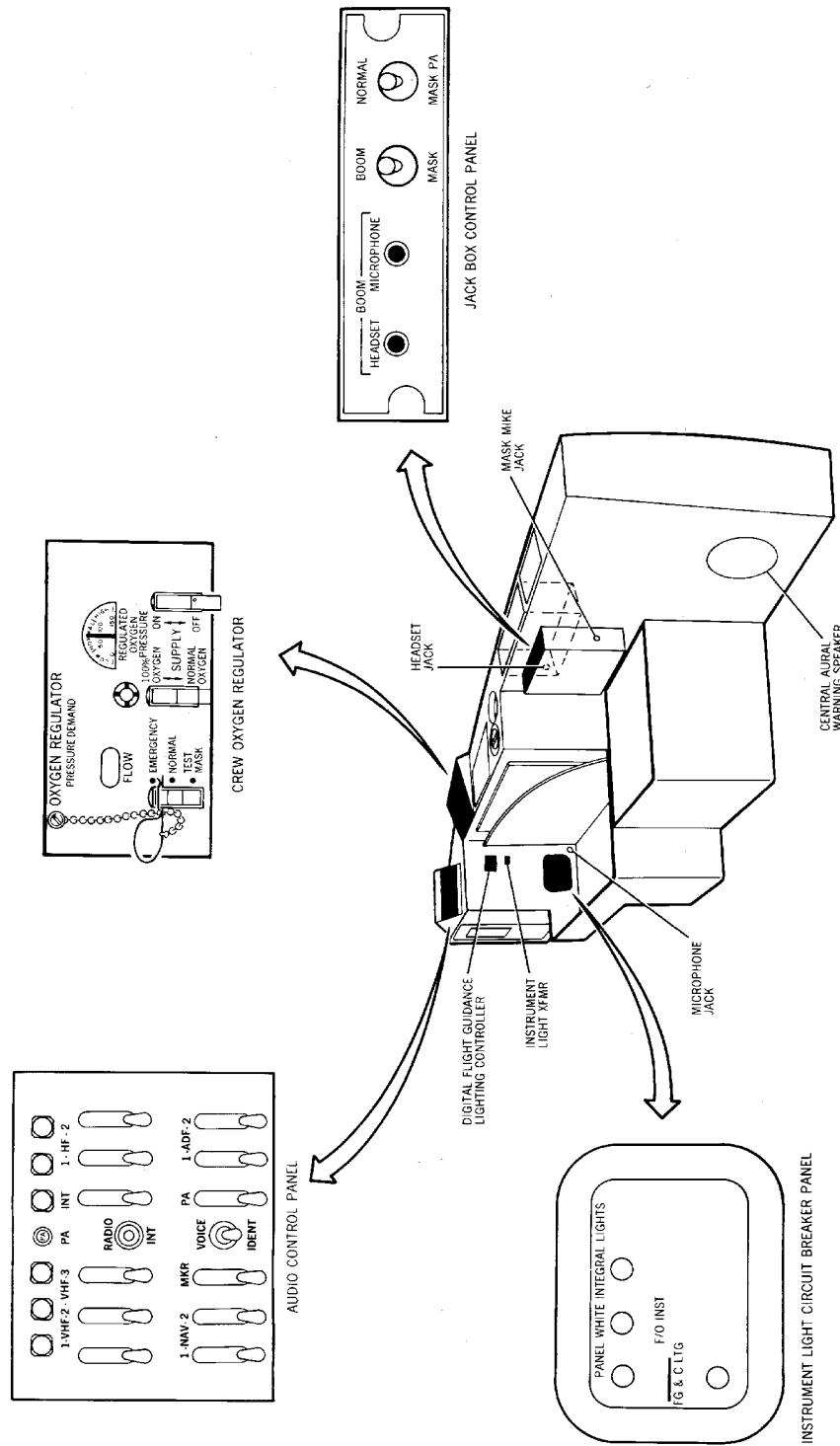
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Right Console
Figure 3/31-14-01-990-803 (Sheet 4 of 10)

EFFECTIVITY
WJE 892

TP-80MM-WJE

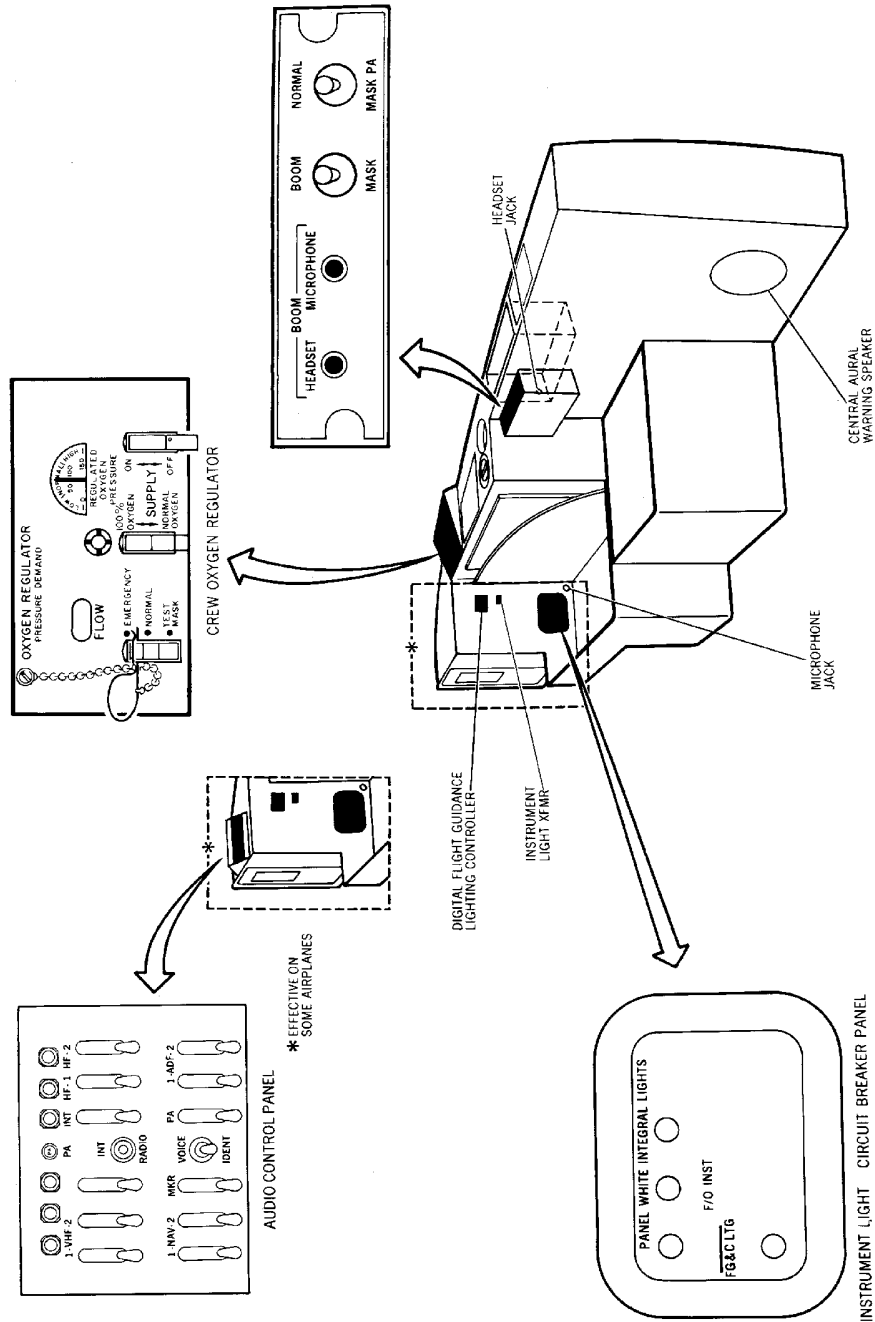
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Right Console
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EFFECTIVITY
WJE 407, 408, 411, 880

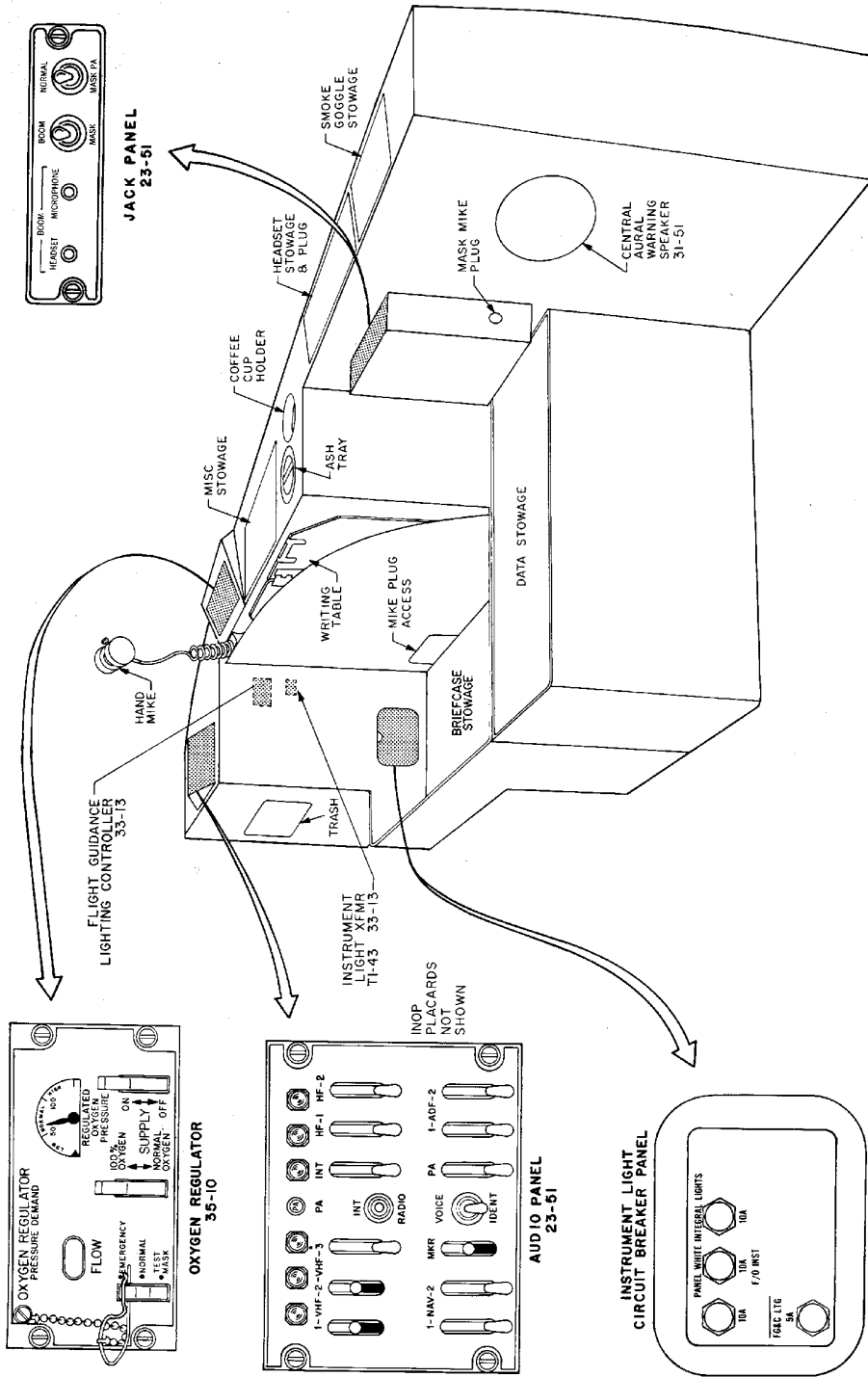
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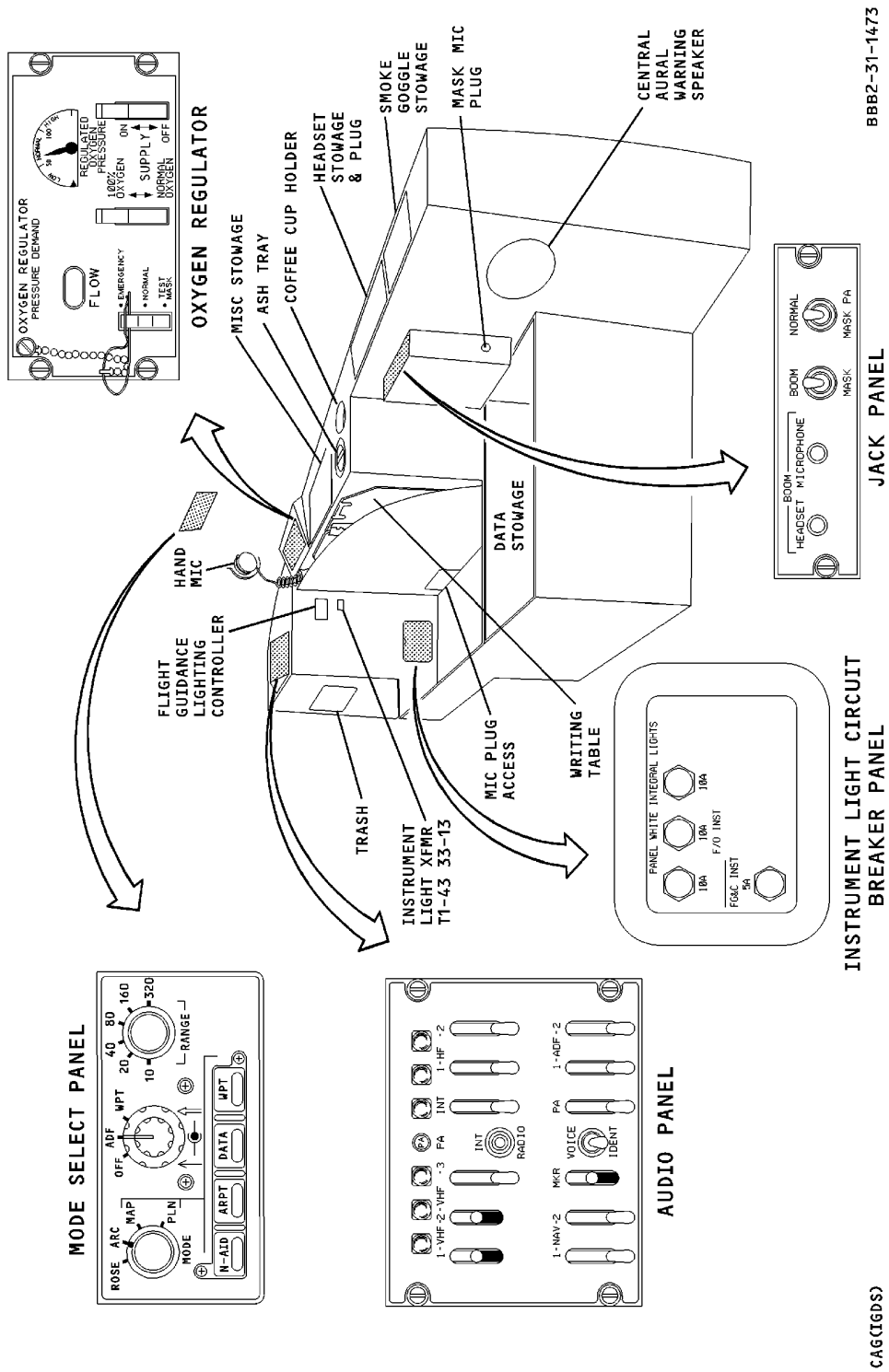
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MDC PROPRIETARY
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

Right Console
Figure 3/31-14-01-990-803 (Sheet 6 of 10)

EFFECTIVITY
WJE 875, 876, 878, 879

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Right Console
Figure 3/31-14-01-990-803 (Sheet 7 of 10)

BBB2-31-1473

INSTRUMENT LIGHT CIRCUIT
BREAKER PANEL

CAG16DS

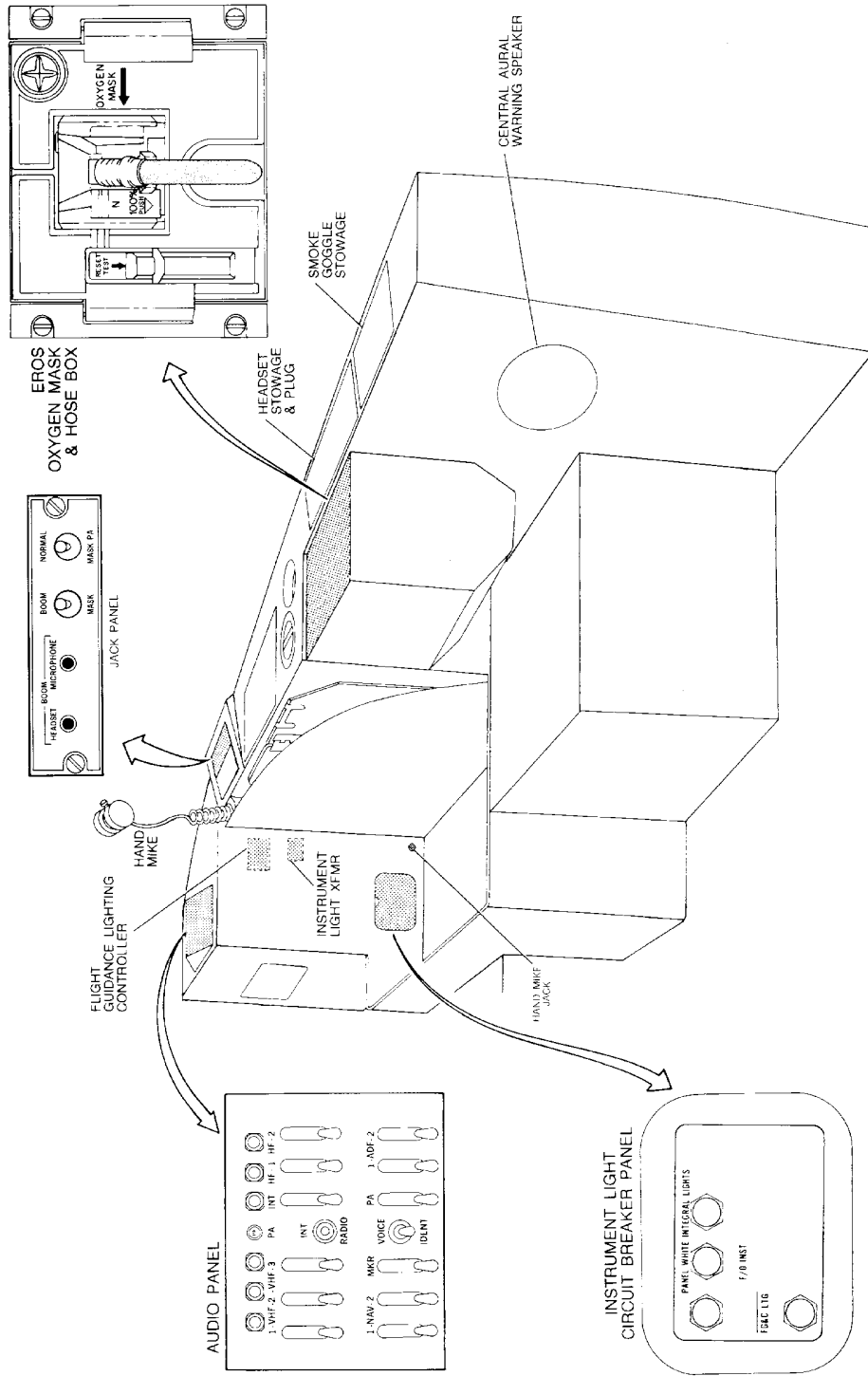
EFFECTIVITY
WJE 877

TP-80MM-WJE

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BB02-31-1172



Right Console
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EFFECTIVITY
WJE 410

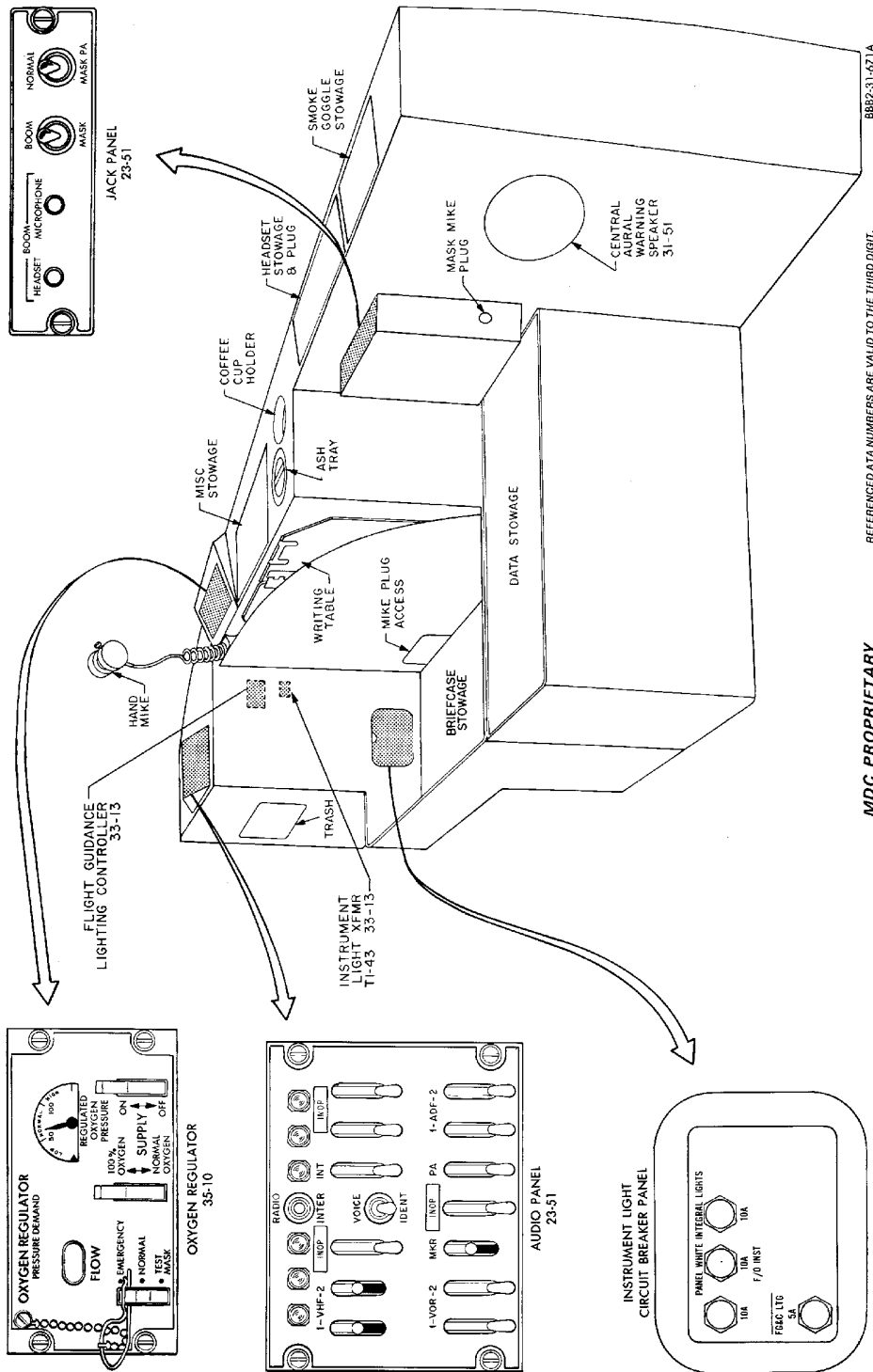
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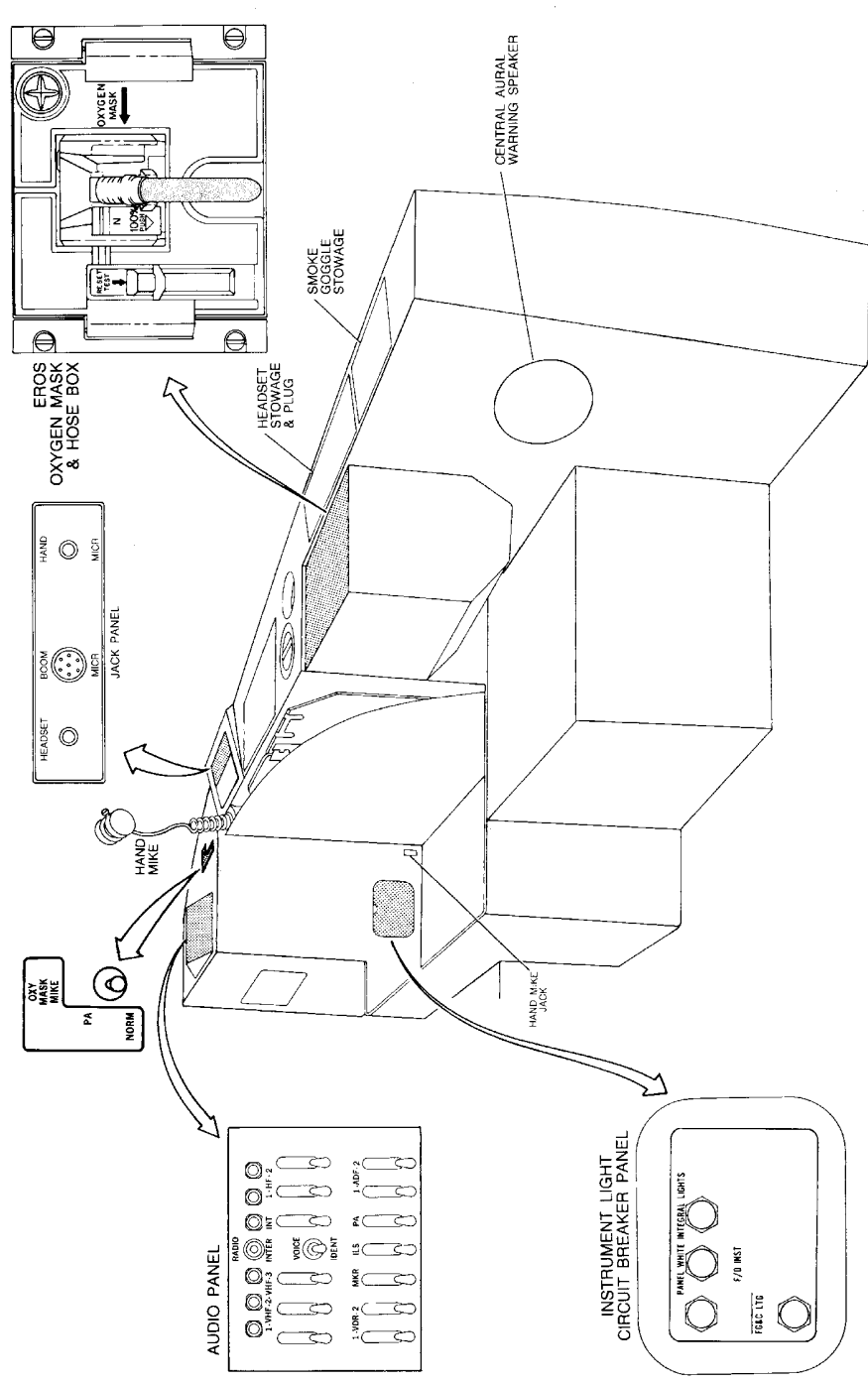


Right Console
Figure 3/31-14-01-990-803 (Sheet 9 of 10)

EFFECTIVITY
 WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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Right Console
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EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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UPPER EPC CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION

1. General

- A. The upper EPC circuit breaker panel is located on the upper portion of the aft left bulkhead of the flight compartment.

2. Description

- A. The upper EPC circuit breaker panel provides a mounting base for the right instrument bus, the left and right radio bus, and the AC bus. (Figure 1)

3. Operation

- A.
To open a circuit, pull the applicable circuit breaker. To close a circuit, press the applicable circuit breaker.

EFFECTIVITY
WJE ALL

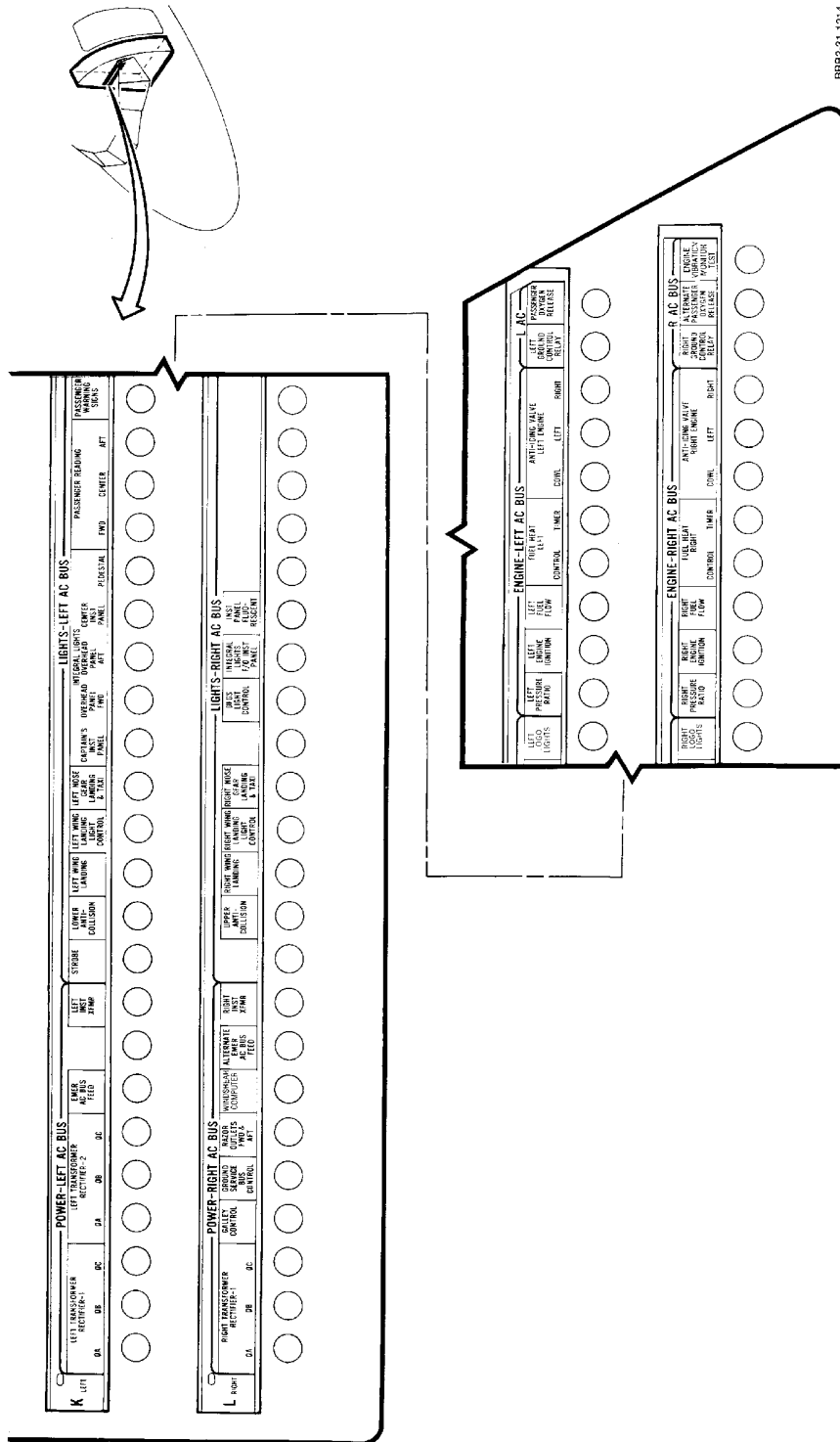
TP-80MM-WJE

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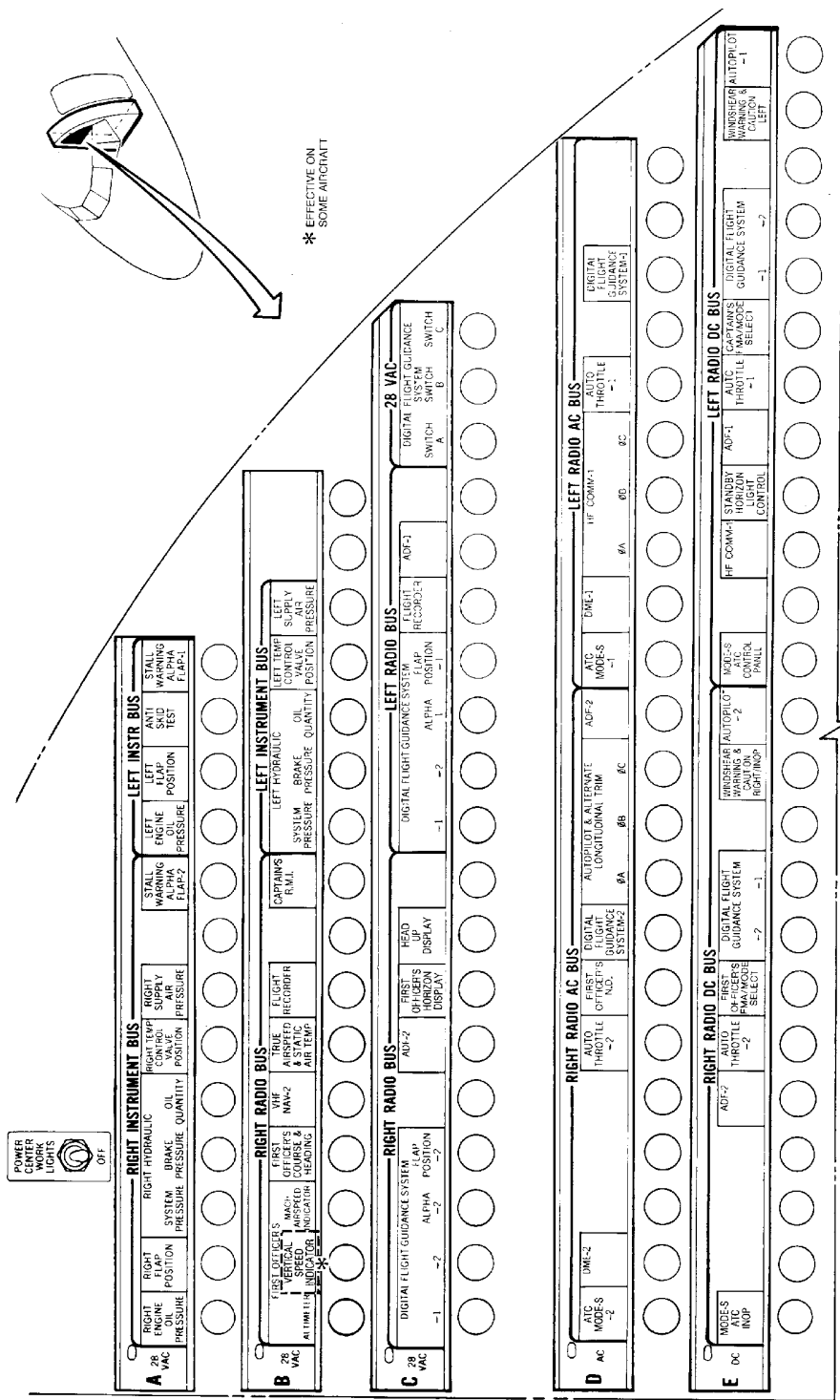
Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 407, 408, 411

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Upper EPC Circuit Breaker Panel
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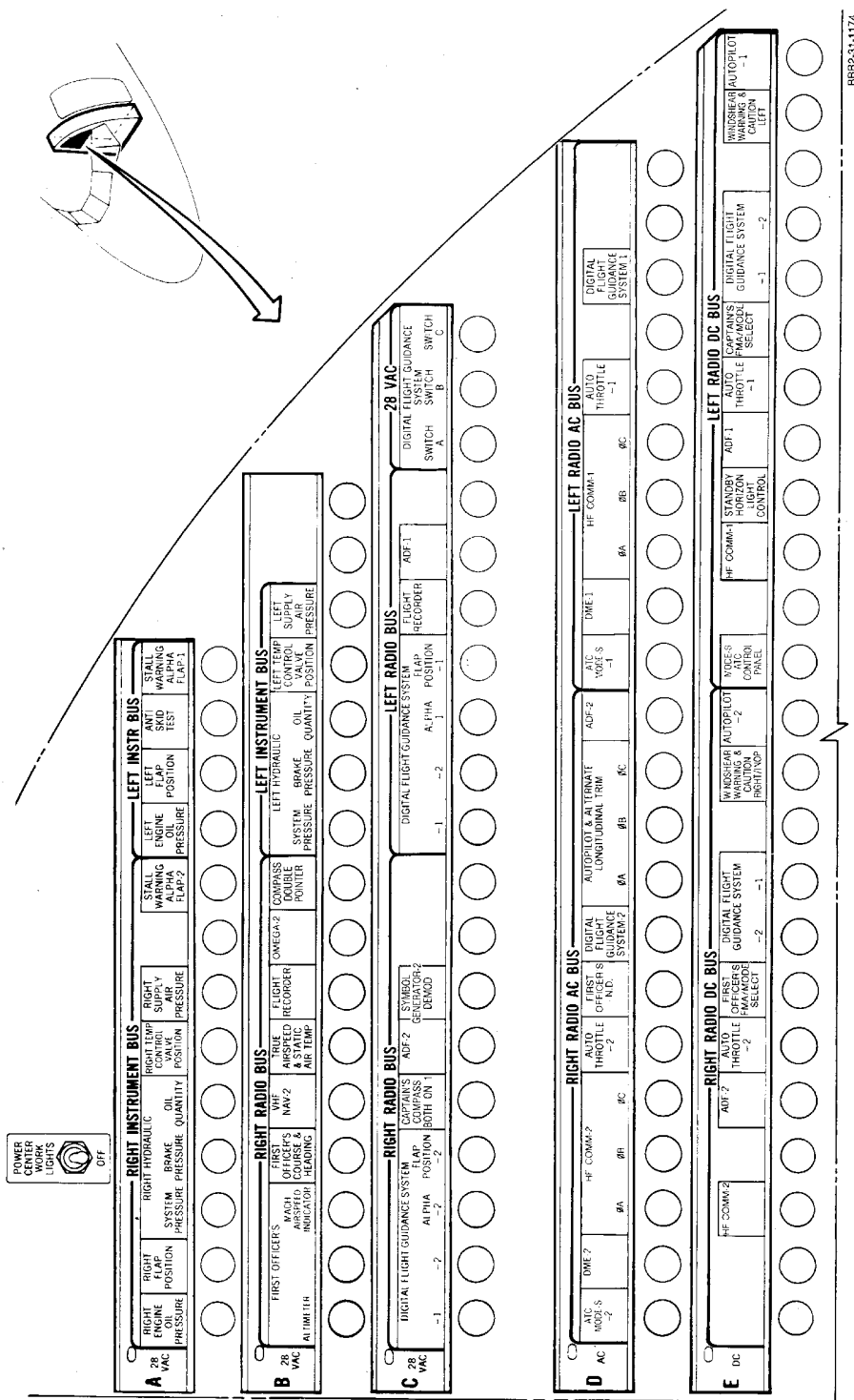
EFFECTIVITY
WJE 407, 408, 411

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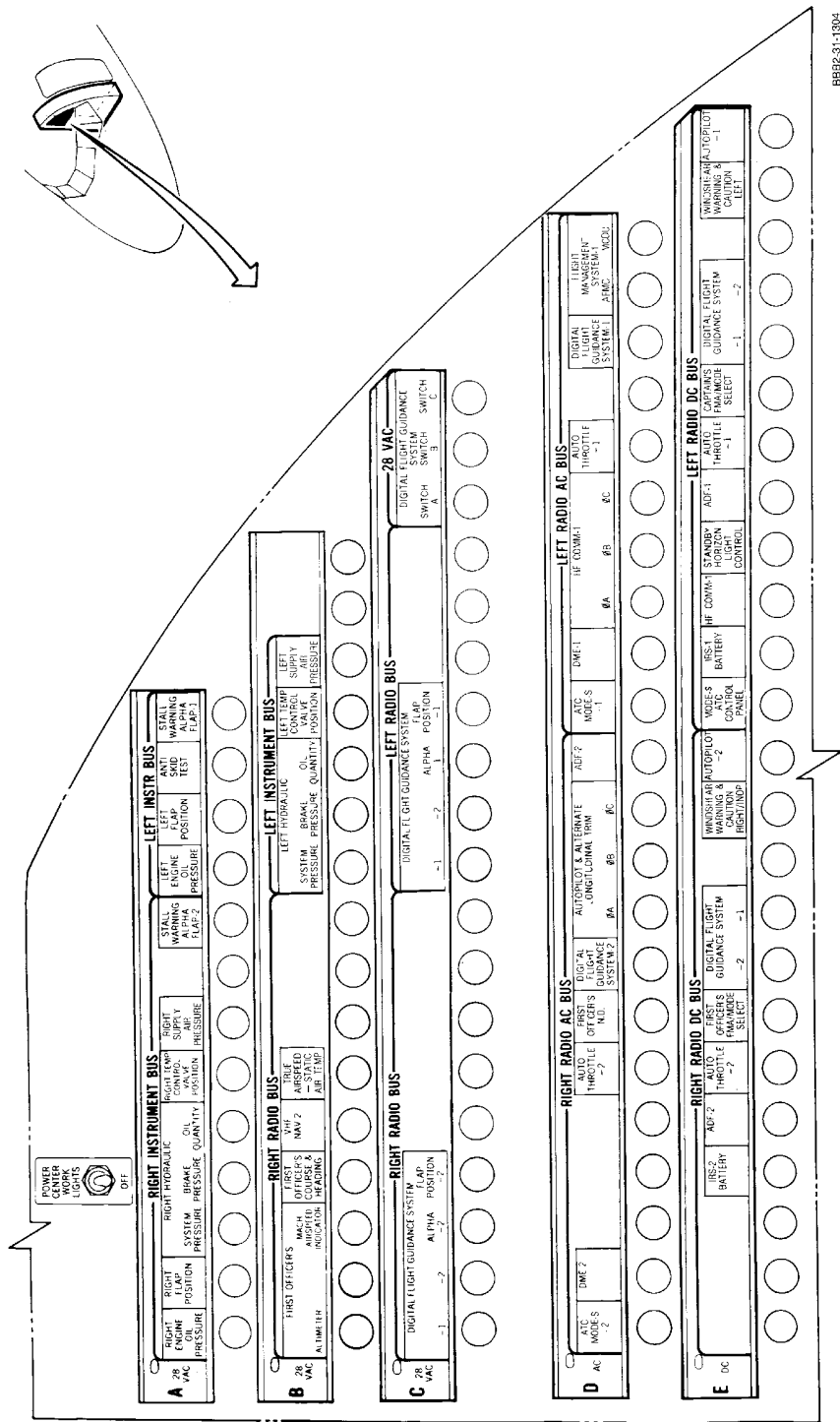


Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 410

TP-80MM-WJE

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BBB2-311304

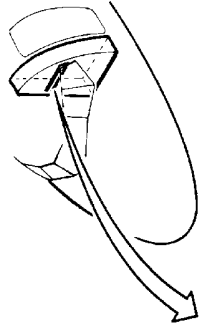
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 5 of 47)

EFFECTIVITY
WJE 875, 876, 878, 879

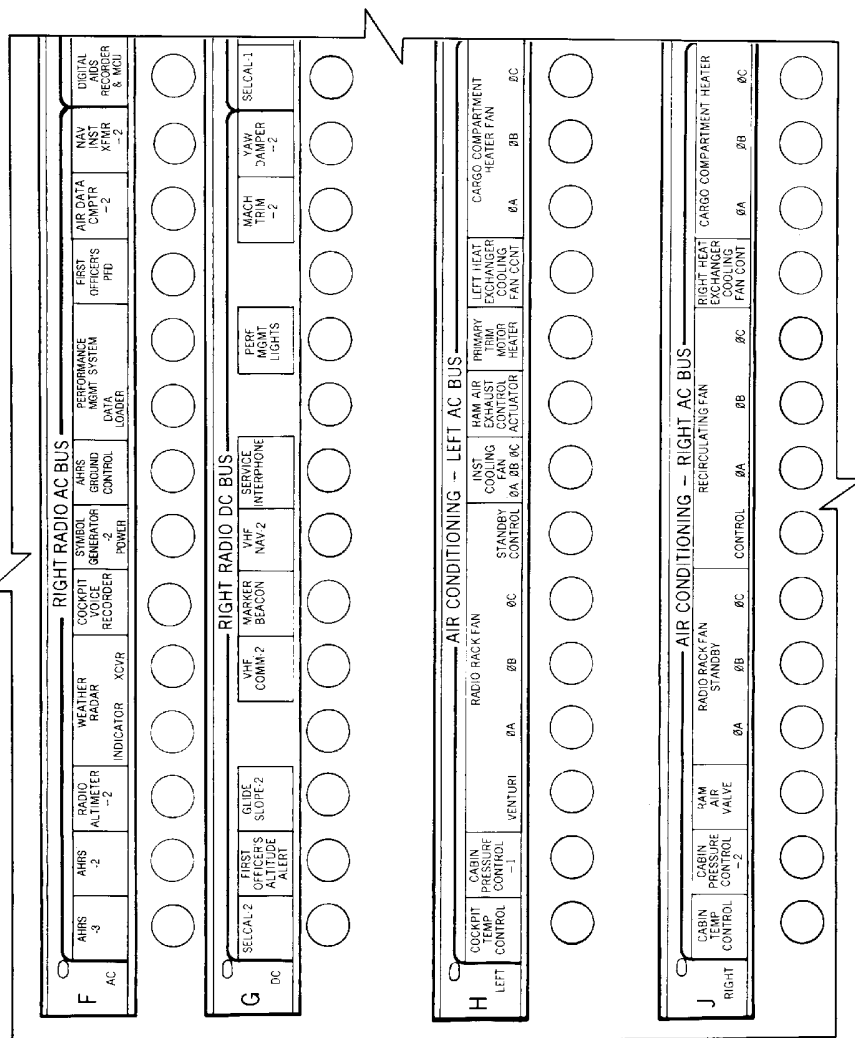
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**Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 407, 408, 411

TP-80MM-WJE

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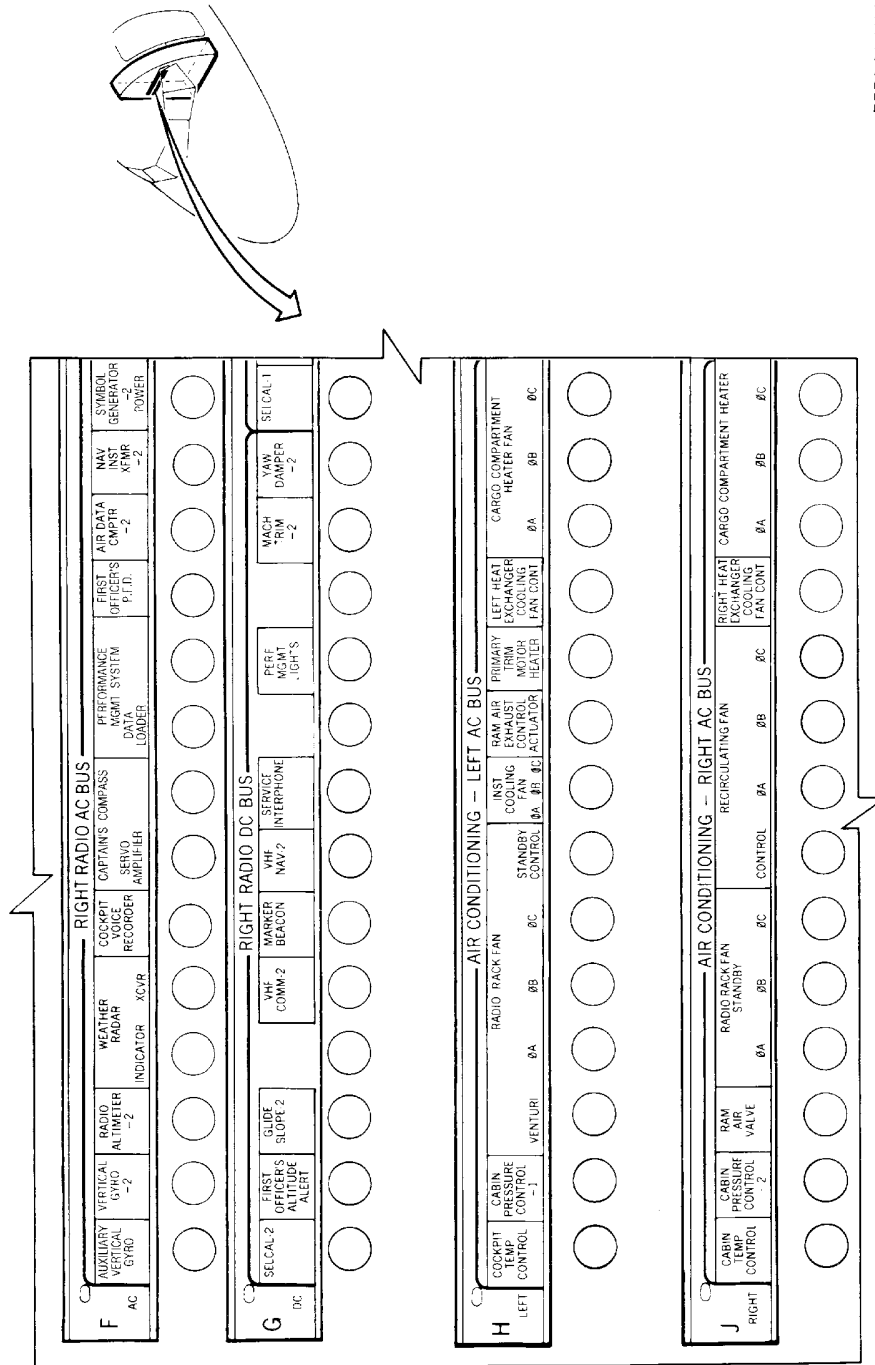
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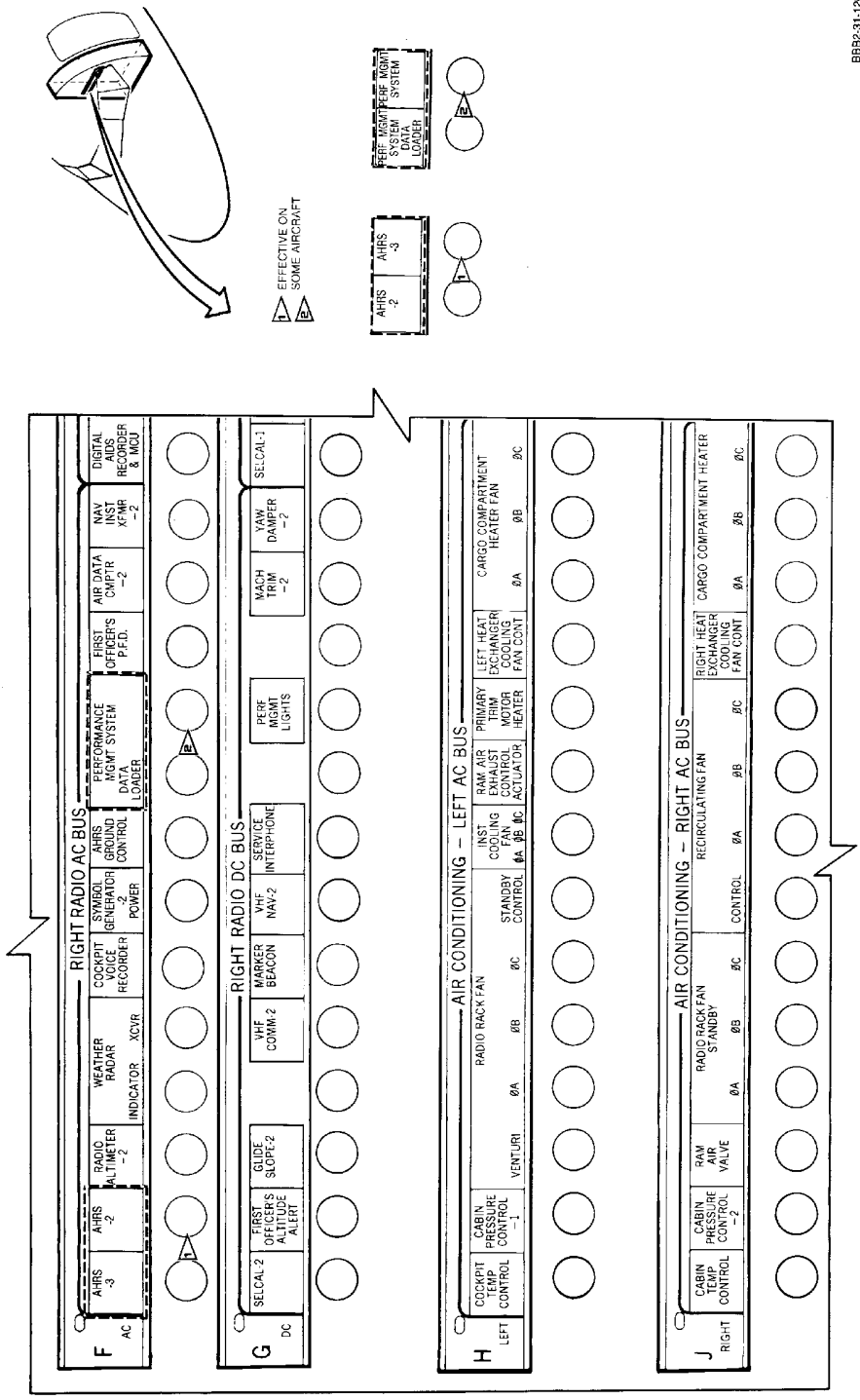
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 7 of 47)**

EFFECTIVITY
WJE 410

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**Upper EPC Circuit Breaker Panel
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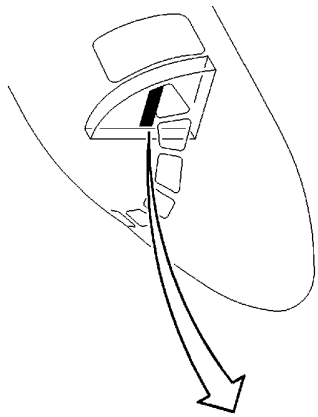
EFFECTIVITY
WJE 407, 408, 411

TP-80MM-WJE

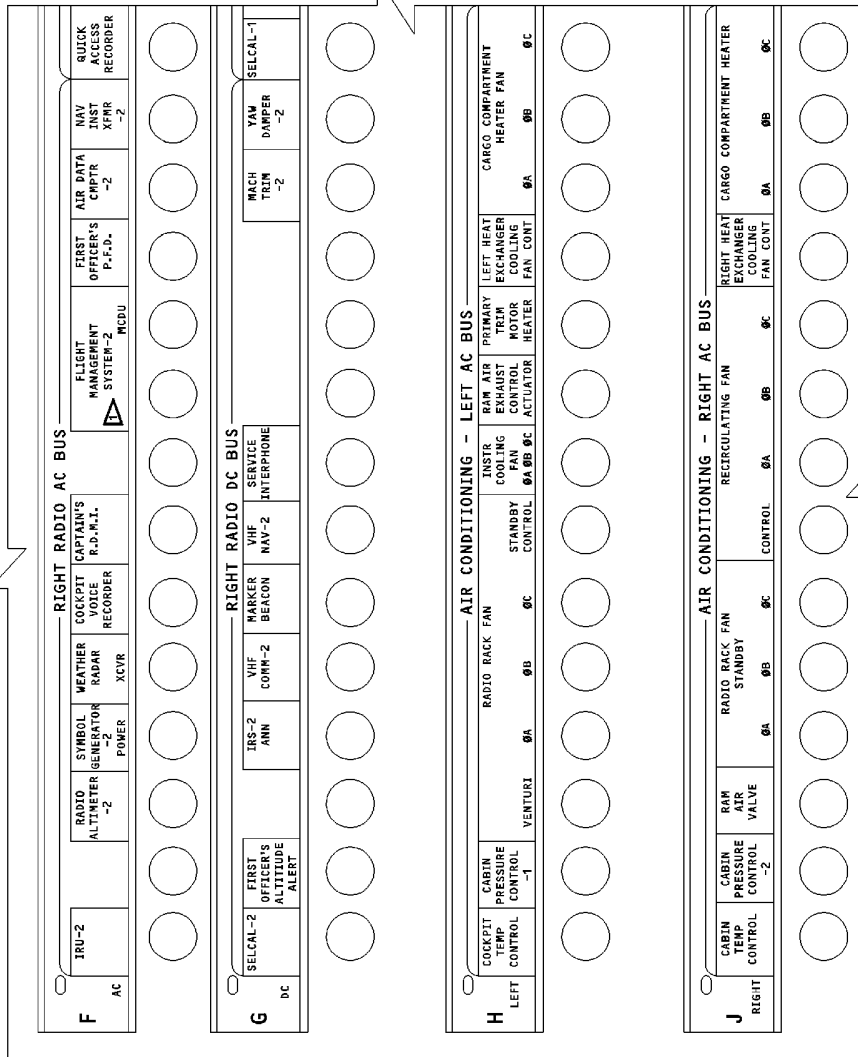
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1 EFFECTIVE ON SOME AIRCRAFT



Upper EPC Circuit Breaker Panel
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BBB2-31-1305A

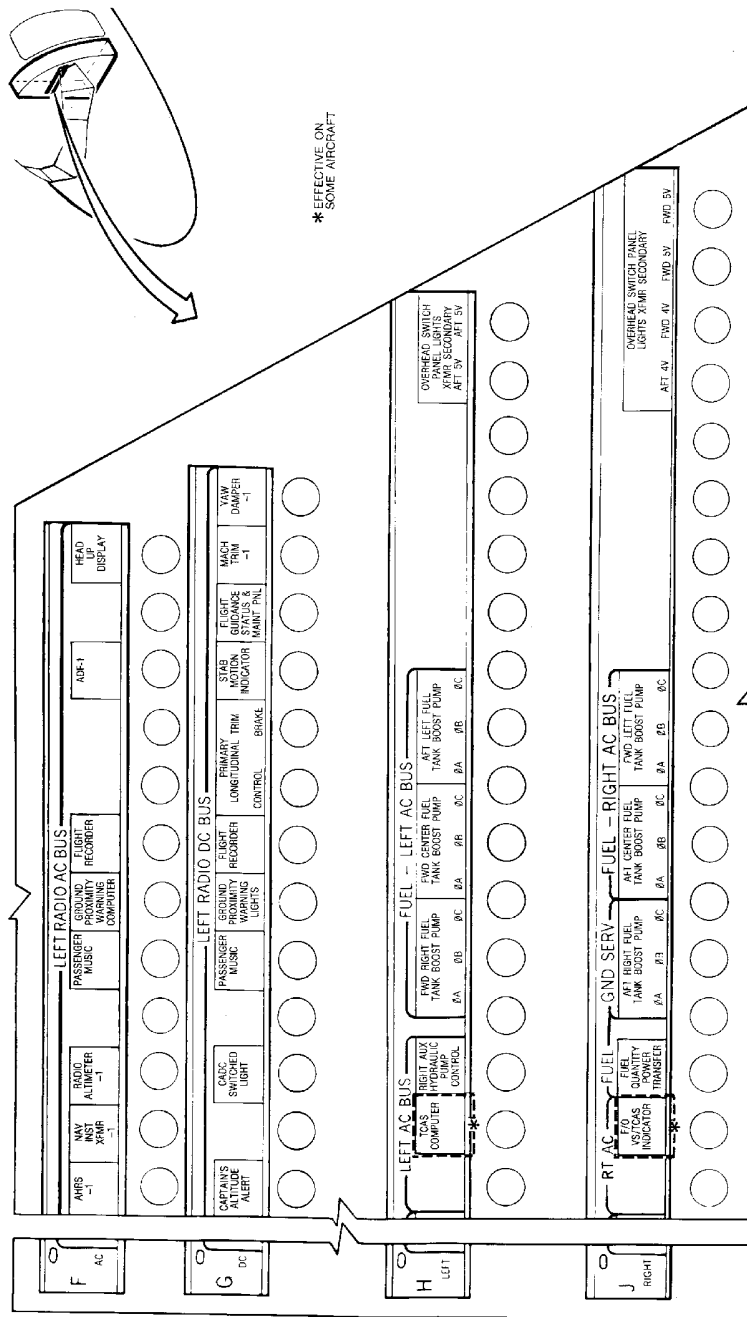
CAG(IGDS)

EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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BBB2-31-1213



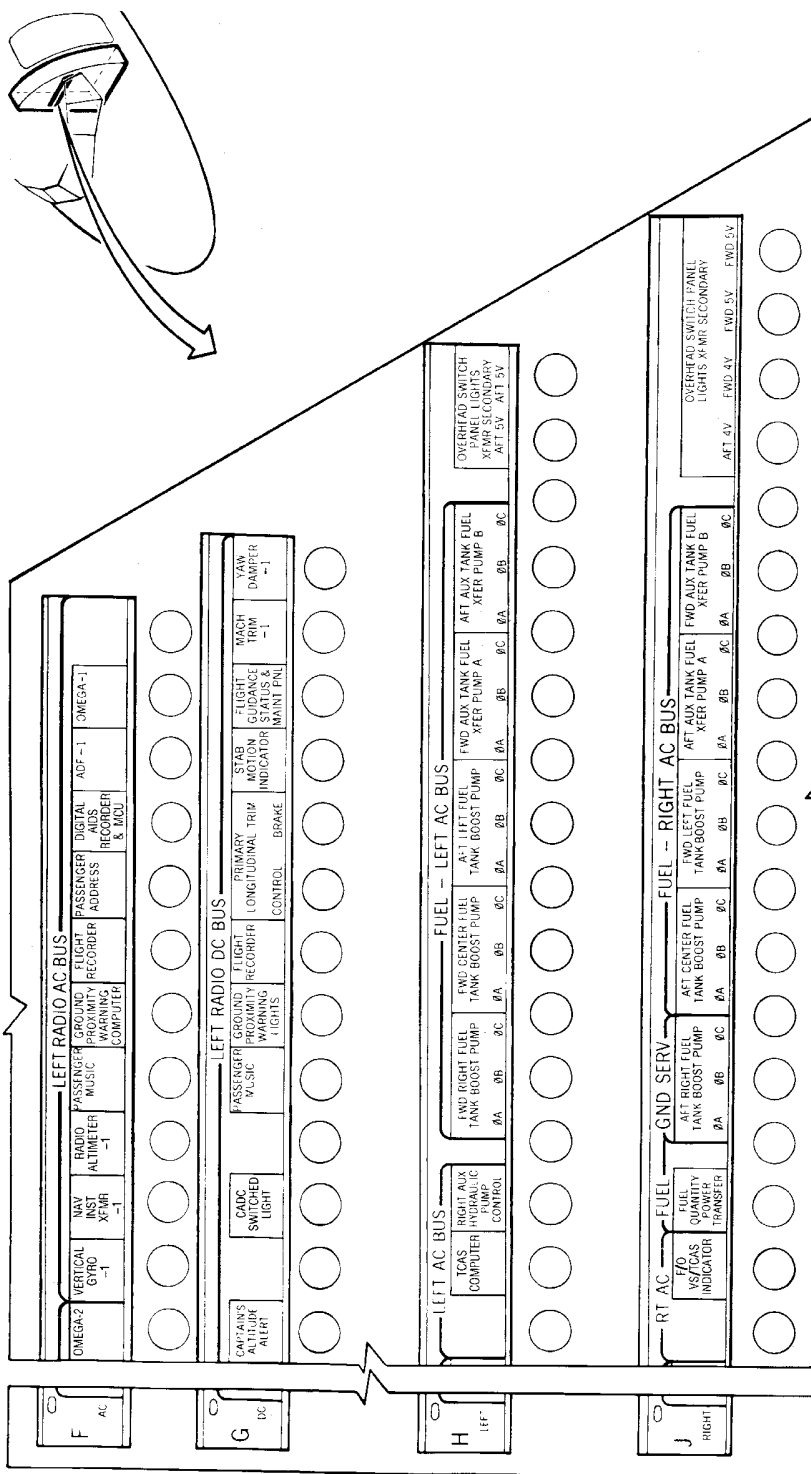
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 10 of 47)

EFFECTIVITY
WJE 407, 408, 411

TP-80MM-WJE

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Upper EPC Circuit Breaker Panel
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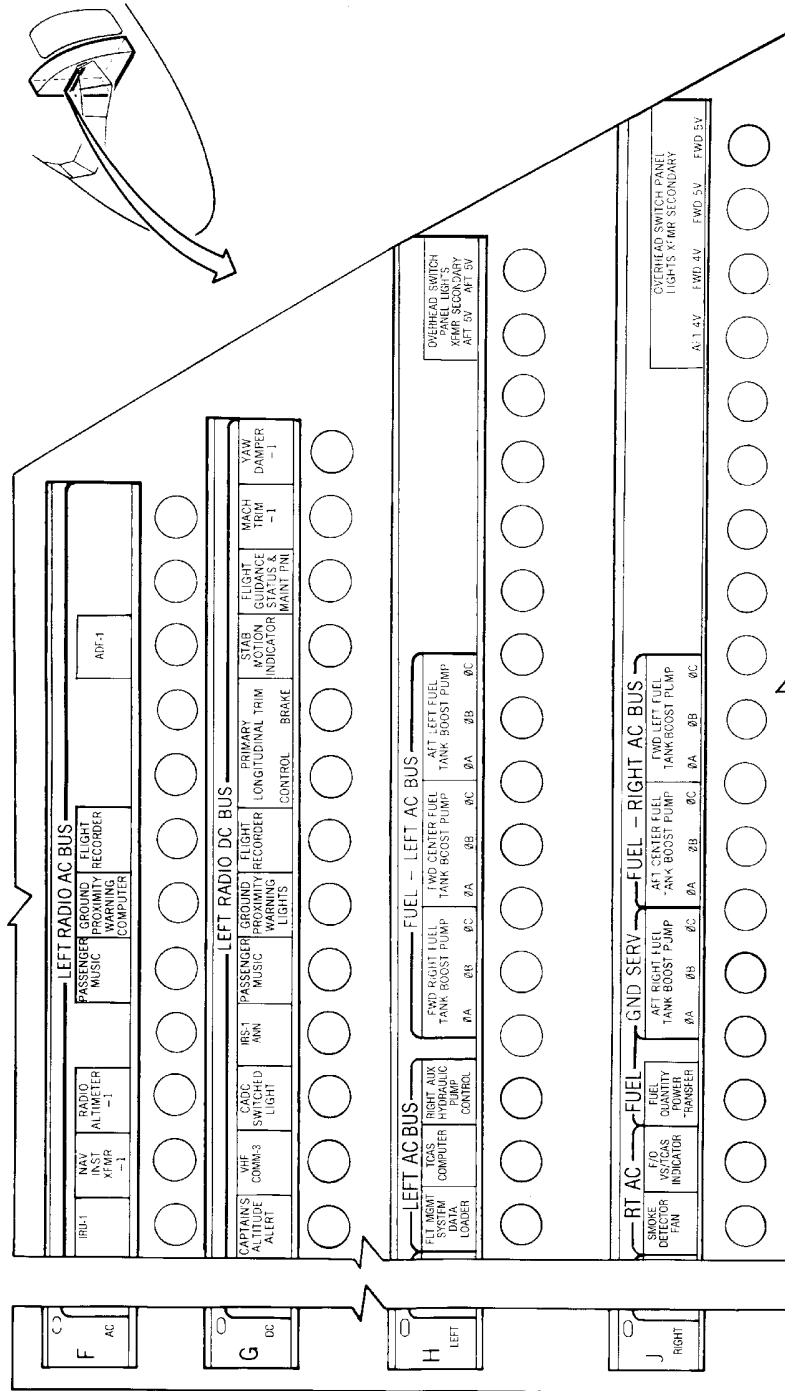
EFFECTIVITY
WJE 410

TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



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**Upper EPC Circuit Breaker Panel
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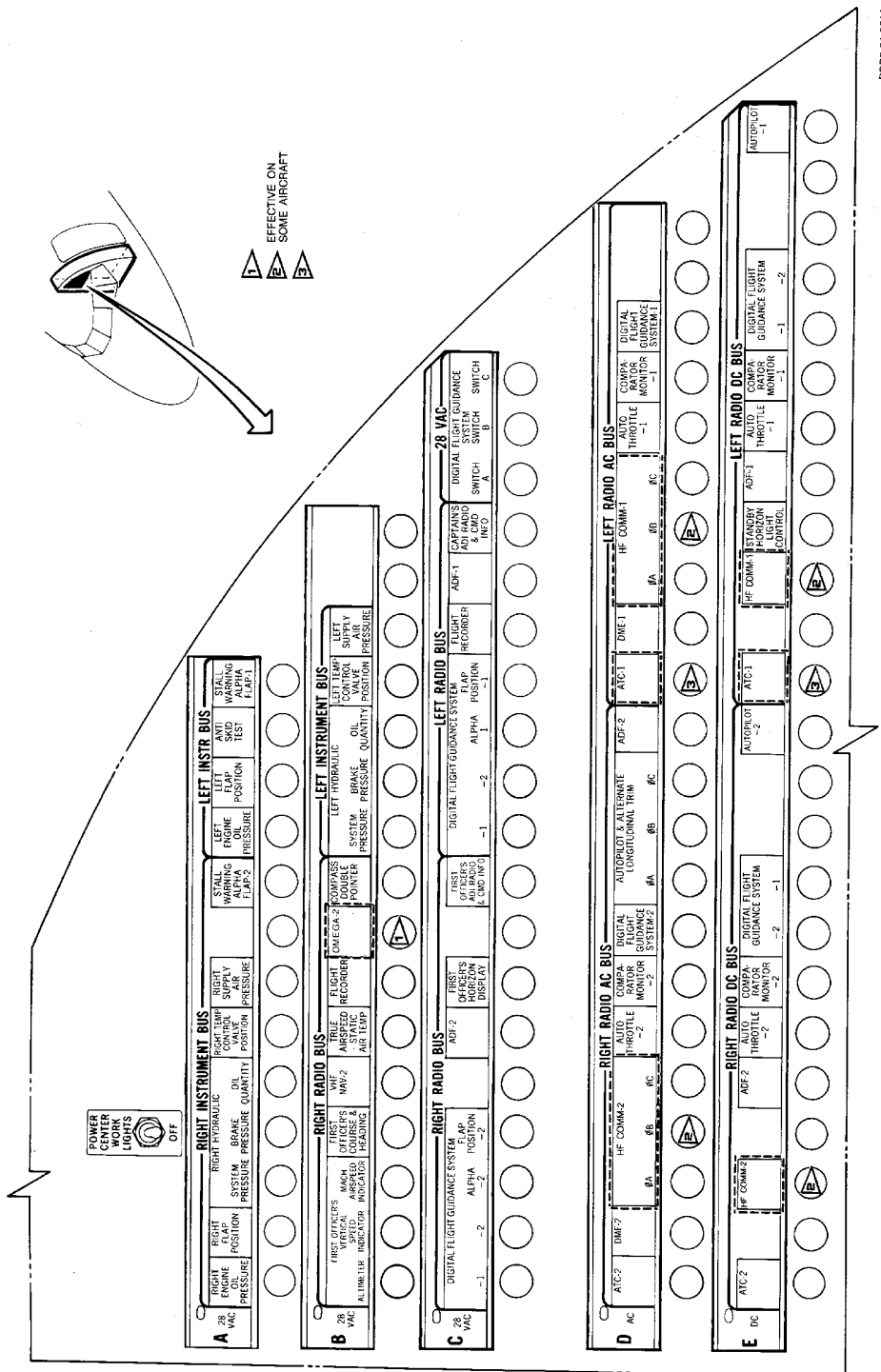
EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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MD-80 AIRCRAFT MAINTENANCE MANUAL



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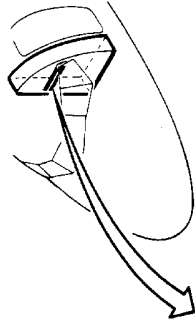
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 13 of 47)

EFFECTIVITY
WJE 873, 874, 892, 893

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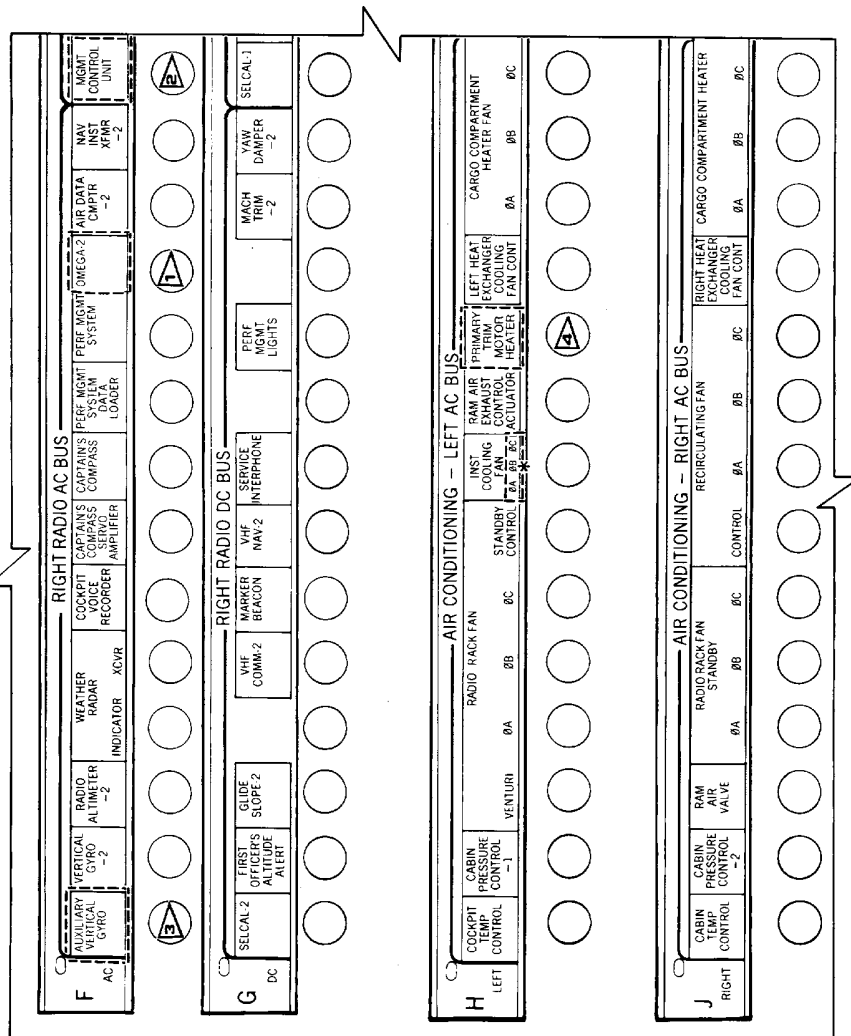
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* EFFECTIVE ON SOME AIRCRAFT

1 2 3 4

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Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 873, 874, 892, 893

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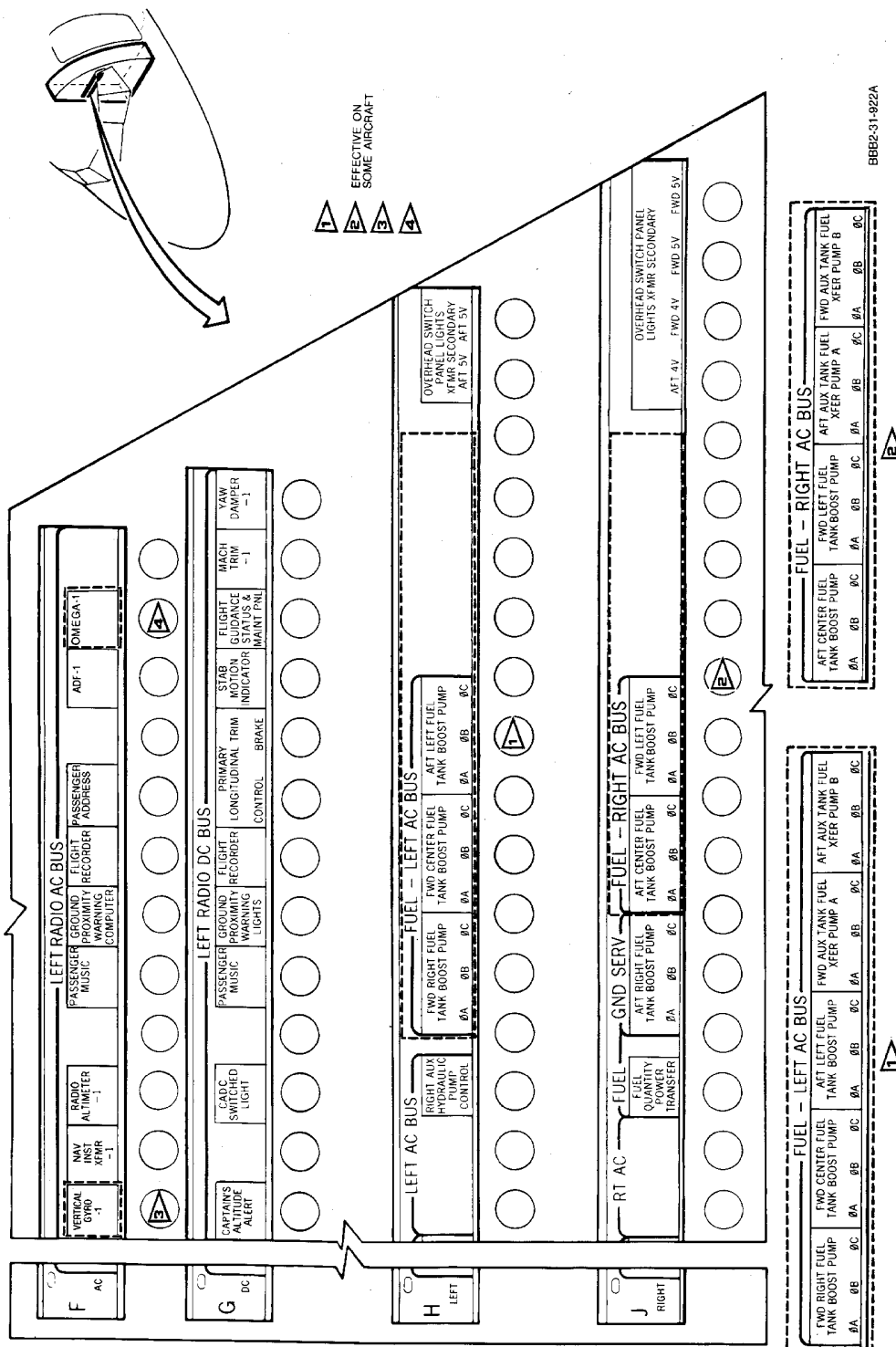
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Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 873, 874, 892, 893

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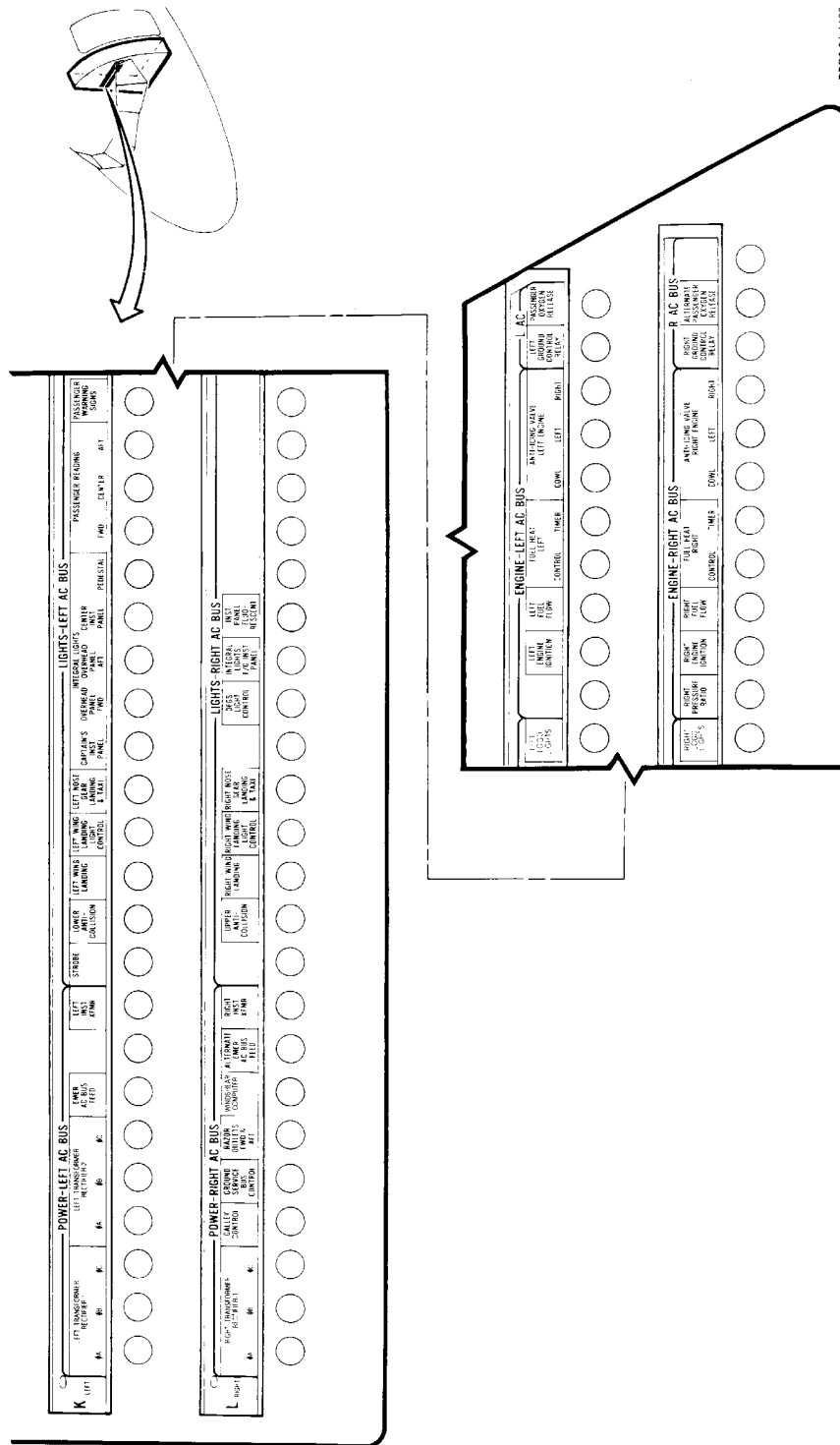
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Upper EPC Circuit Breaker Panel
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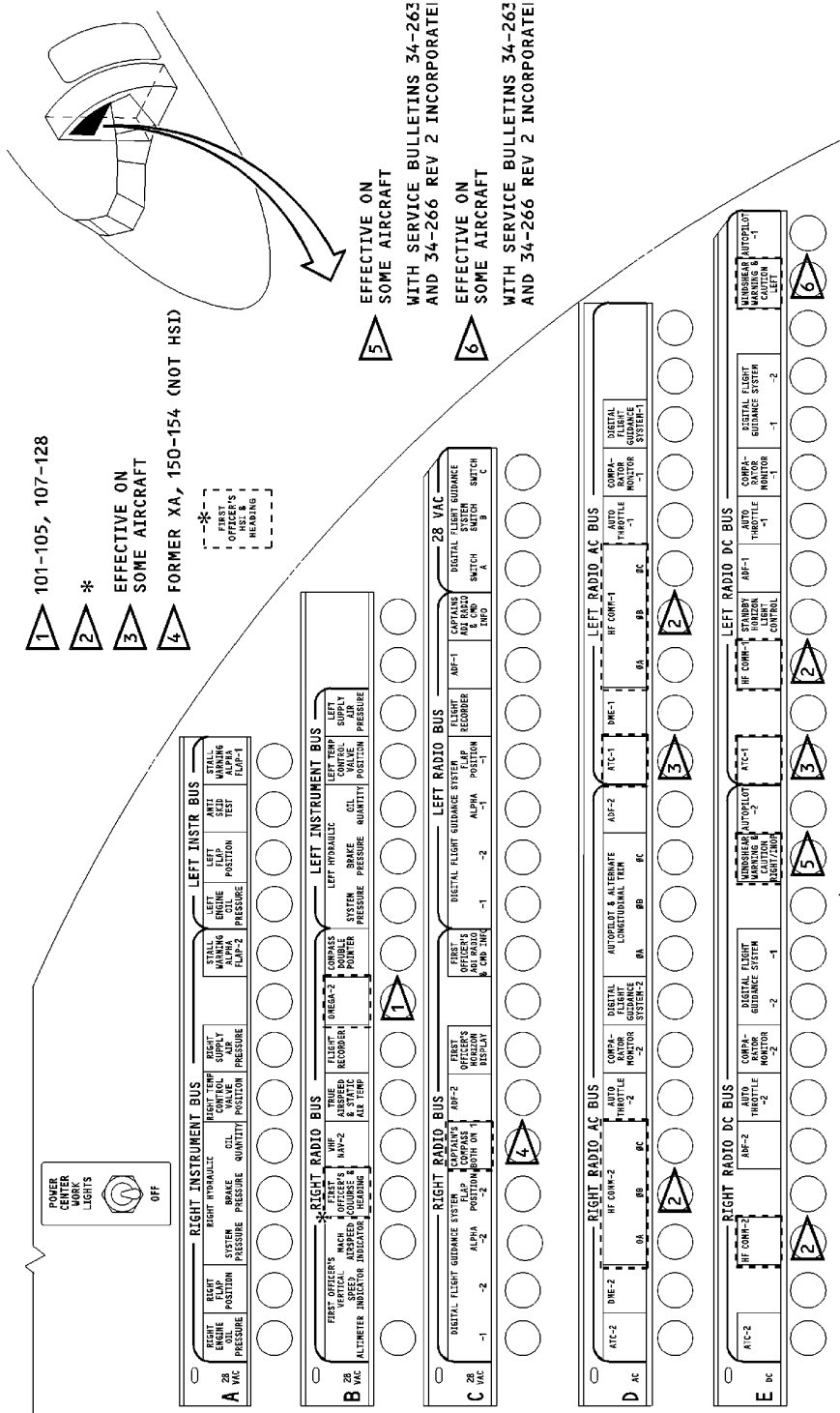
EFFECTIVITY
WJE 410, 875-879

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BBB2-31-1053A

CAG(IGDS)

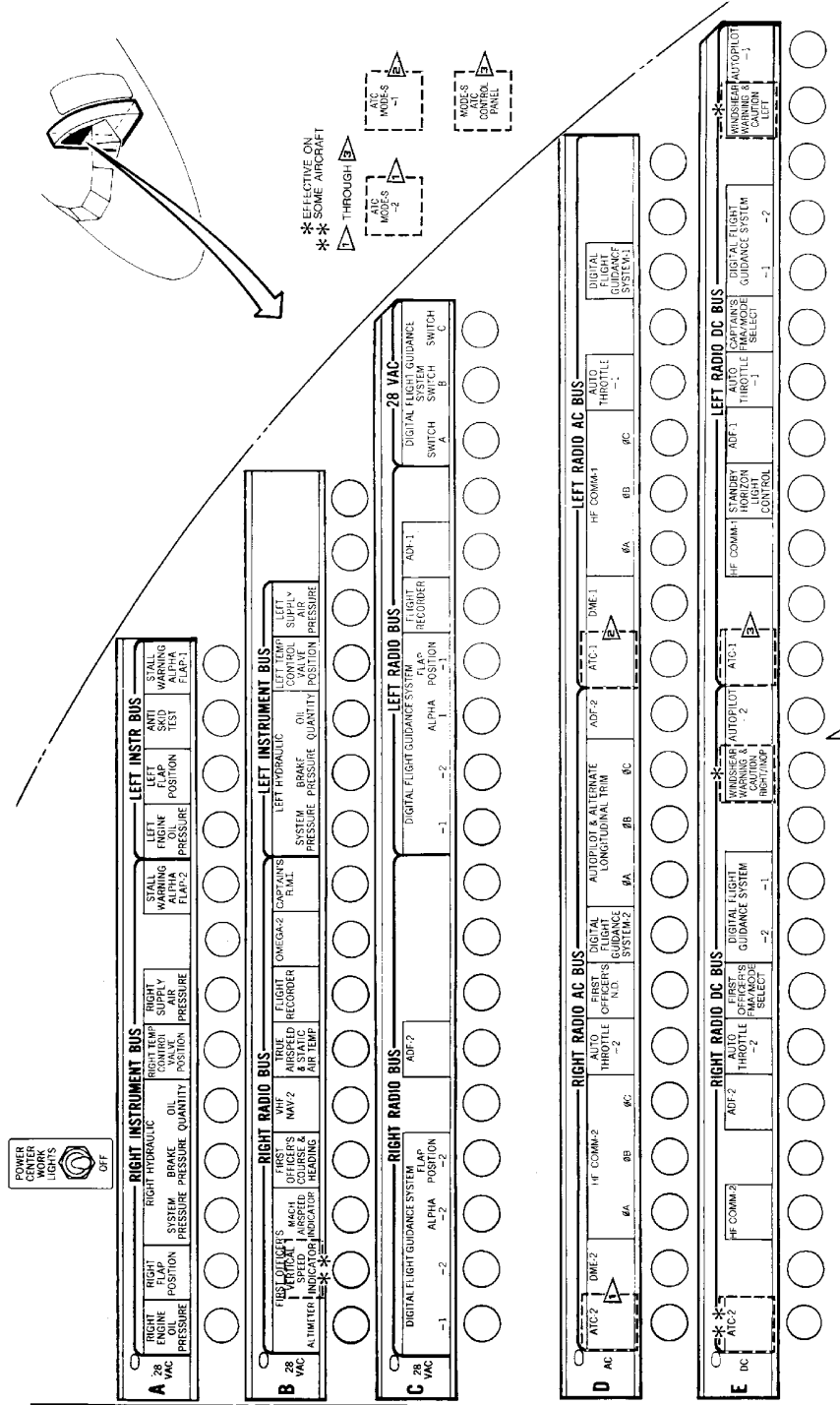
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 18 of 47)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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DBB2-31-1057A

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 19 of 47)

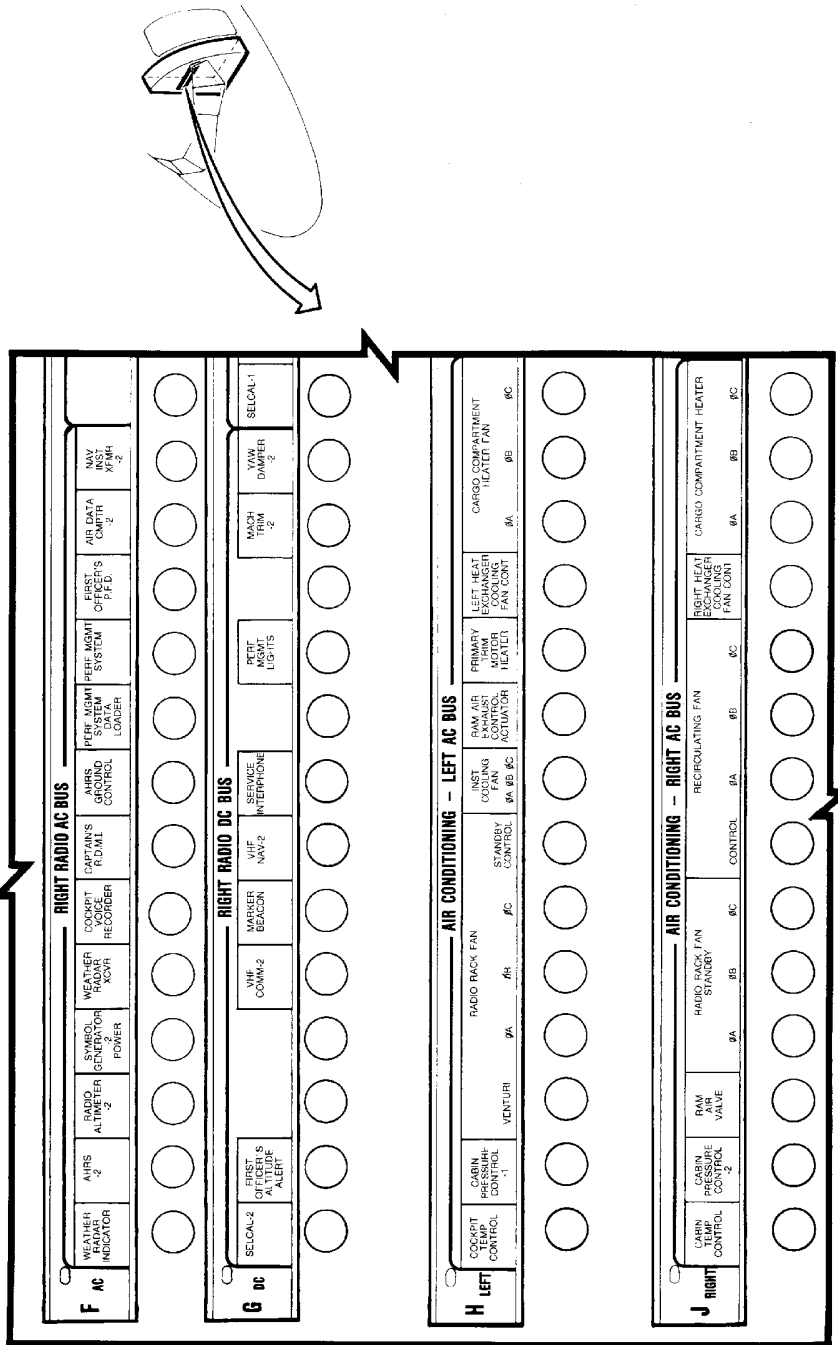
EFFECTIVITY
WJE 406

TP-80MM-WJE

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BB92-31-355B



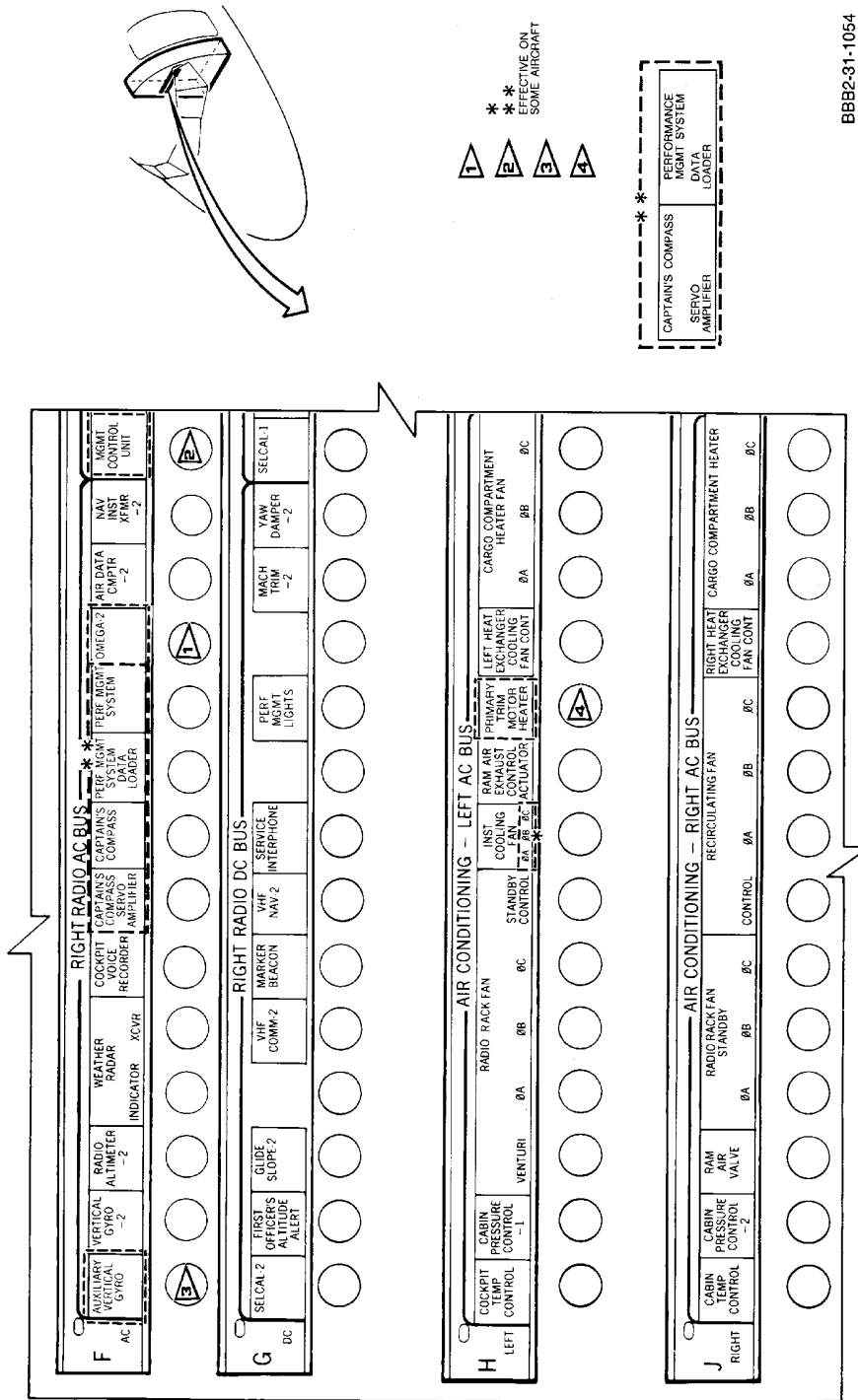
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 21 of 47)

EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

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Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 405, 409, 881, 883, 884

TP-80MM-WJE

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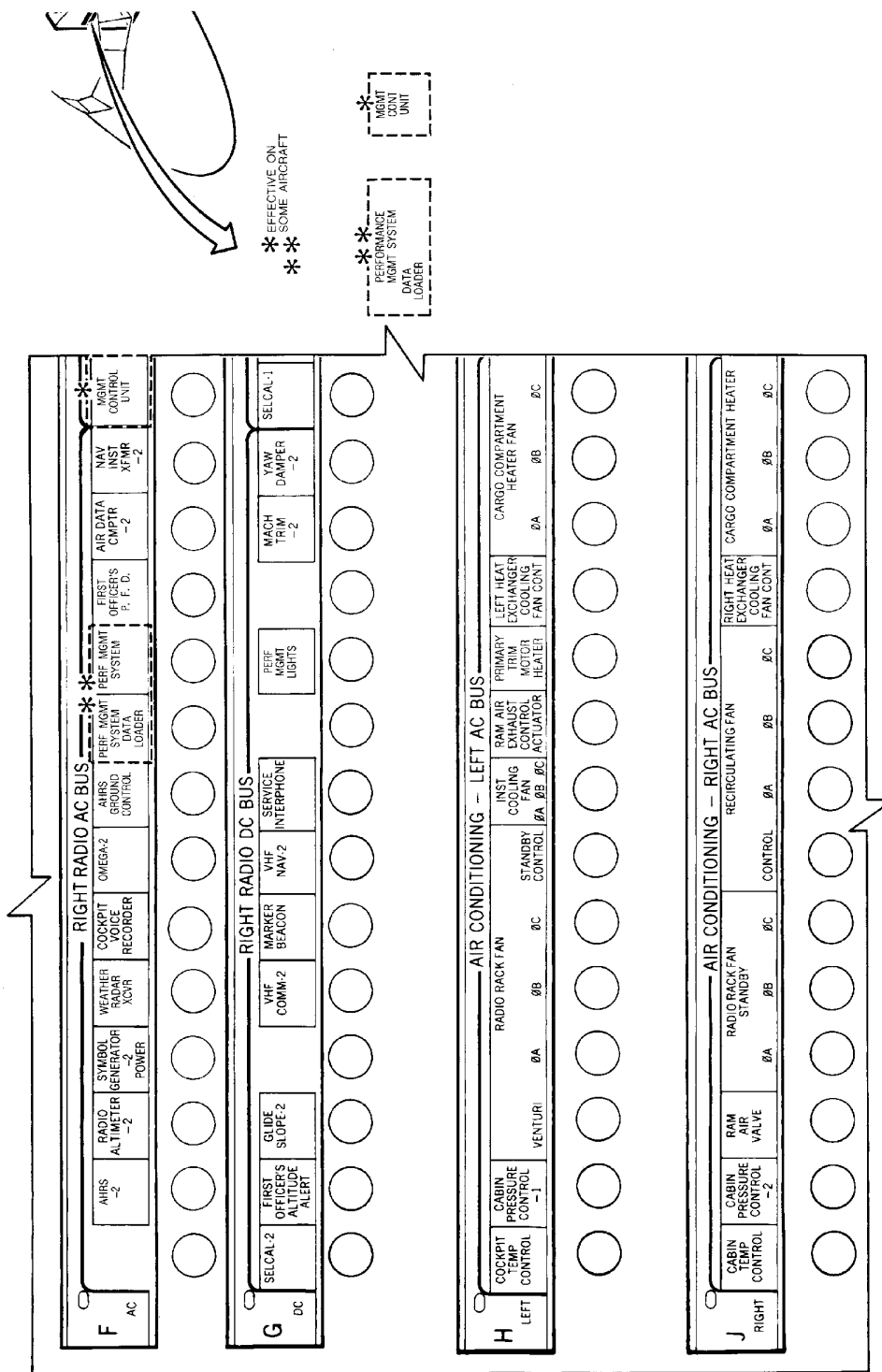
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BBB2-31-1054

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BBB2-31-1058A



Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 23 of 47)

EFFECTIVITY
WJE 406

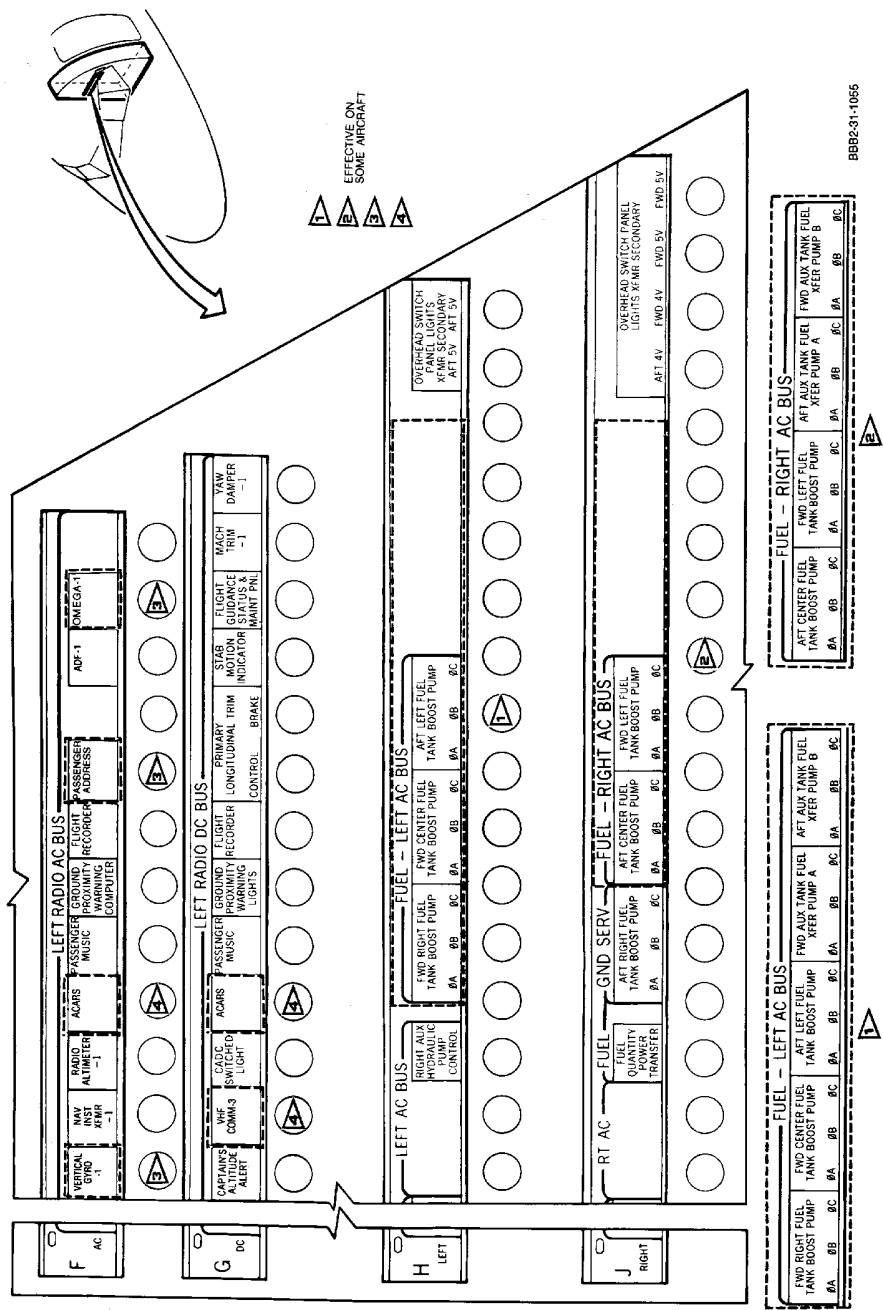
TP-80MM-WJE

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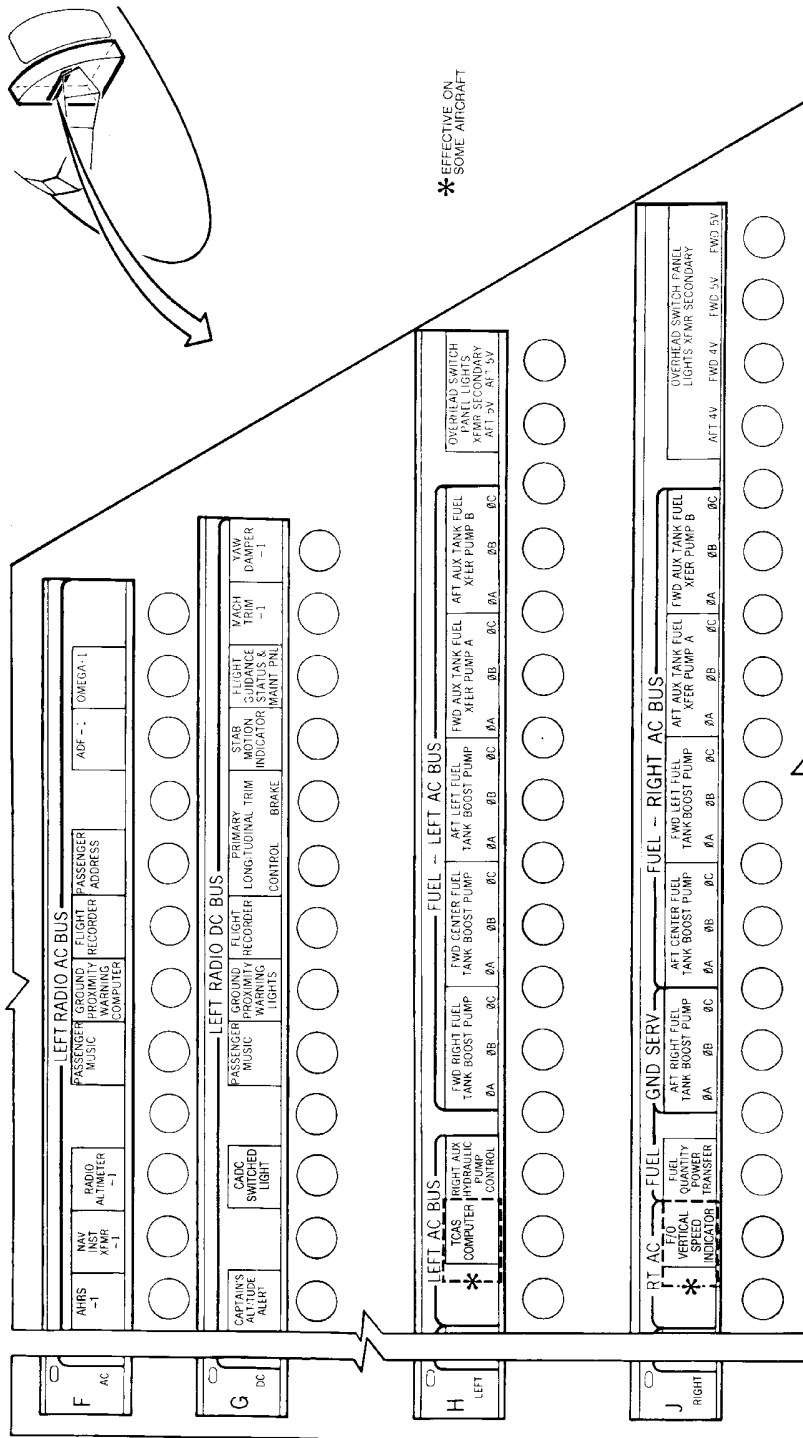
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 24 of 47)**

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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BBB2-31-1059A

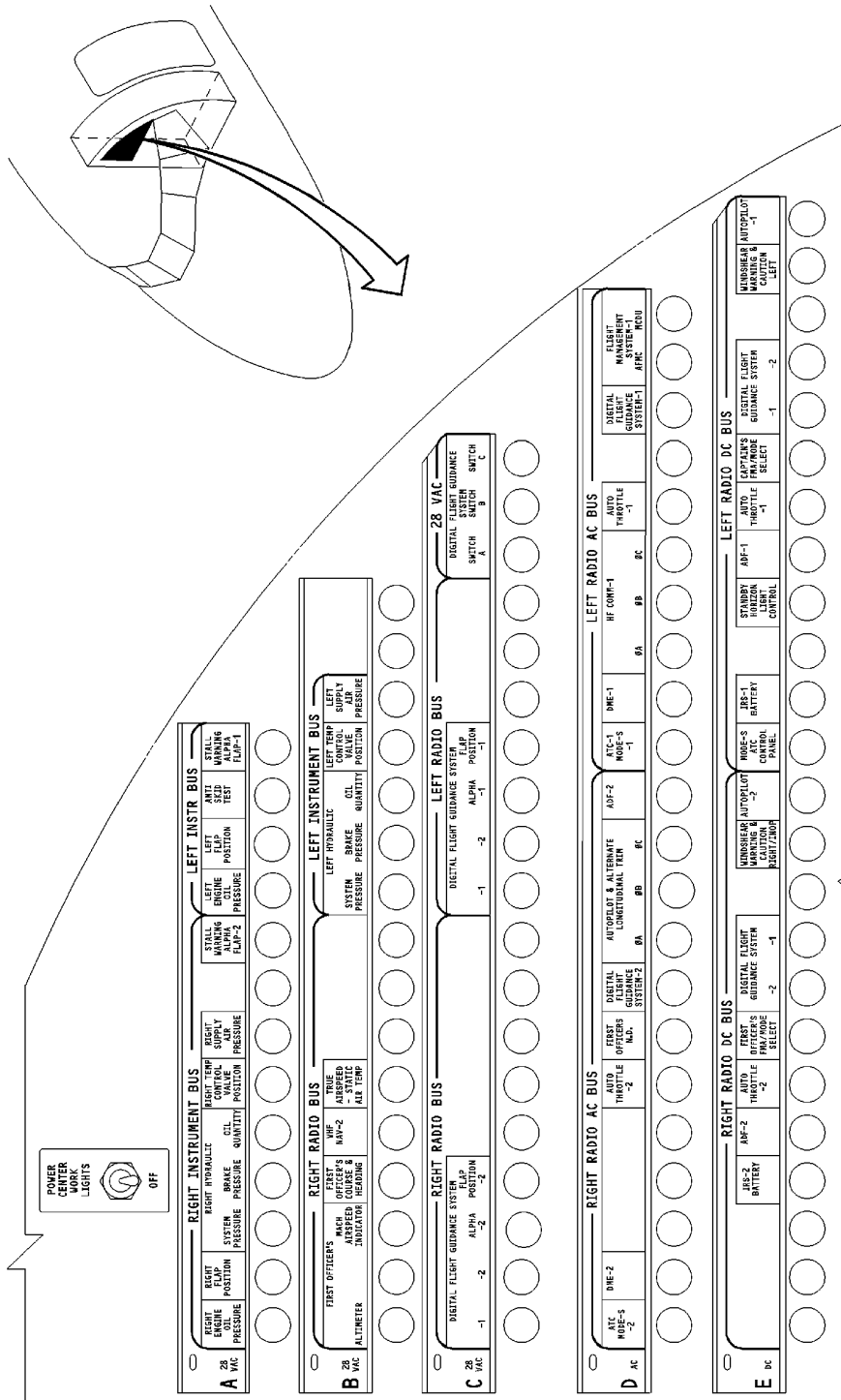
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 25 of 47)**

EFFECTIVITY
WJE 406

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Upper EPC Circuit Breaker Panel
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BBB2-31-1479

CAG(IGDS)

EFFECTIVITY
WJE 877

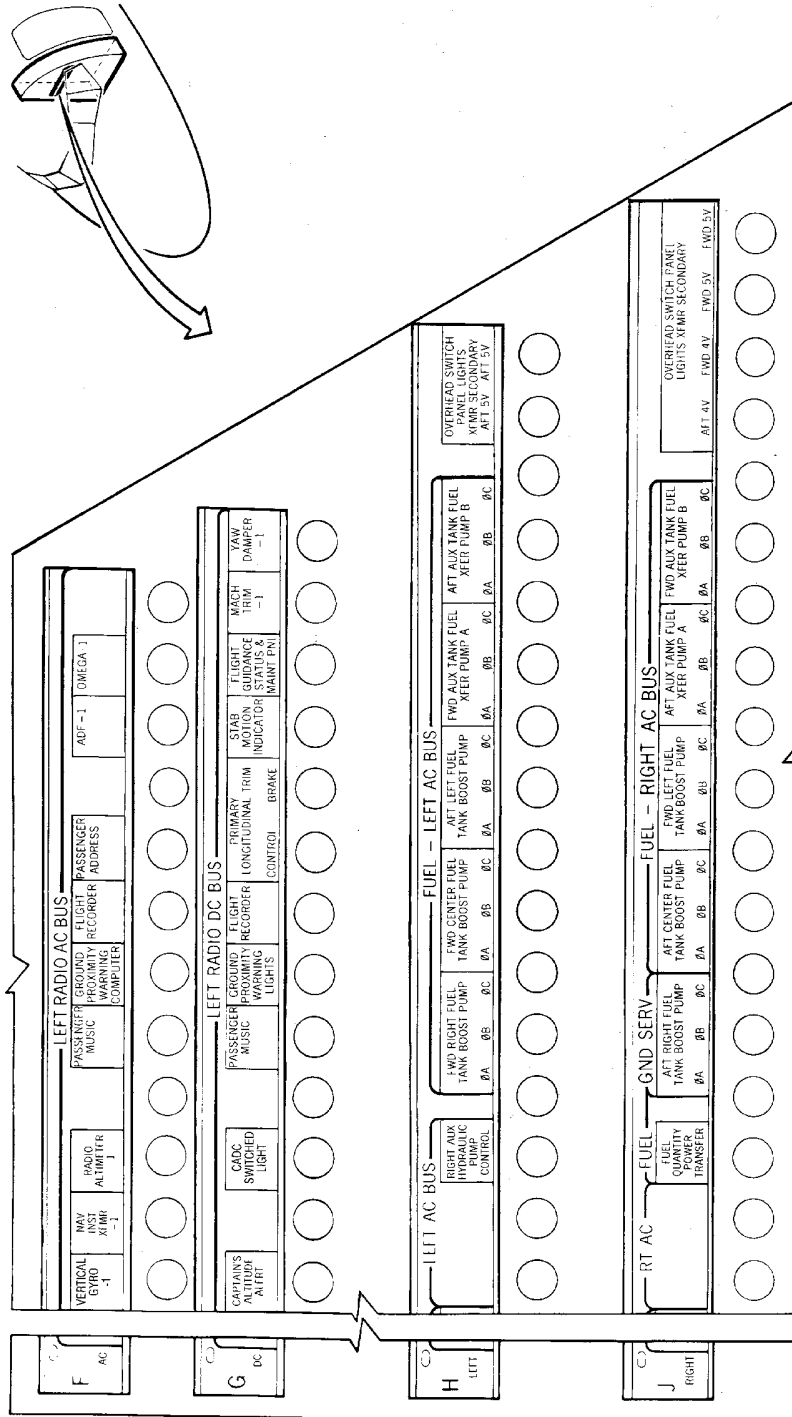
TP-80MM-WJE

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BBE2-31-759A



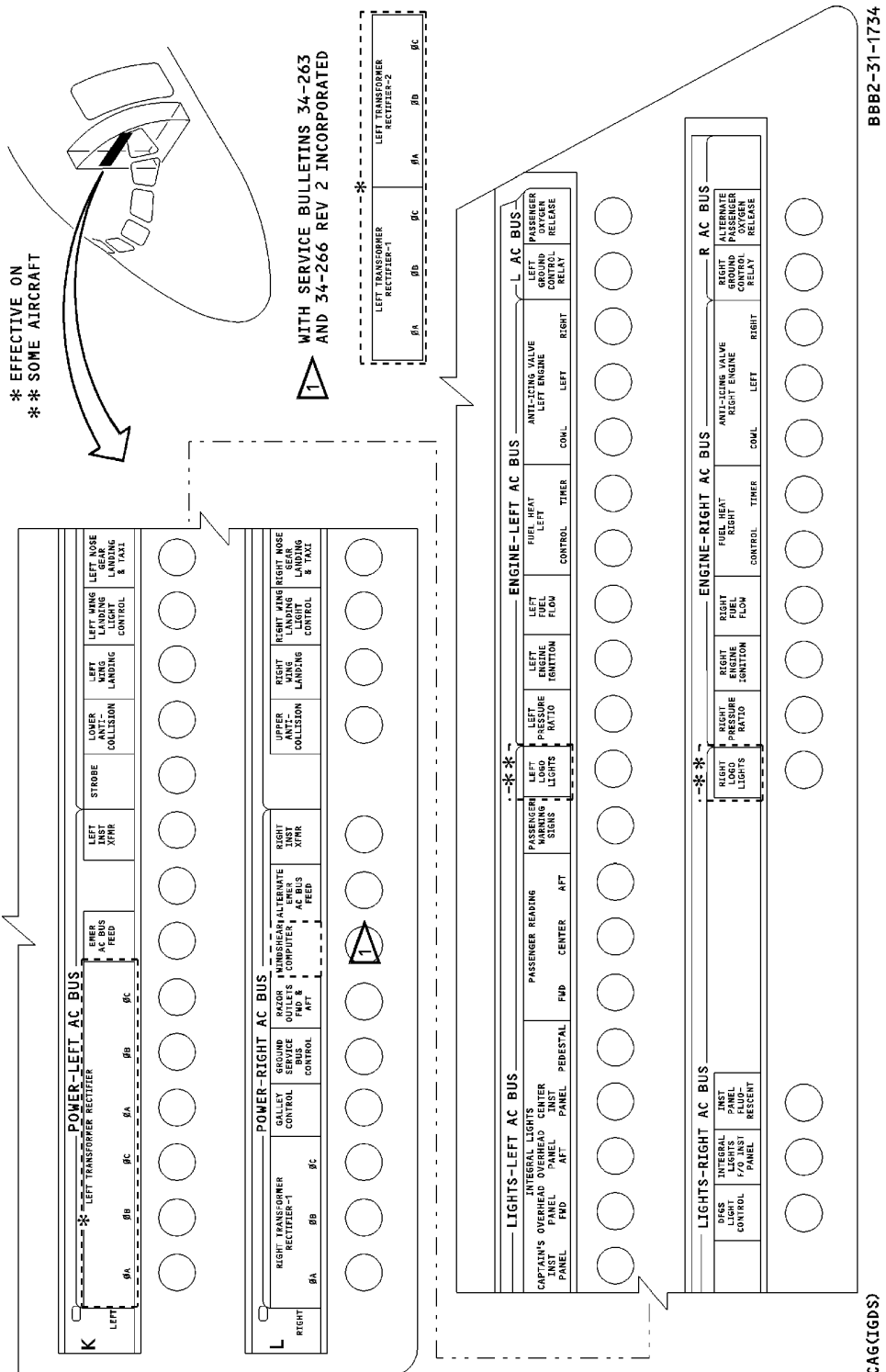
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 27 of 47)**

EFFECTIVITY
WJE 401-404, 412, 414

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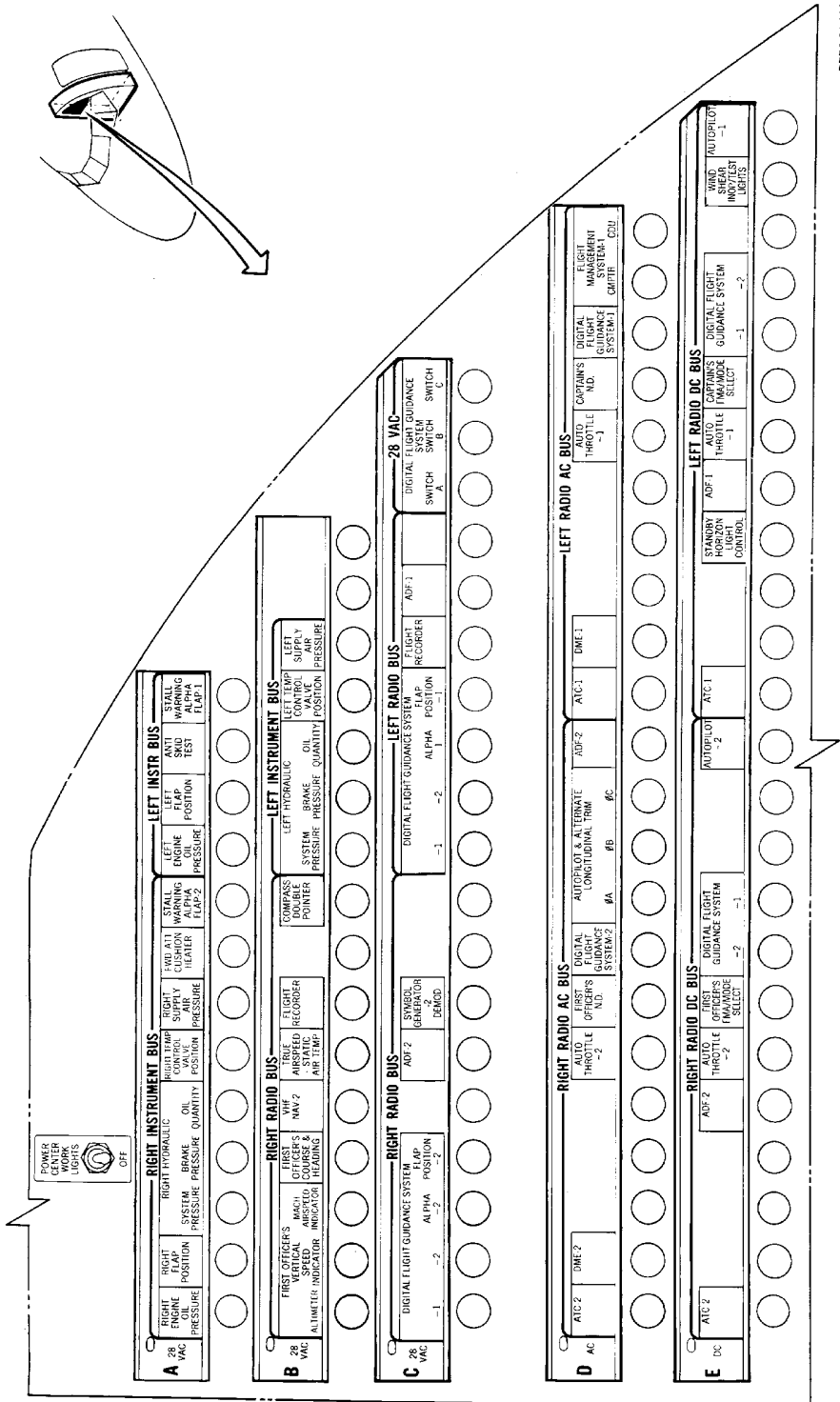


Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 28 of 47)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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BBB2-31-906

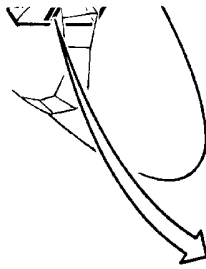
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 29 of 47)

EFFECTIVITY
WJE 401-404, 412, 414

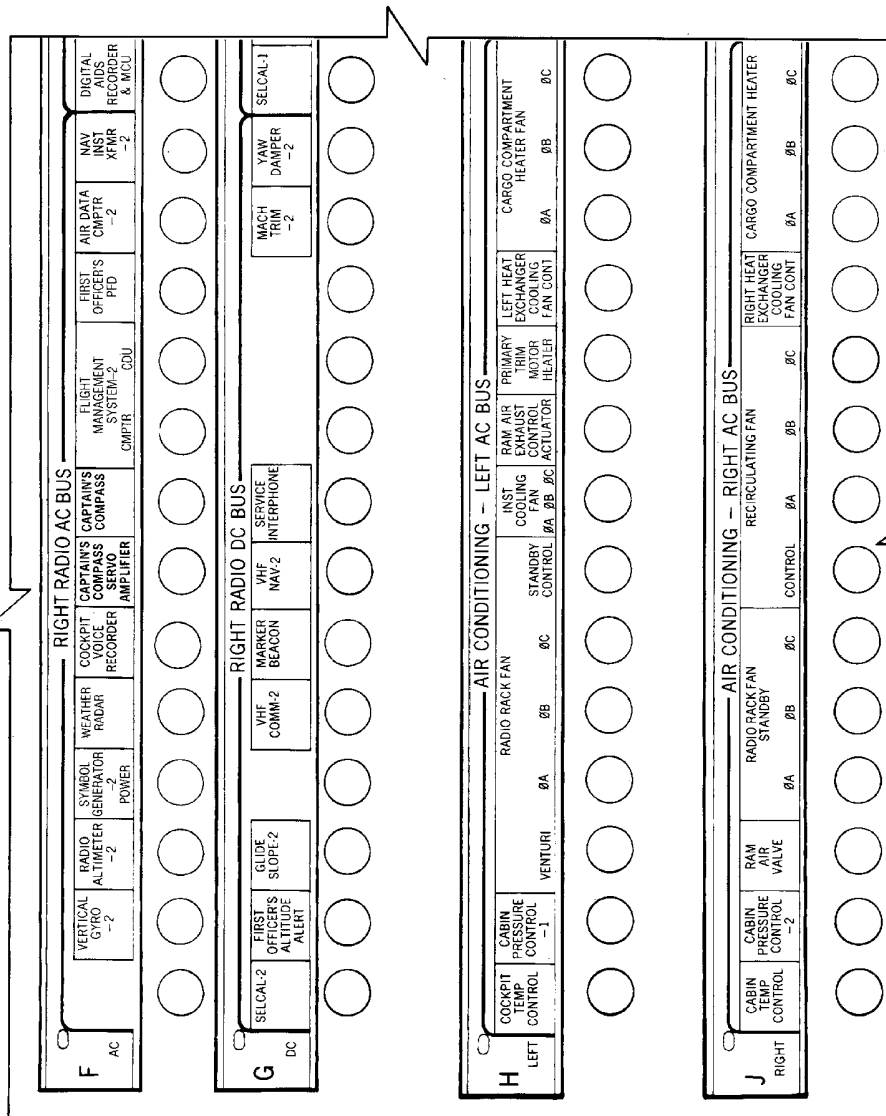
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TP-80MM-WJE

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BDB2-31-907



Upper EPC Circuit Breaker Panel
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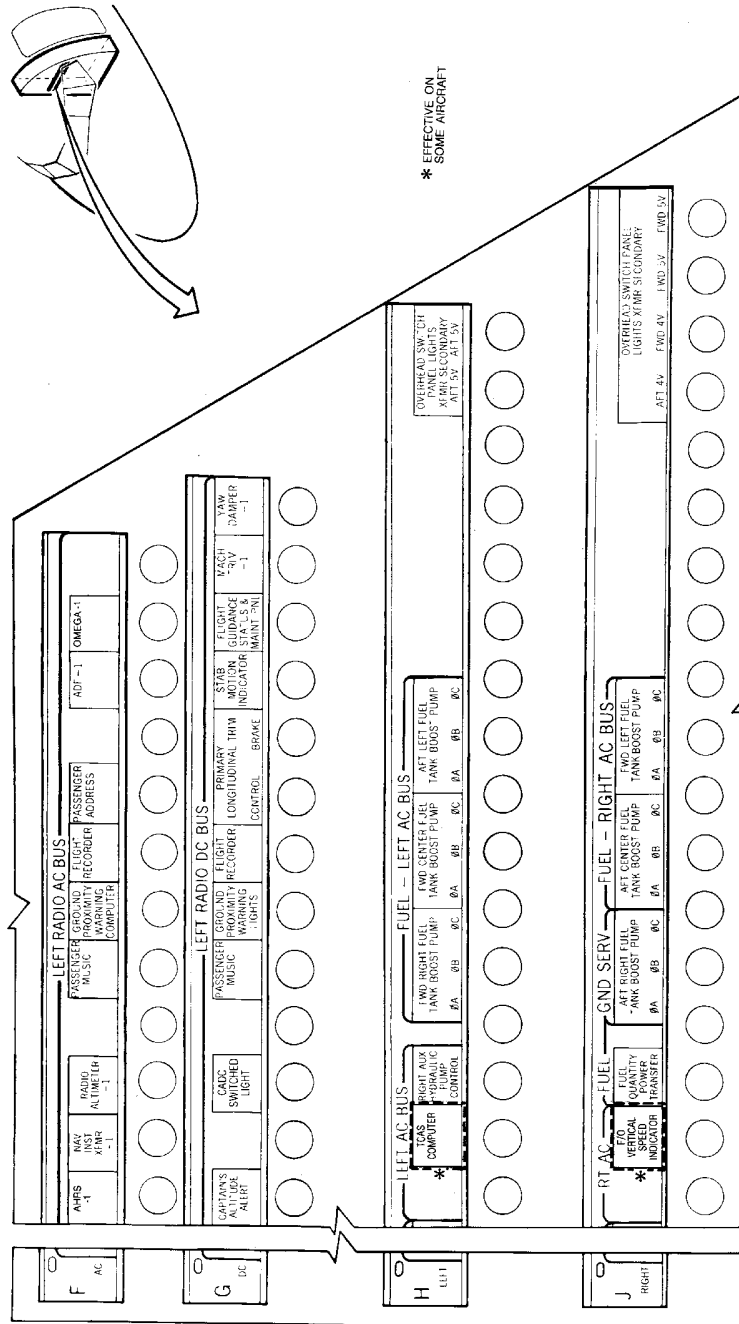
EFFECTIVITY
WJE 401-404, 412, 414

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BBB2-31-1028A

Upper EPC Circuit Breaker Panel
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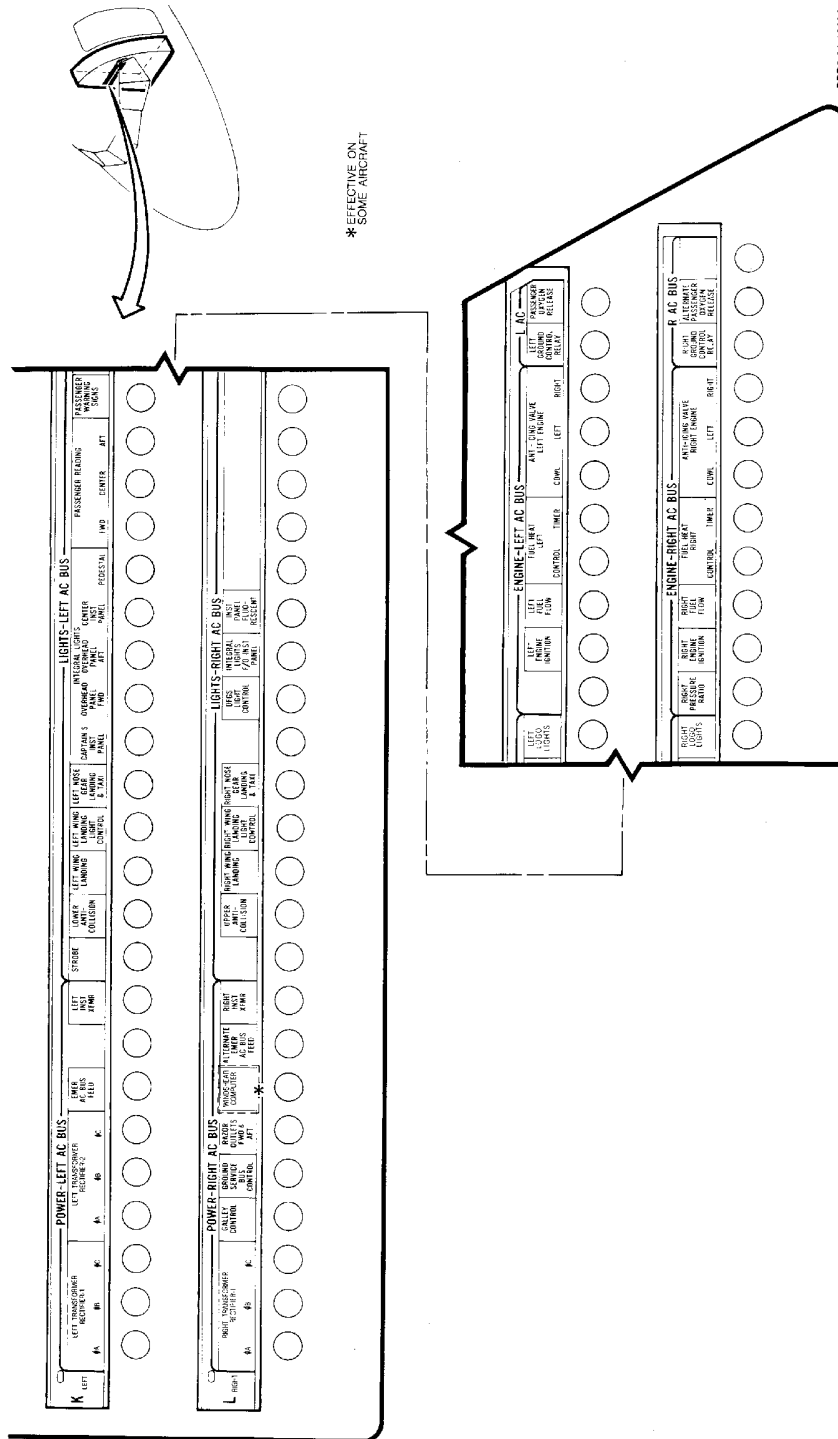
EFFECTIVITY
WJE 886, 887

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Upper EPC Circuit Breaker Panel
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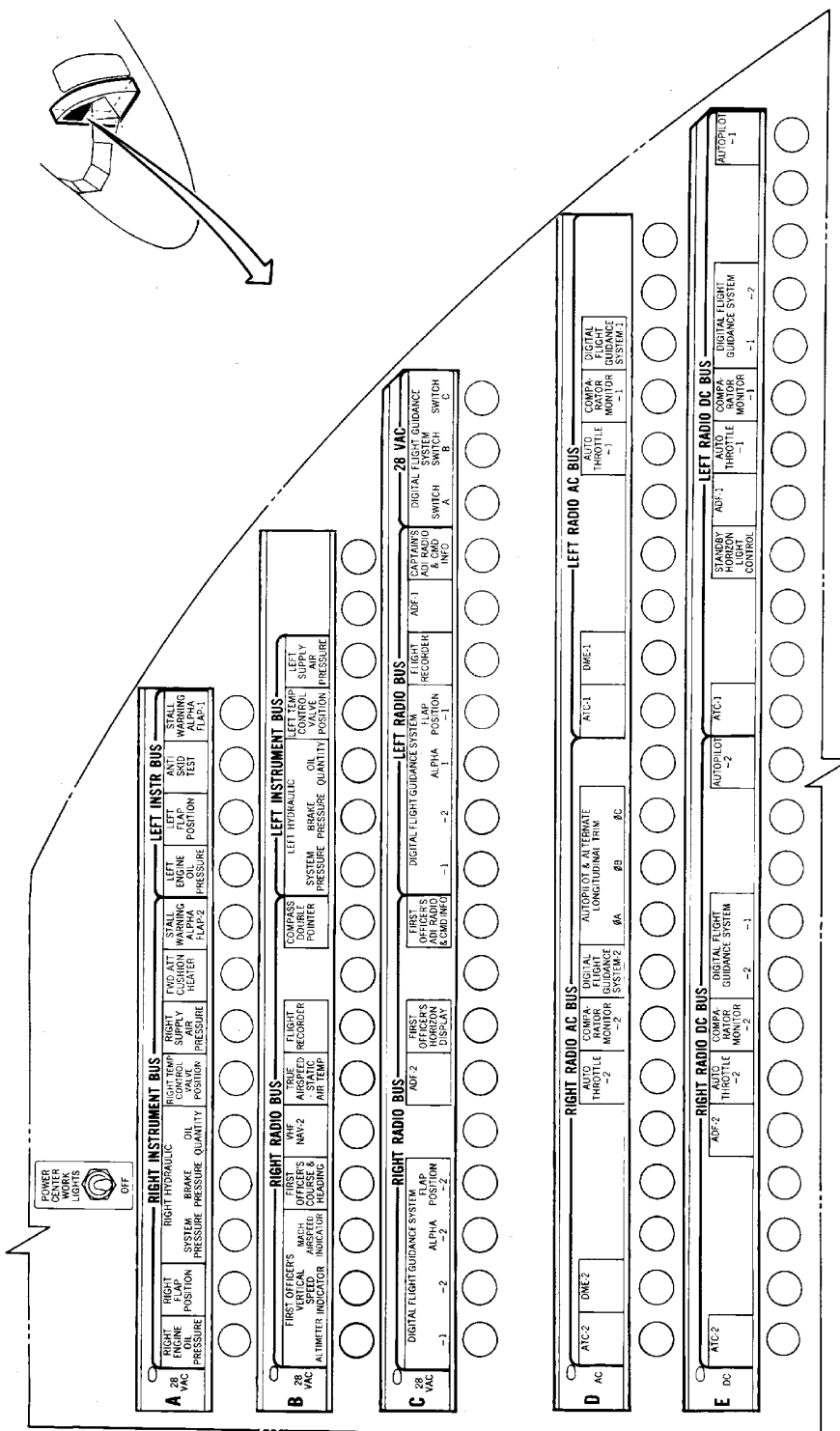
EFFECTIVITY
WJE 886, 887

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BBB2-31-672A

Upper EPC Circuit Breaker Panel
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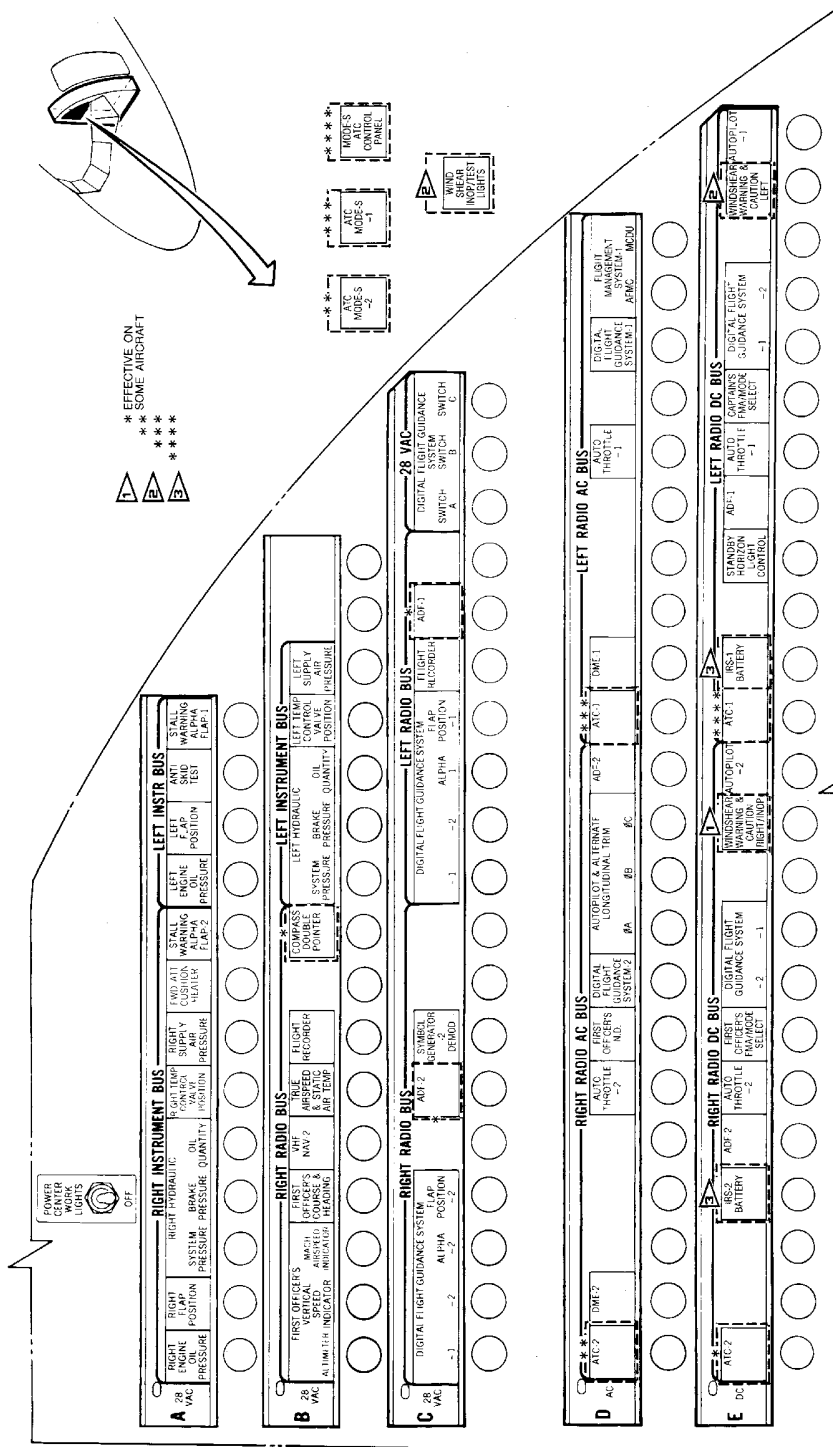
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

TP-80MM-WJE

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BBB2-31-124A

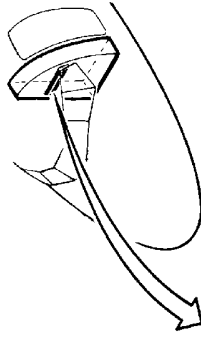
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 34 of 47)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

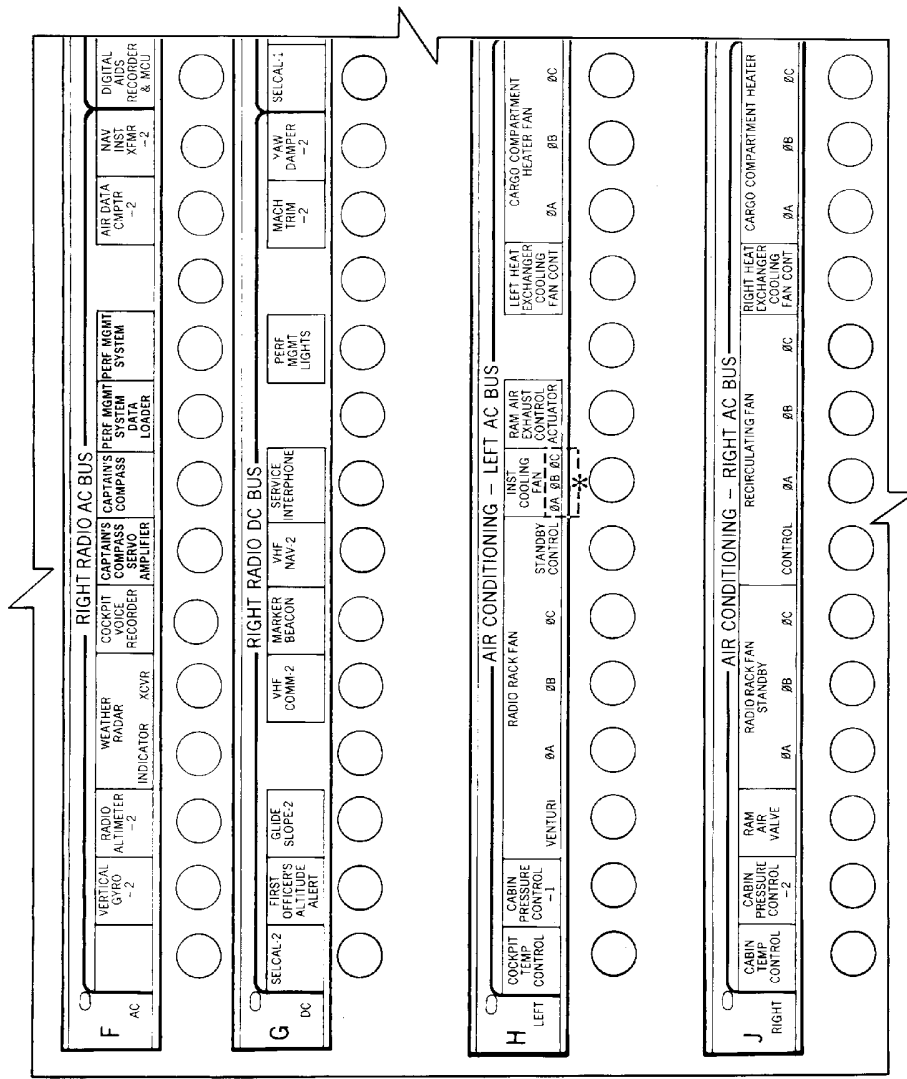
31-15-01
Config 1
Page 35
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BBB2-31-473A



* EFFECTIVE ON SOME AIRCRAFT

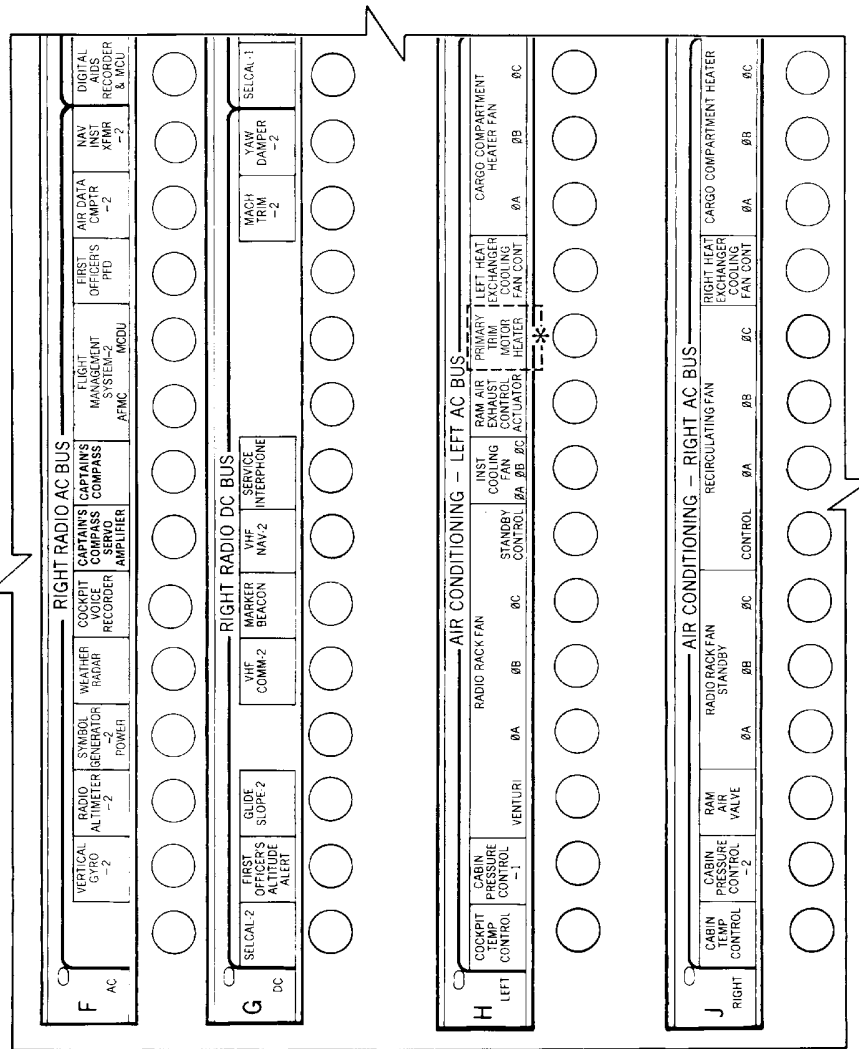
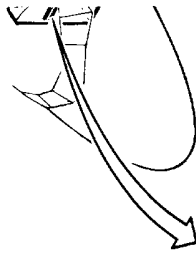
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 35 of 47)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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* EFFECTIVE ON SOME AIRCRAFT

BB92-31-1125

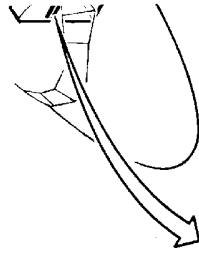
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 36 of 47)**

EFFECTIVITY
WJE 415, 418, 863, 864, 866

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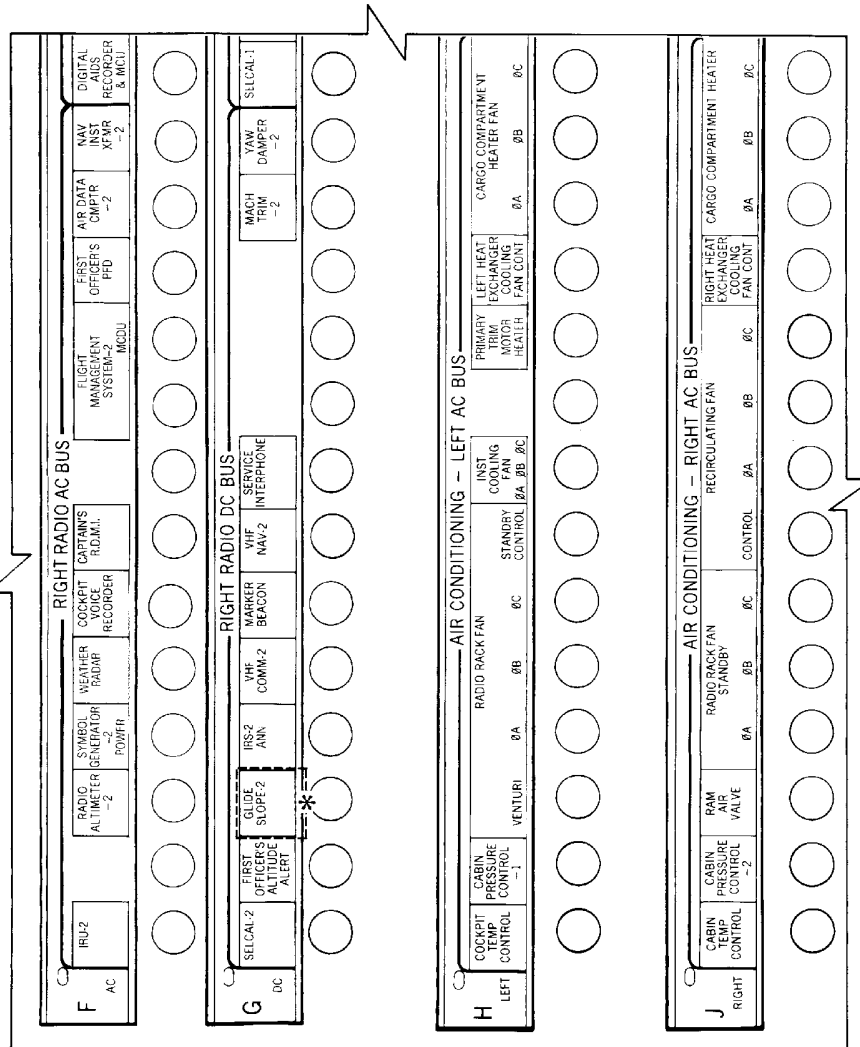
TP-80MM-WJE

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* EFFECTIVE ON SOME AIRCRAFT

BBB2-31-1126A



Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 37 of 47)

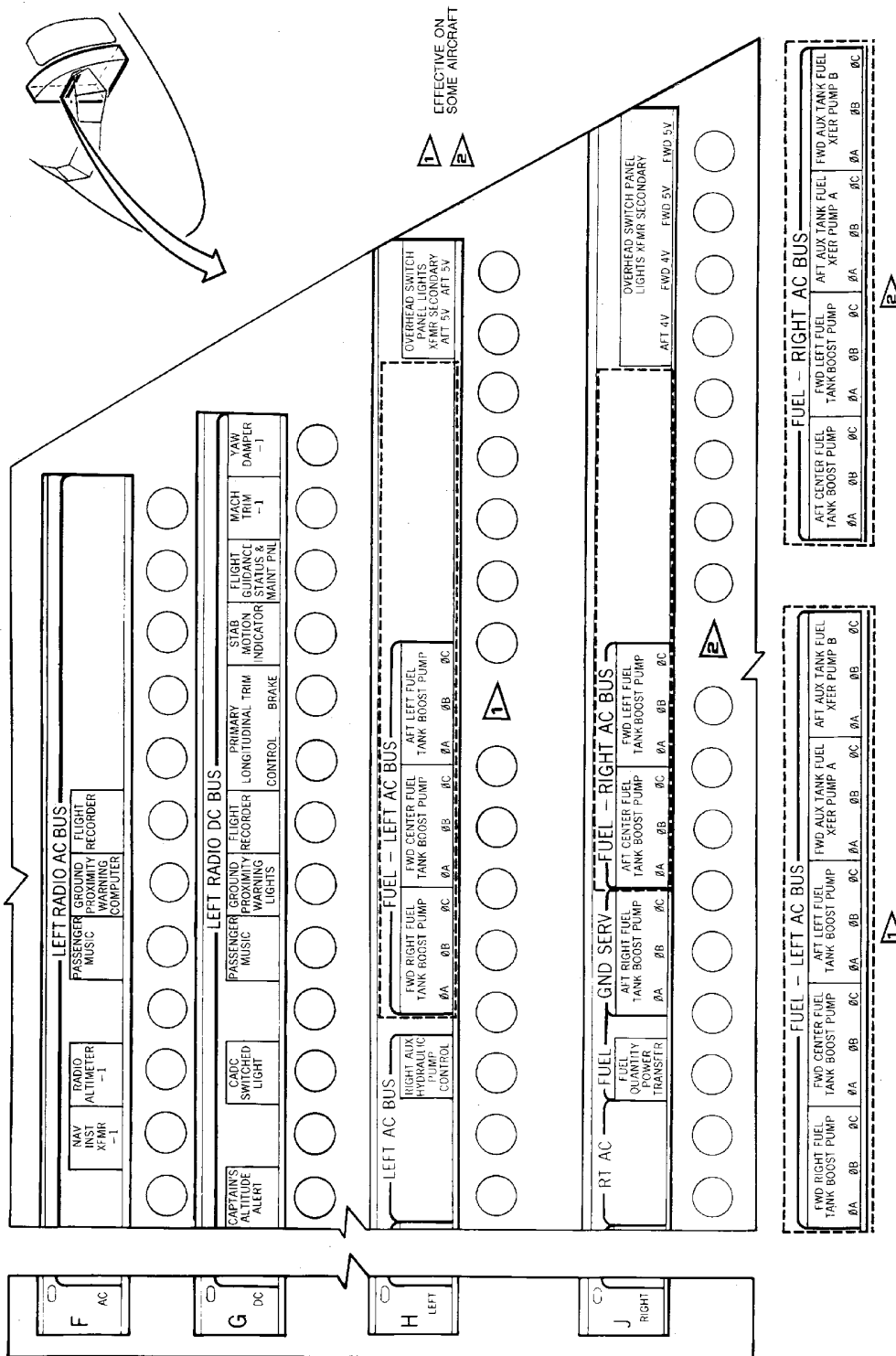
EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

TP-80MM-WJE

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BBB2-31-674A

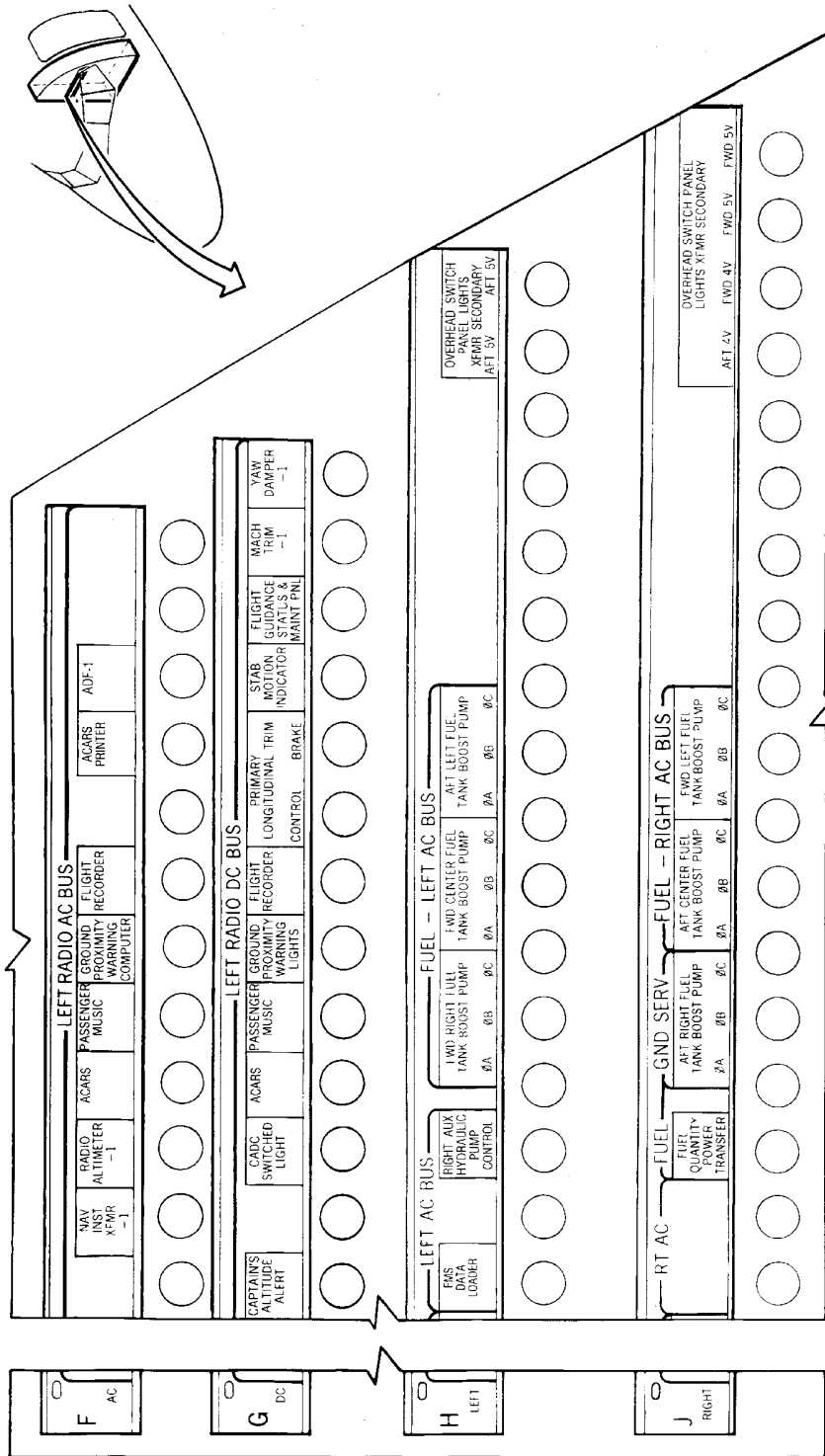
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 38 of 47)**

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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Config 1
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BBB2-31-908A

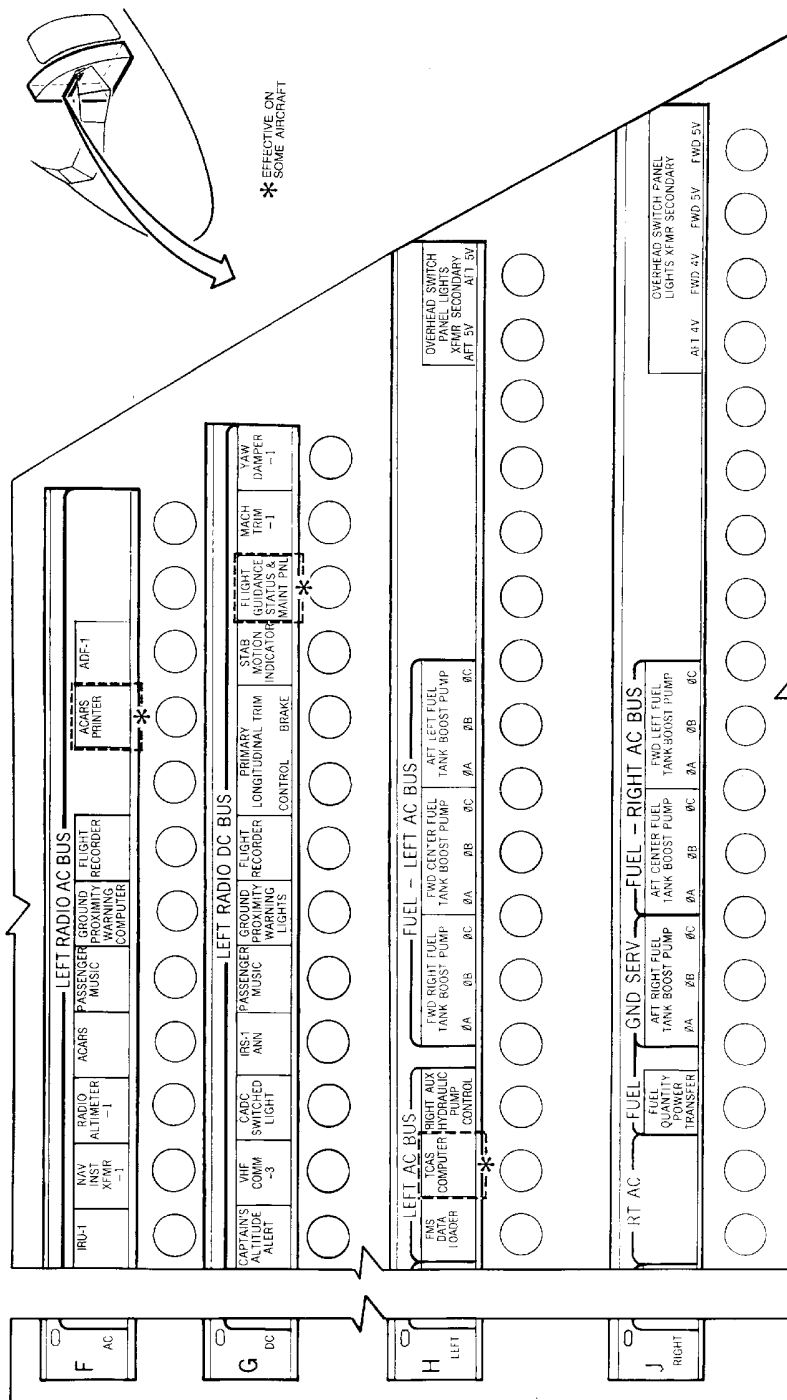
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 39 of 47)**

EFFECTIVITY
WJE 415, 418, 863, 864, 866

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BBB2-31-1127A

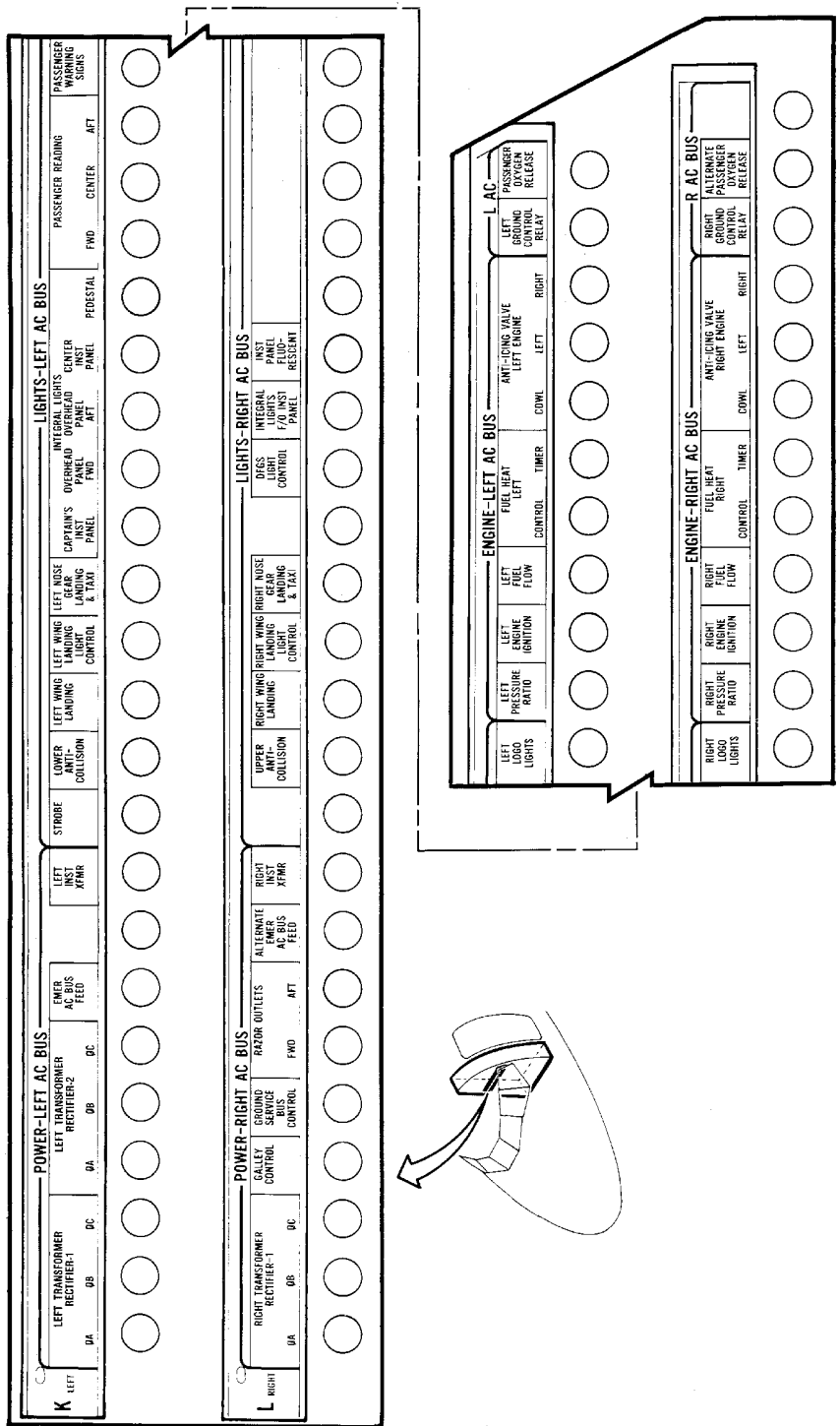
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 40 of 47)**

EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

31-15-01
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BBB2-31-909

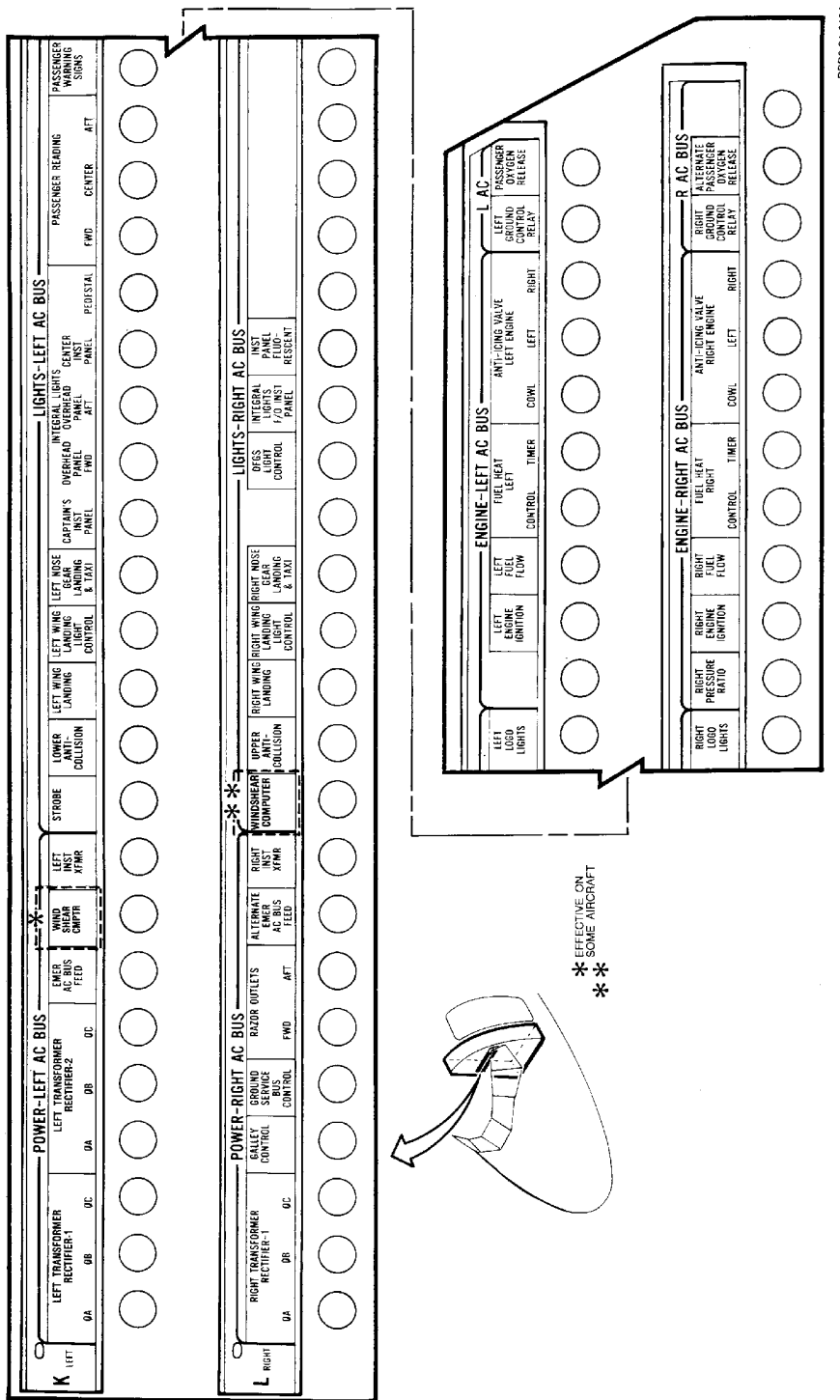
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 41 of 47)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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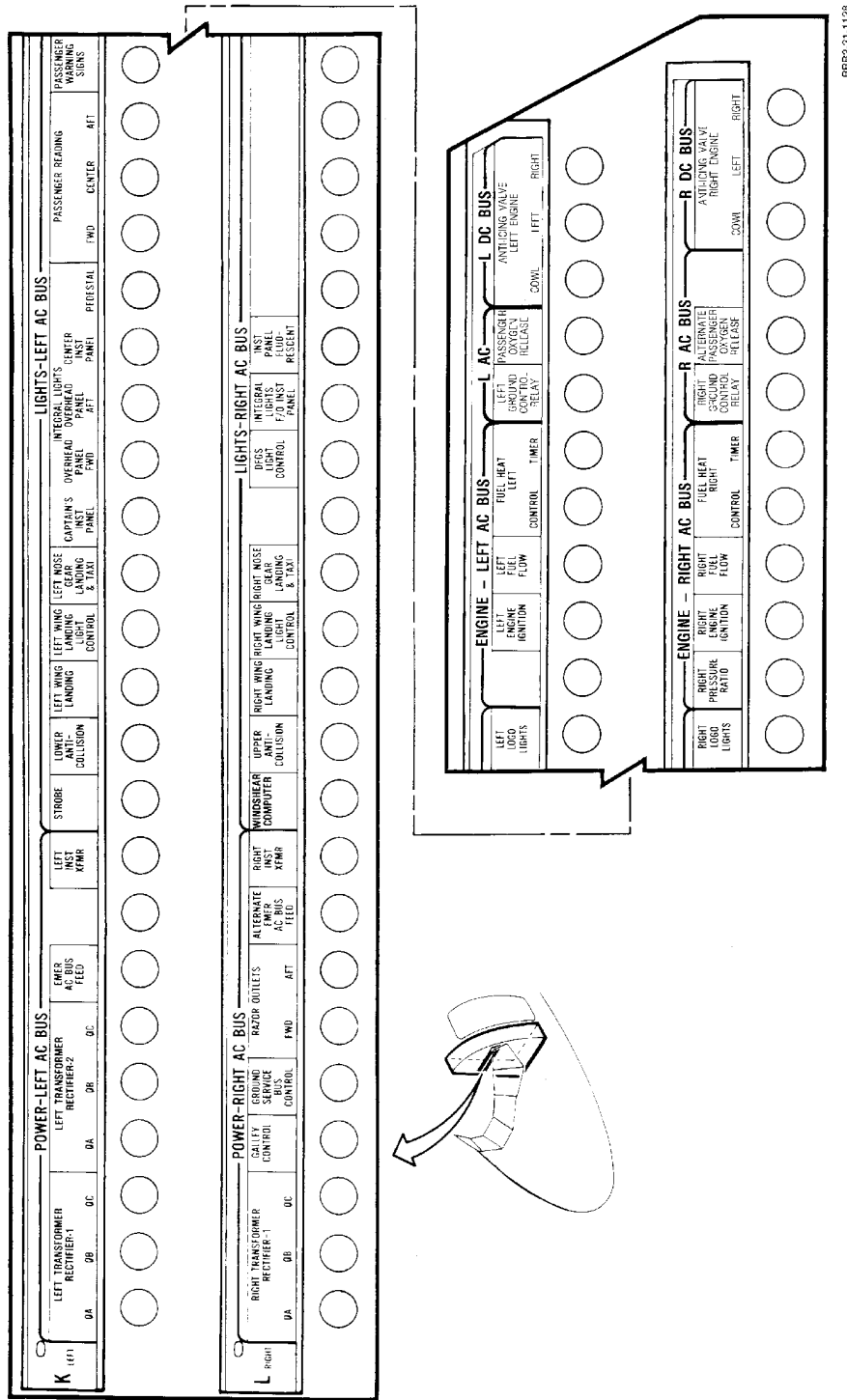
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 42 of 47)

EFFECTIVITY
WJE 415, 418, 863, 864, 866

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68B2-31-1128

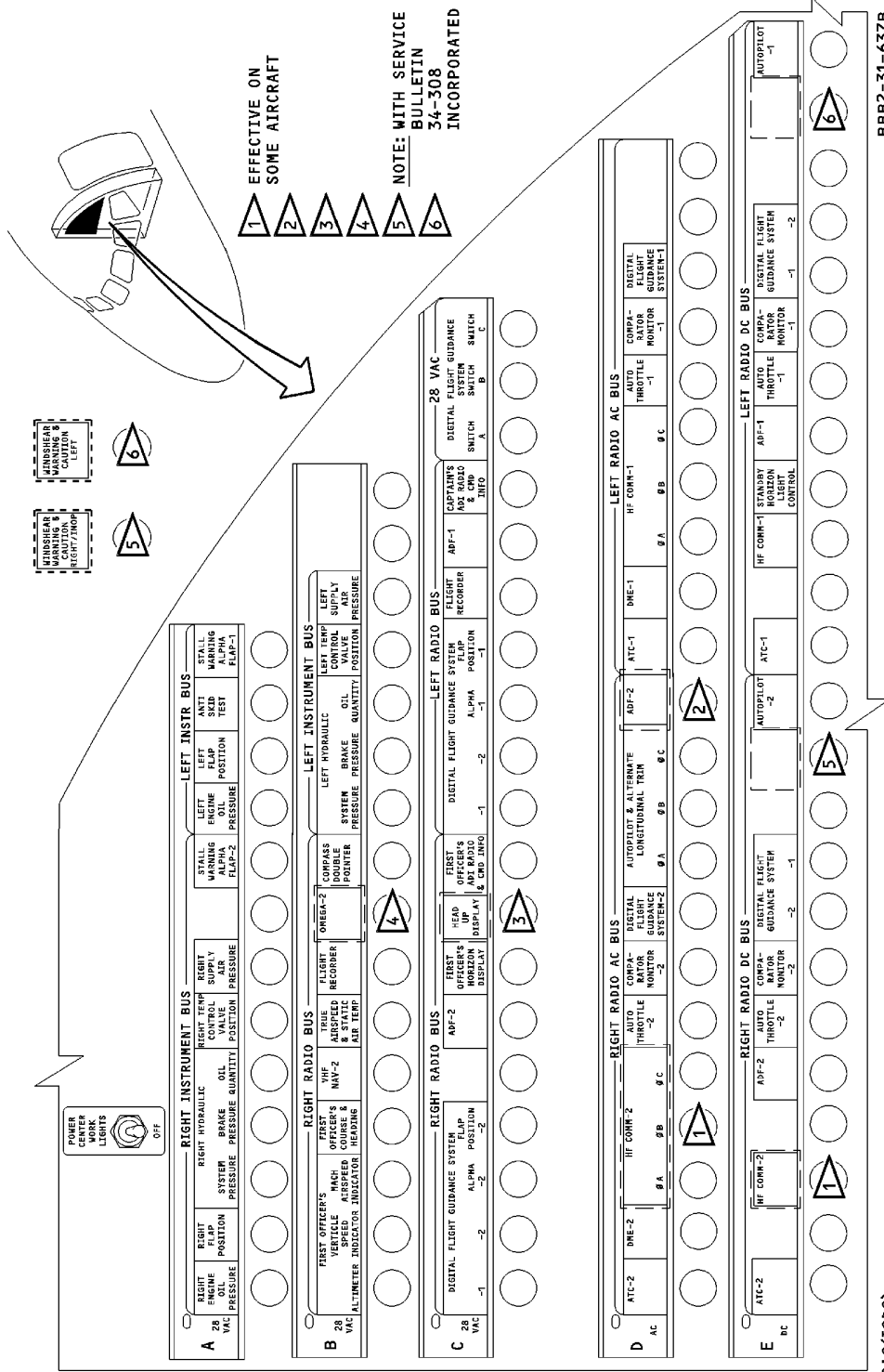
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 43 of 47)

EFFECTIVITY
WJE 417, 419, 421, 423, 865, 869, 871, 872

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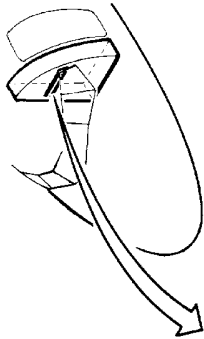
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 44 of 47)**

EFFECTIVITY
WJE 880

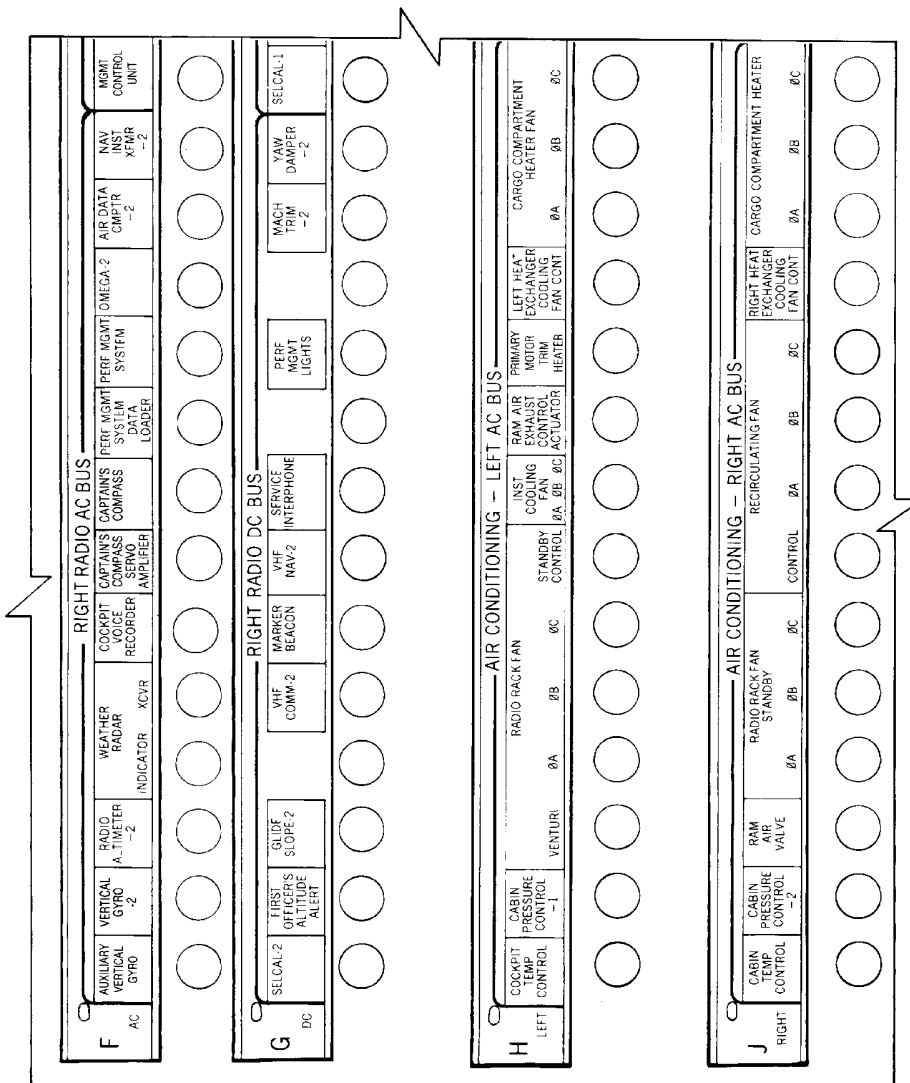
31-15-01

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BBB2-31-824A



**Upper EPC Circuit Breaker Panel
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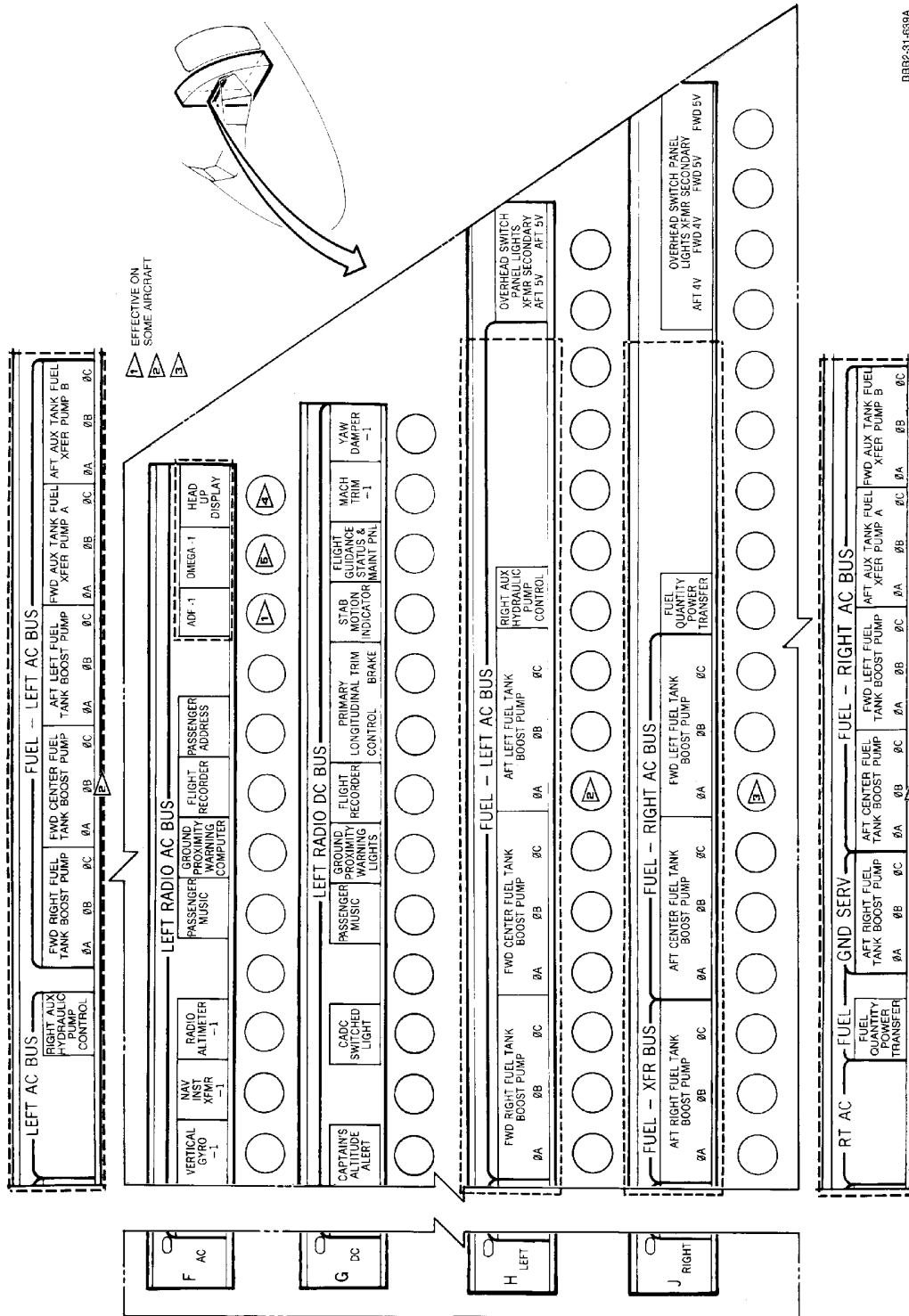
EFFECTIVITY
WJE 880

TP-80MM-WJE

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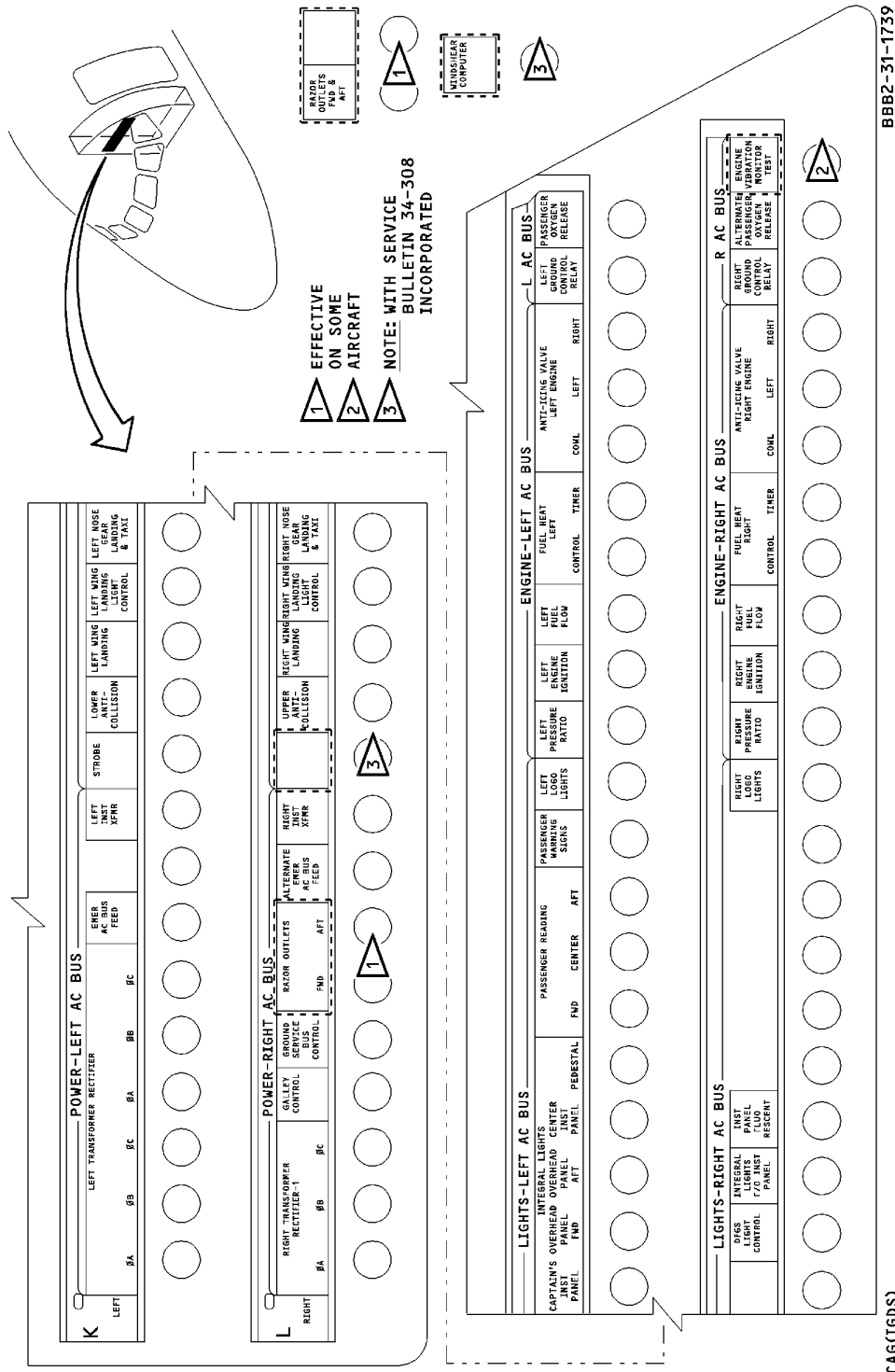
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-801 (Sheet 46 of 47)**

EFFECTIVITY
WJE 880

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Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 880

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UPPER EPC CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION

1. General

- A. The upper EPC circuit breaker panel is located on the upper portion of the aft left bulkhead of the flight compartment.

2. Description

- A. The upper EPC circuit breaker panel provides a mounting base for the right instrument bus, the left and right radio bus, and the AC bus. (Figure 1)

3. Operation

- A. To open a circuit, pull the applicable circuit breaker. To close a circuit, press the applicable circuit breaker.

EFFECTIVITY
WJE 405-411, 880, 881, 883, 884

TP-80MM-WJE

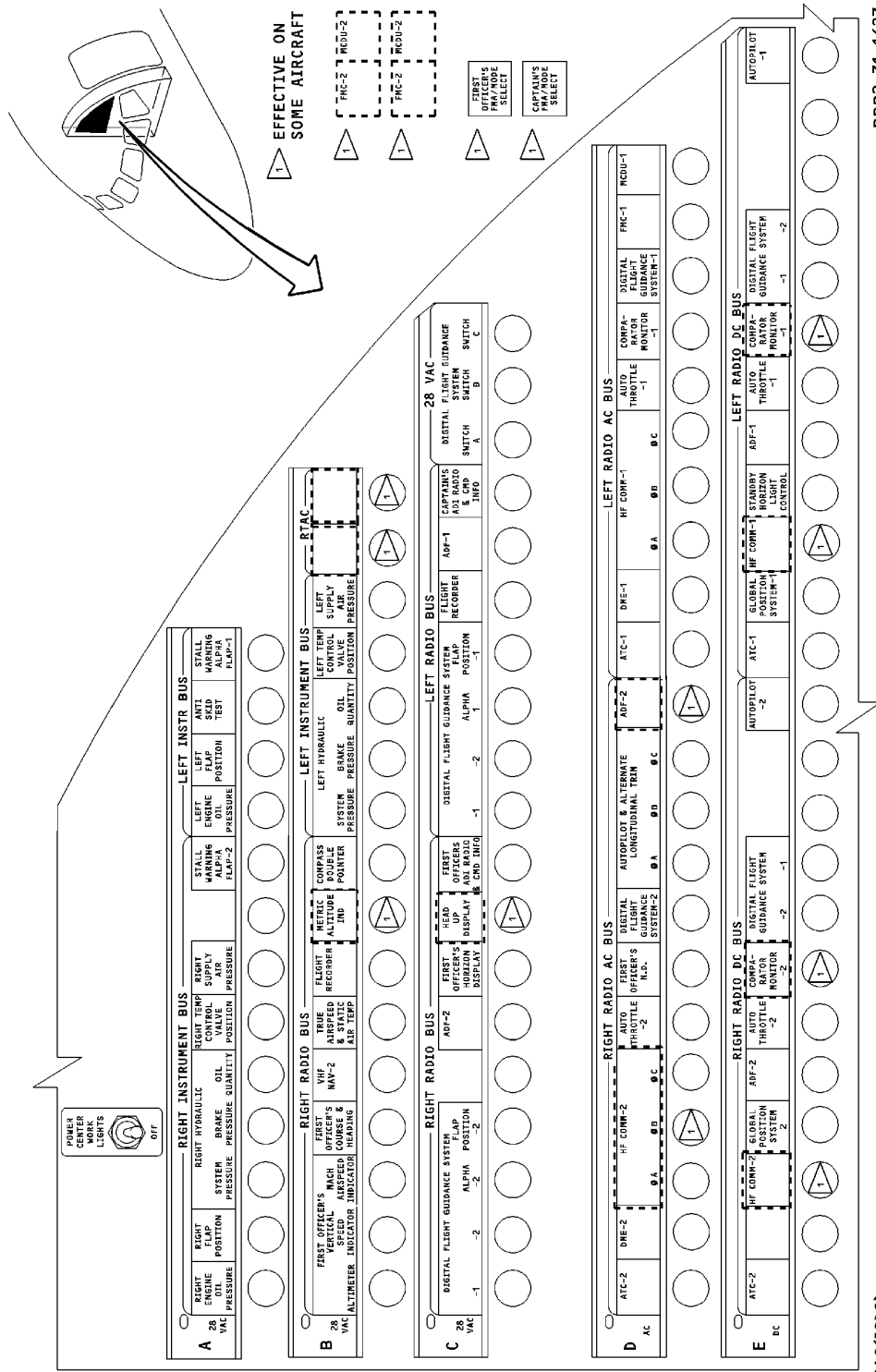
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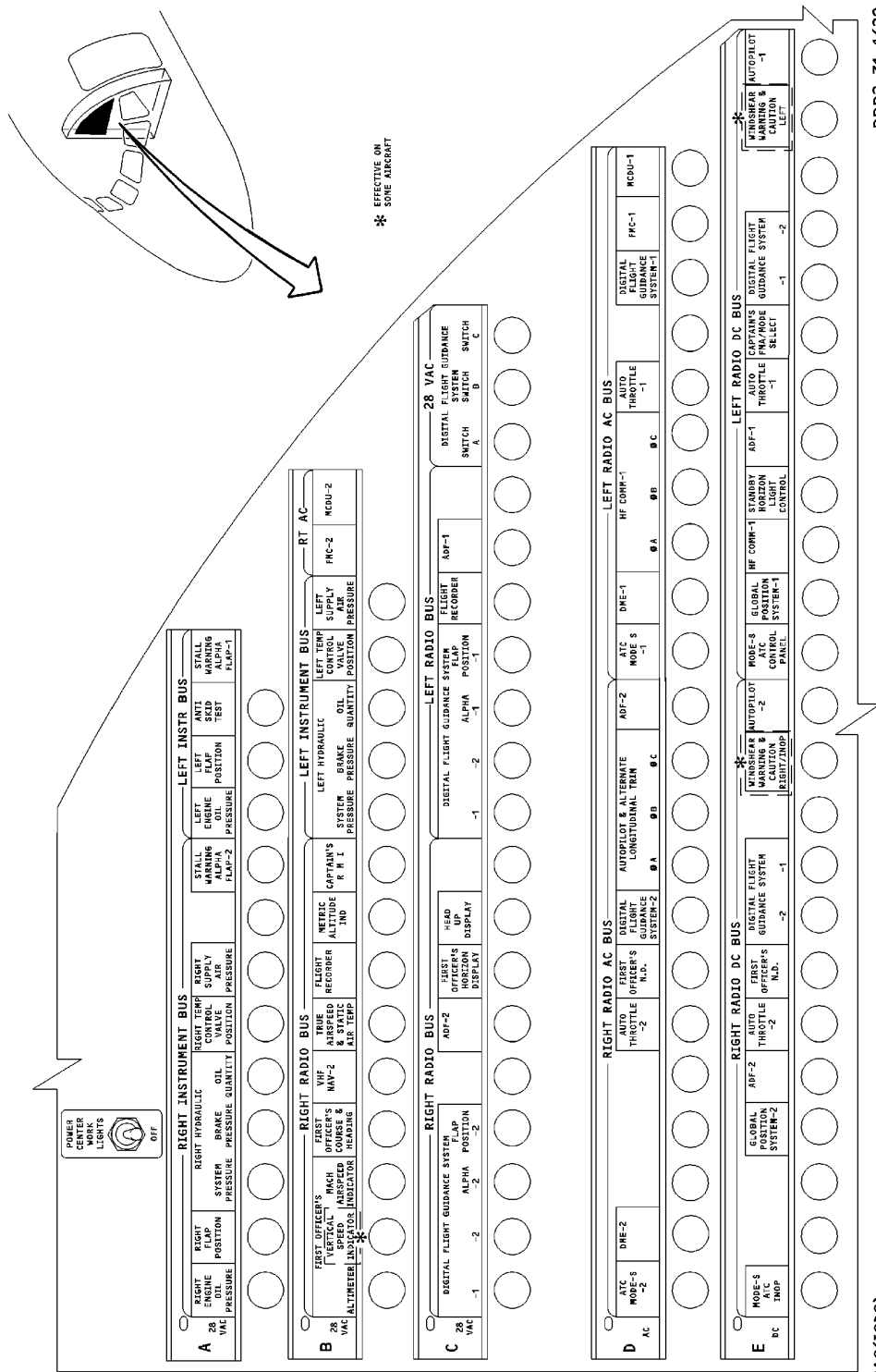
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 1 of 20)

EFFECTIVITY
WJE 880

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BBB2-31-1629

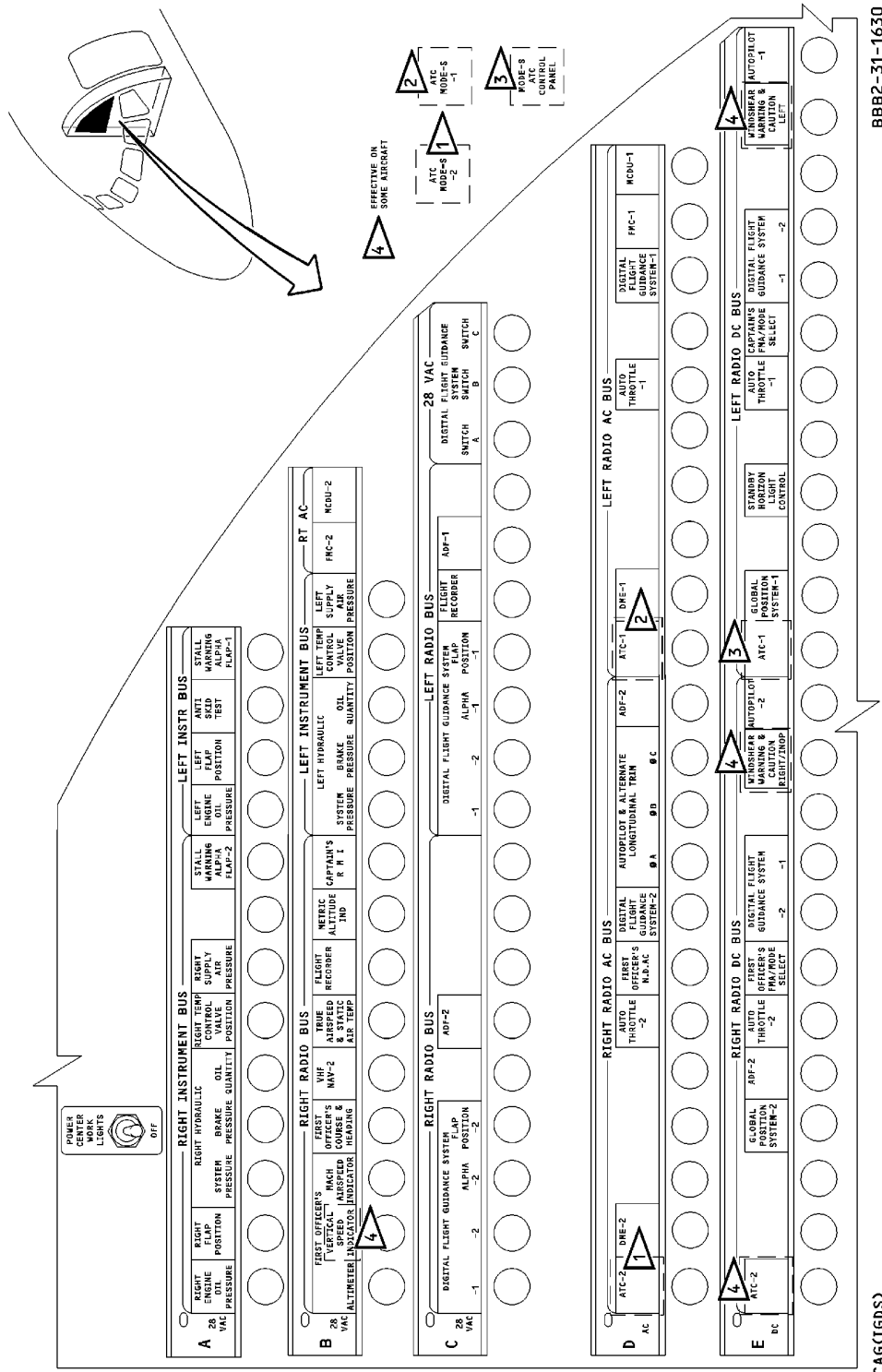
CAG(IGDS)

**Upper EPC Circuit Breaker Panel
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EFFECTIVITY
WJE 407, 408, 411

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Upper EPC Circuit Breaker Panel
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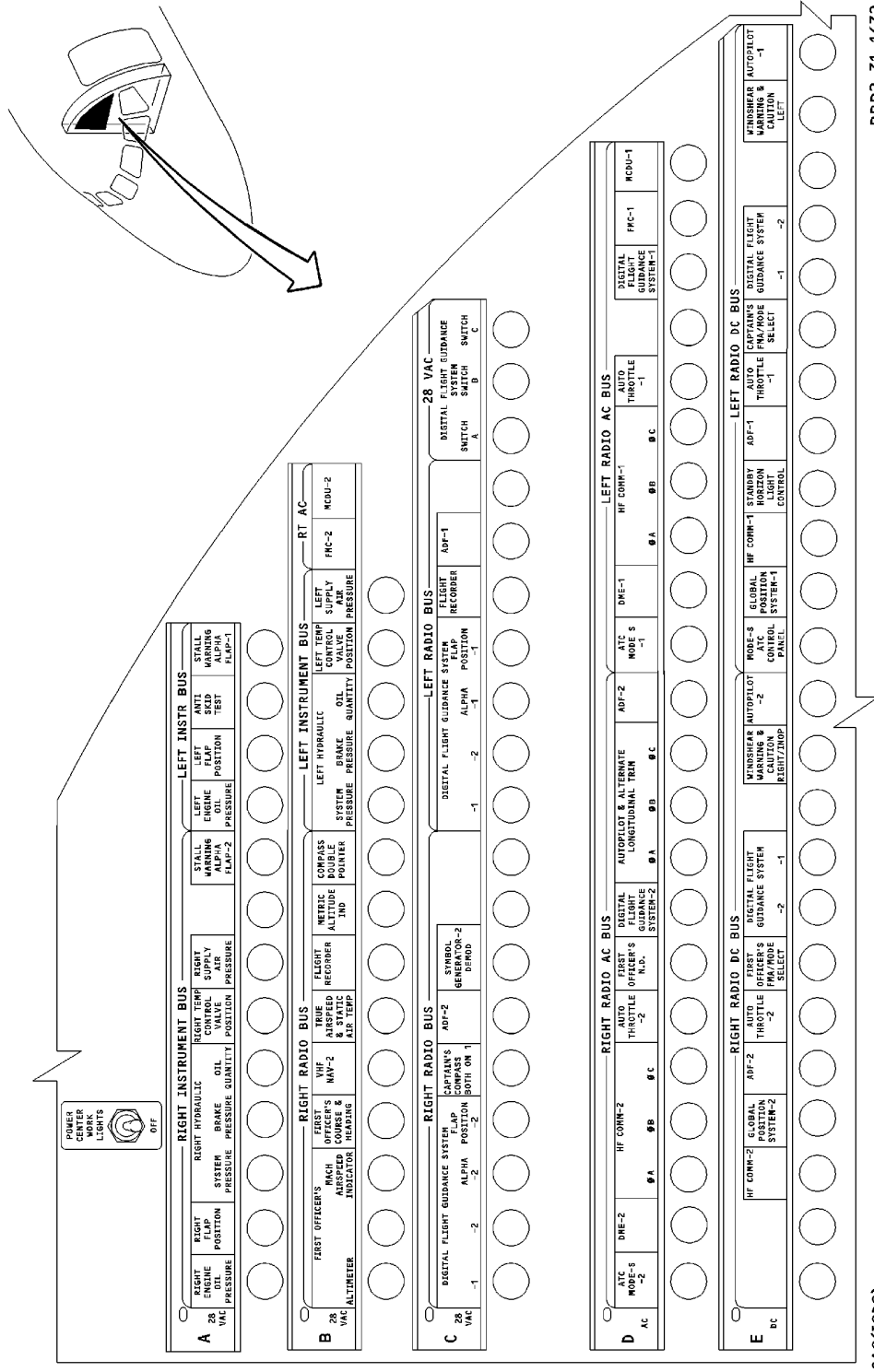
EFFECTIVITY
WJE 406

TP-80MM-WJE

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BBB2-31-1632

CAG(IGDS)

**Upper EPC Circuit Breaker Panel
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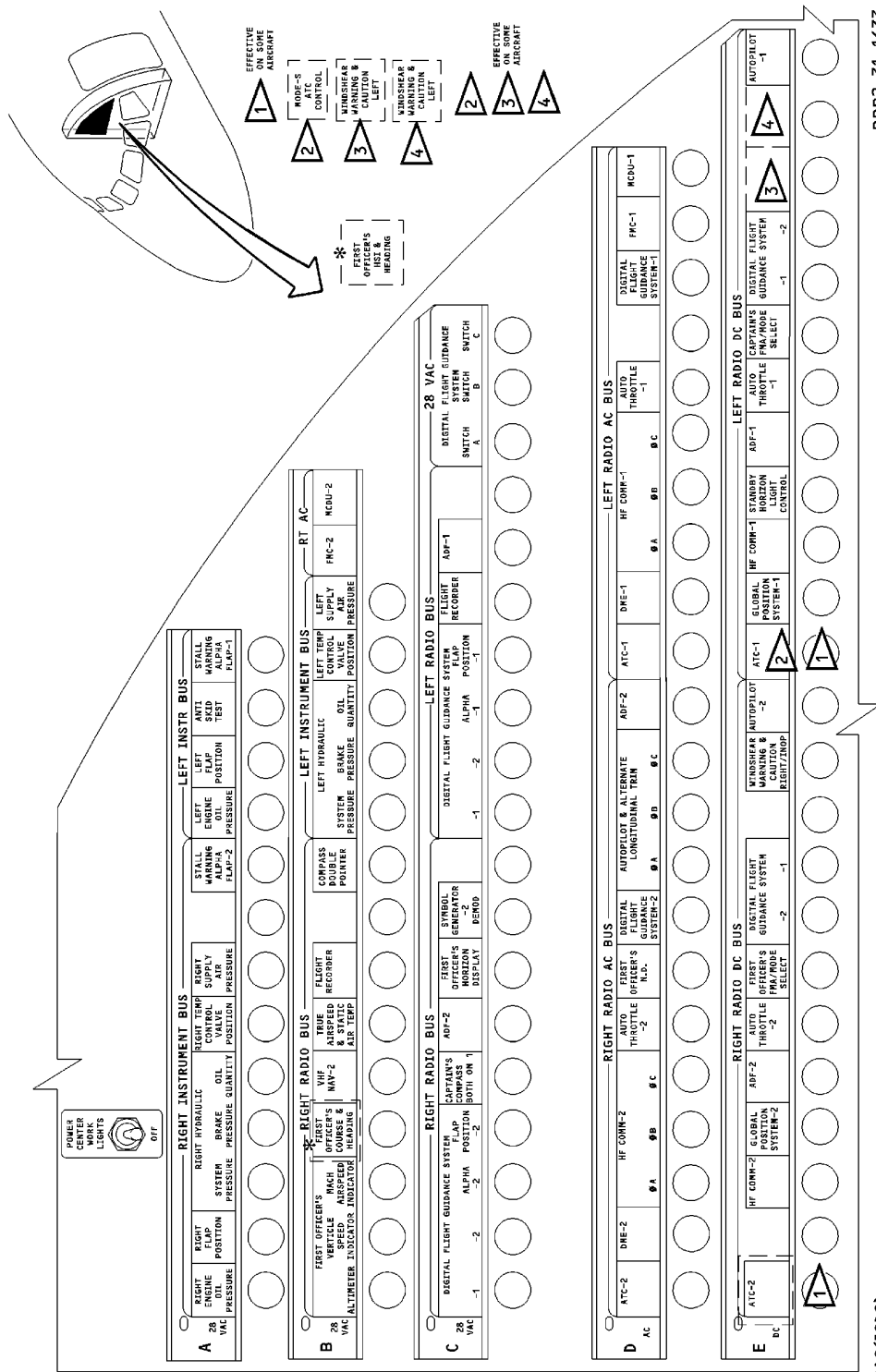
EFFECTIVITY
WJE 410

TP-80MM-WJE

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BB62-31-1633

CAG(IGDS)

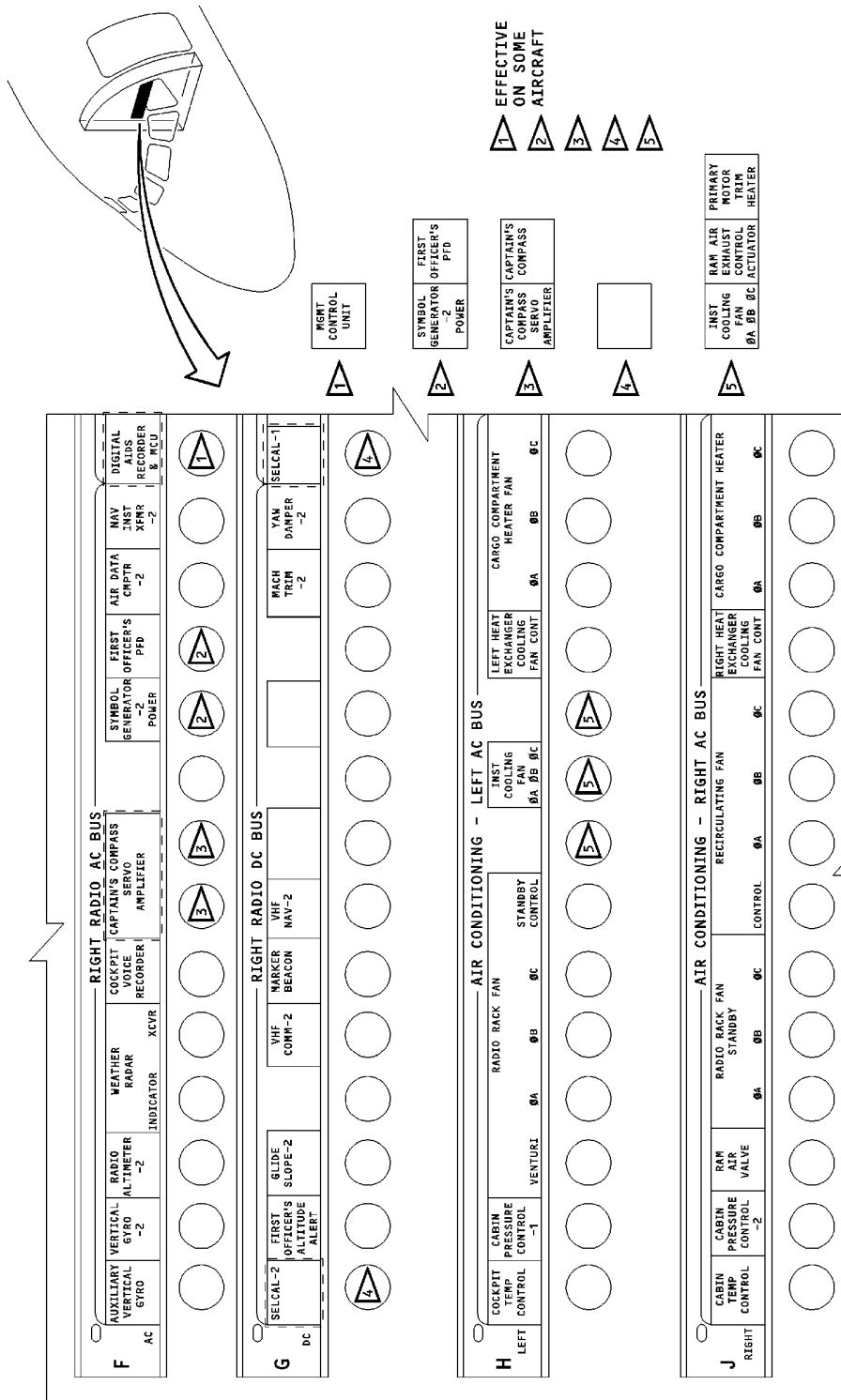
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 5 of 20)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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CAG(IGDS)

Upper EPC Circuit Breaker Panel
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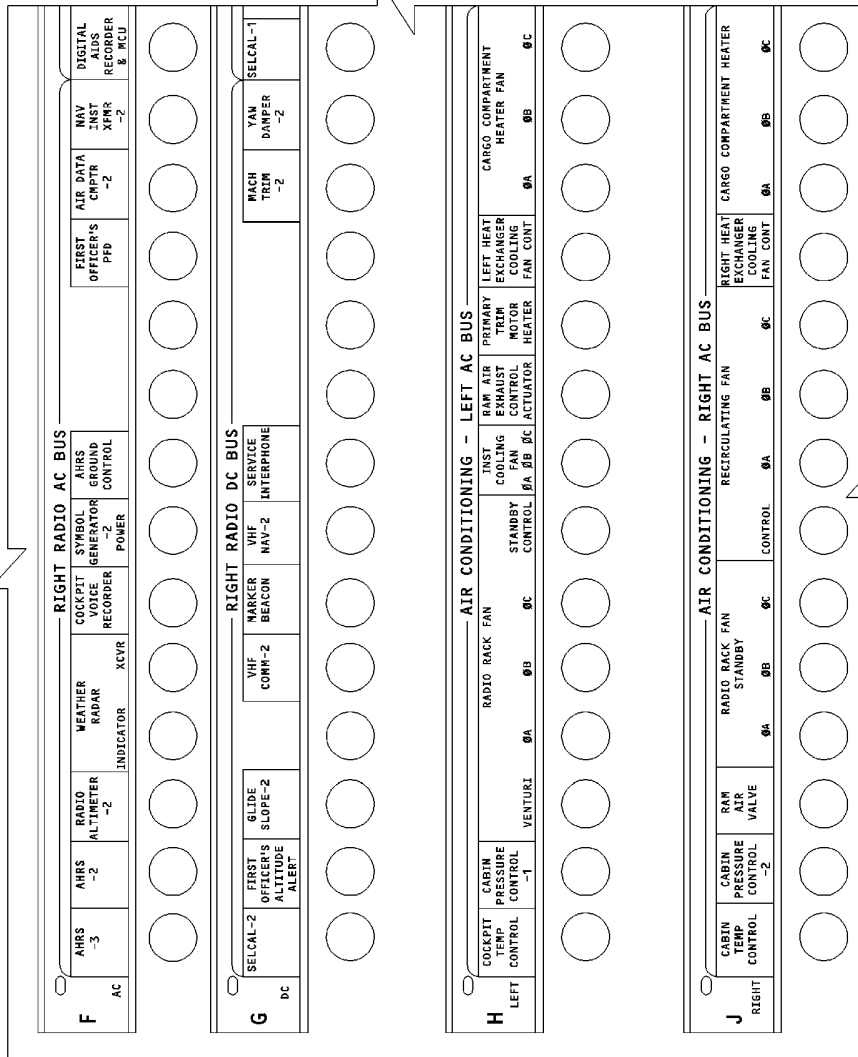
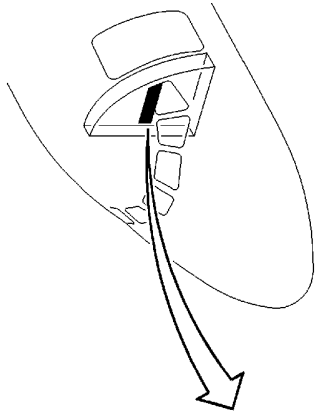
EFFECTIVITY
WJE 880

TP-80MM-WJE

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MD-80 AIRCRAFT MAINTENANCE MANUAL



Upper EPC Circuit Breaker Panel
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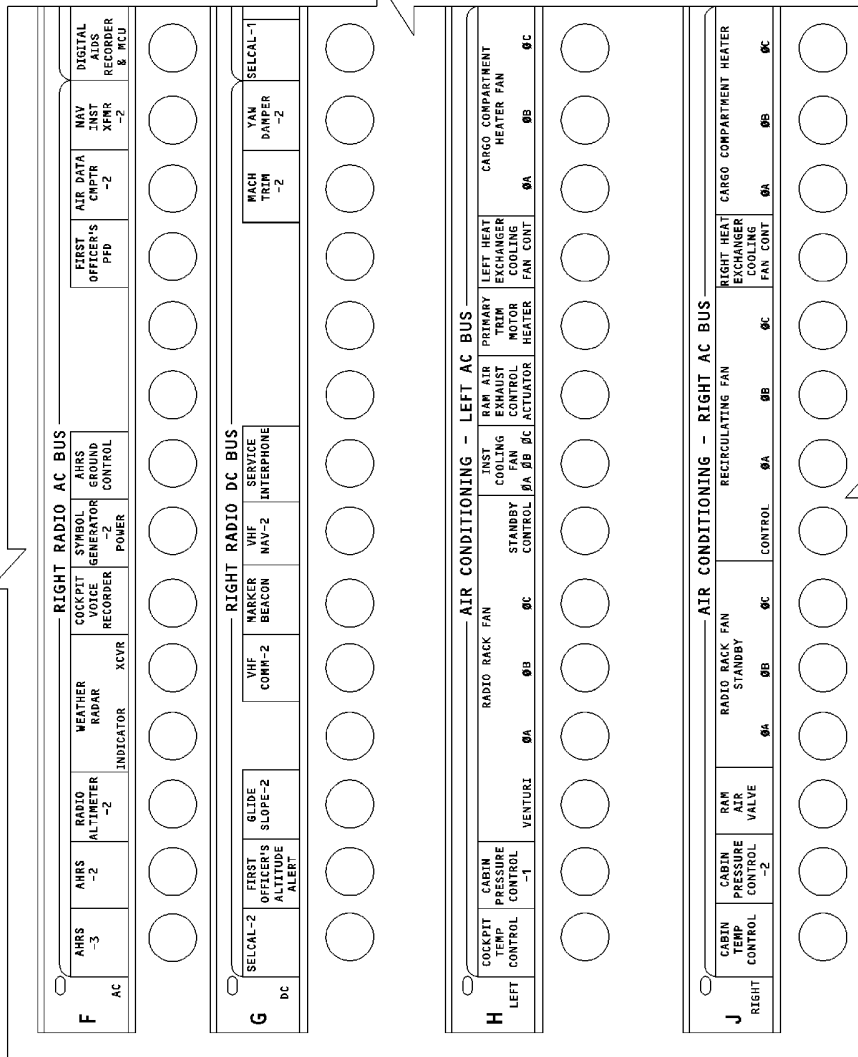
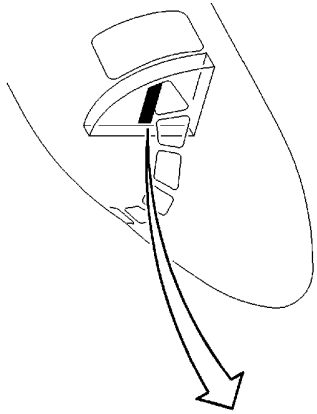
CAG(IGDS)

EFFECTIVITY
WJE 407, 408, 411

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Upper EPC Circuit Breaker Panel
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BBB2-31-1637

CAG(IGDS)

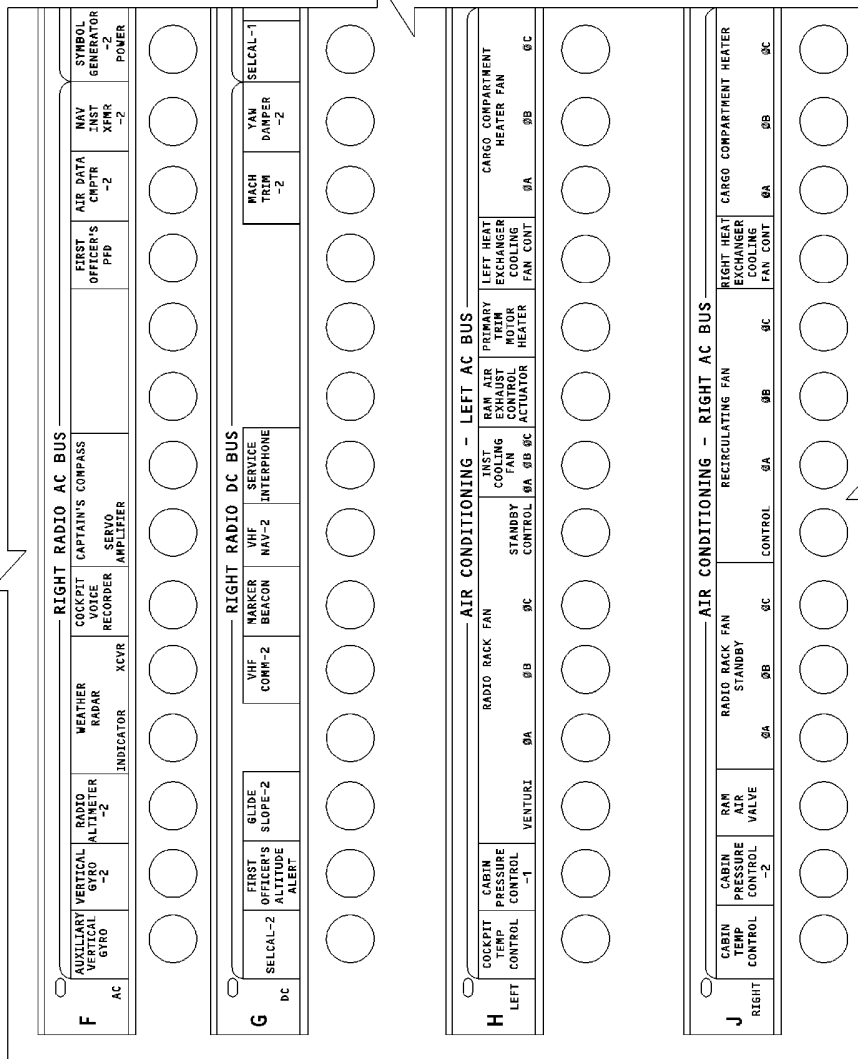
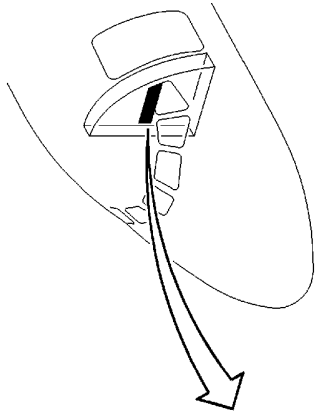
EFFECTIVITY
WJE 406

TP-80MM-WJE

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Upper EPC Circuit Breaker Panel
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BBB2-31-1639

CAG(IGDS)

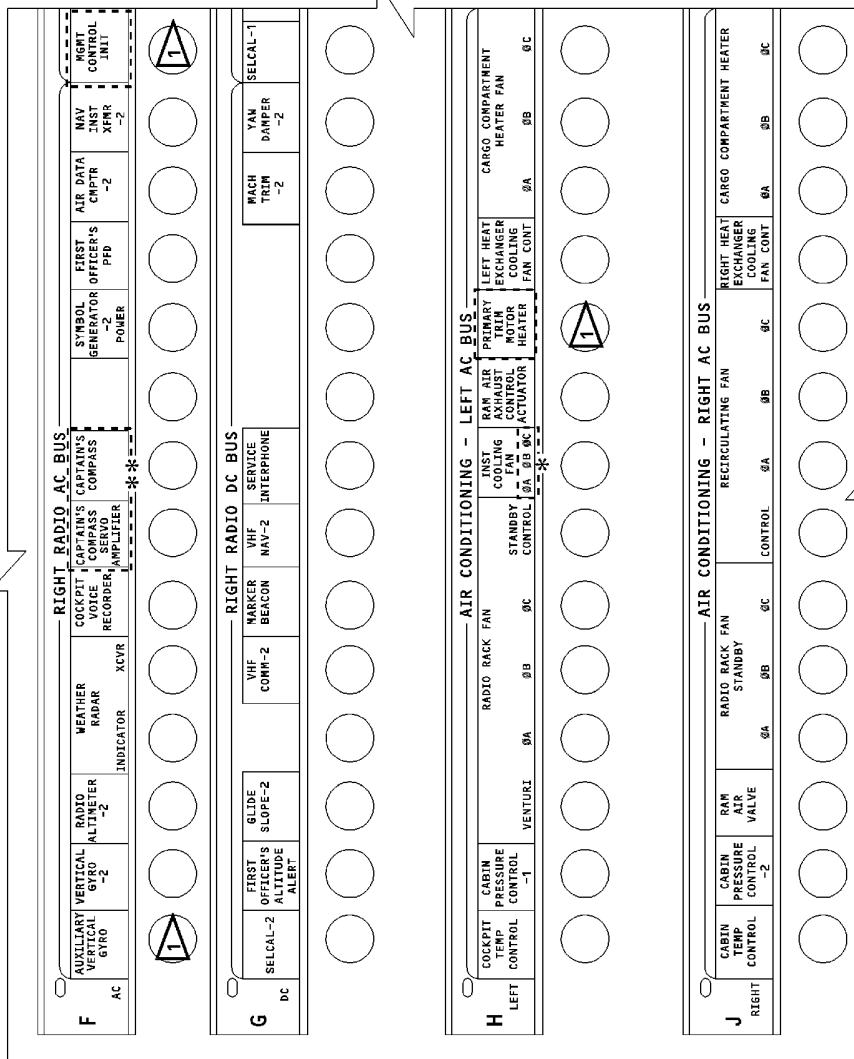
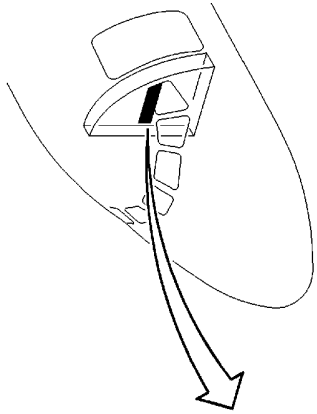
EFFECTIVITY
WJE 410

TP-80MM-WJE

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** EFFECTIVE ON SOME AIRCRAFT

CAPTAIN'S COMPASS SERVO AMPLIFIER

BBB2-31-1640

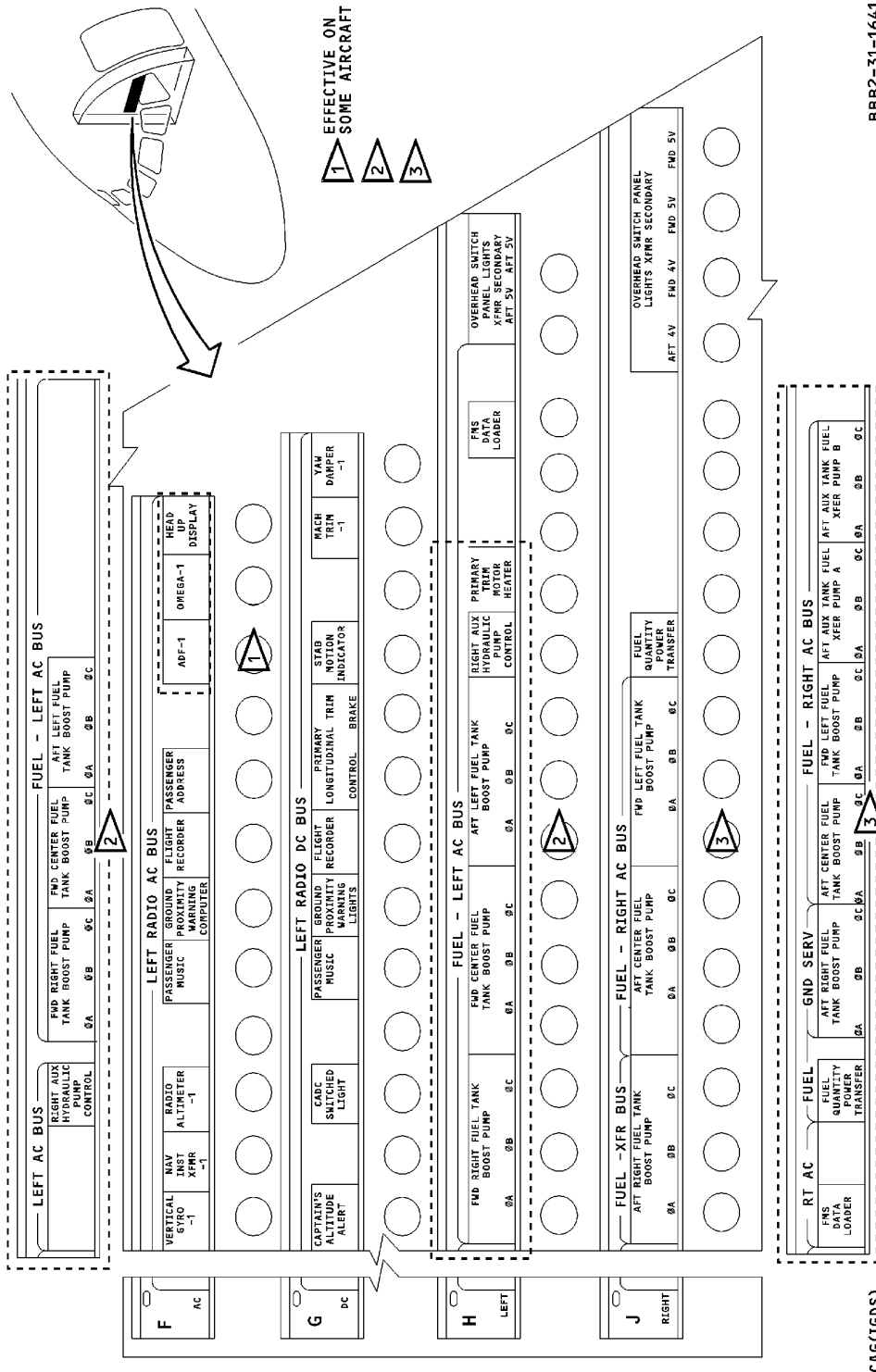
CAG(IGDS)

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 10 of 20)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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BBB2-31-1641

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 11 of 20)

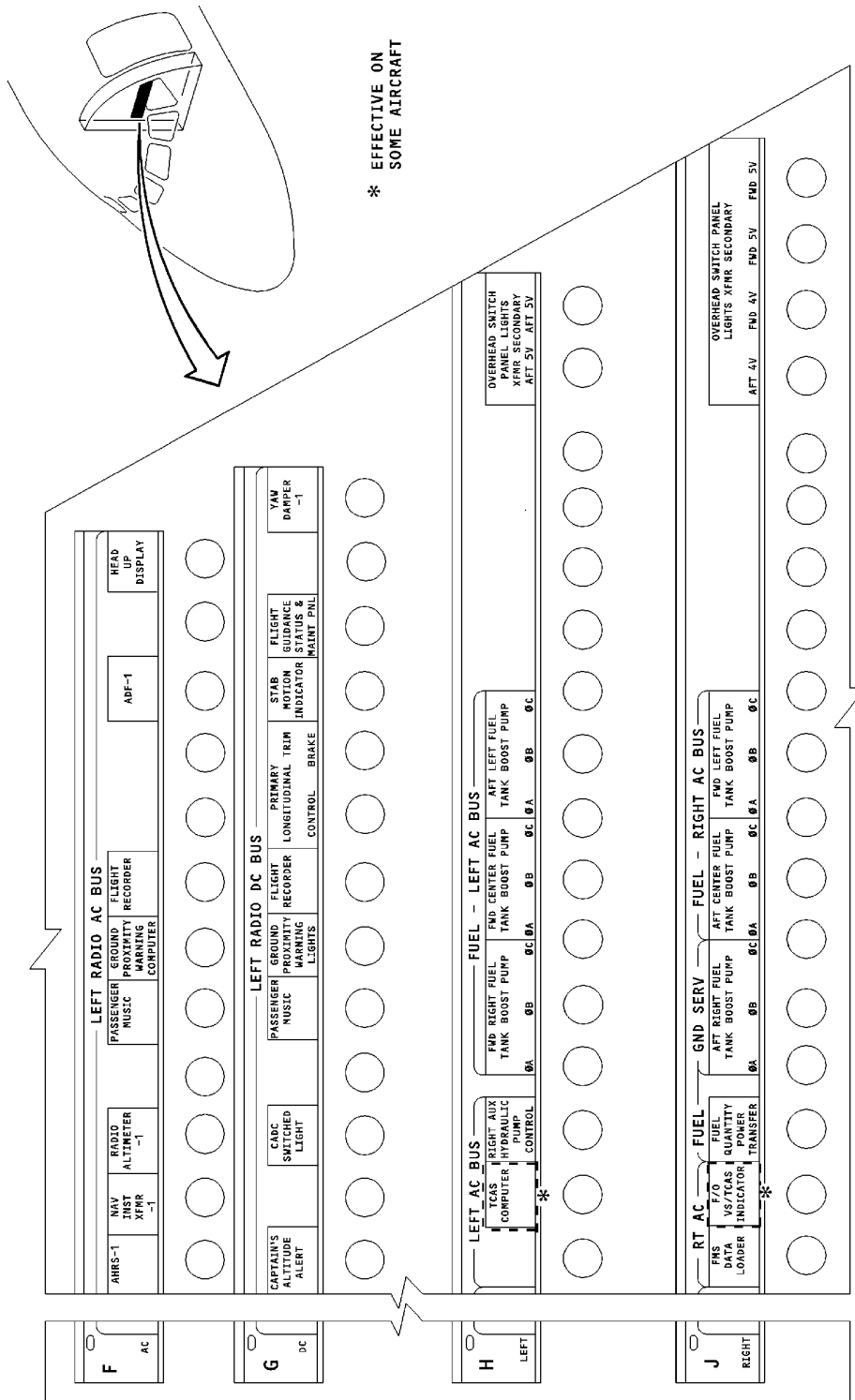
EFFECTIVITY
WJE 880

TP-80MM-WJE

31-15-01

Config 4
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MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1643

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 12 of 20)

CAG(IGDS)

EFFECTIVITY
WJE 407, 408, 411

TP-80MM-WJE

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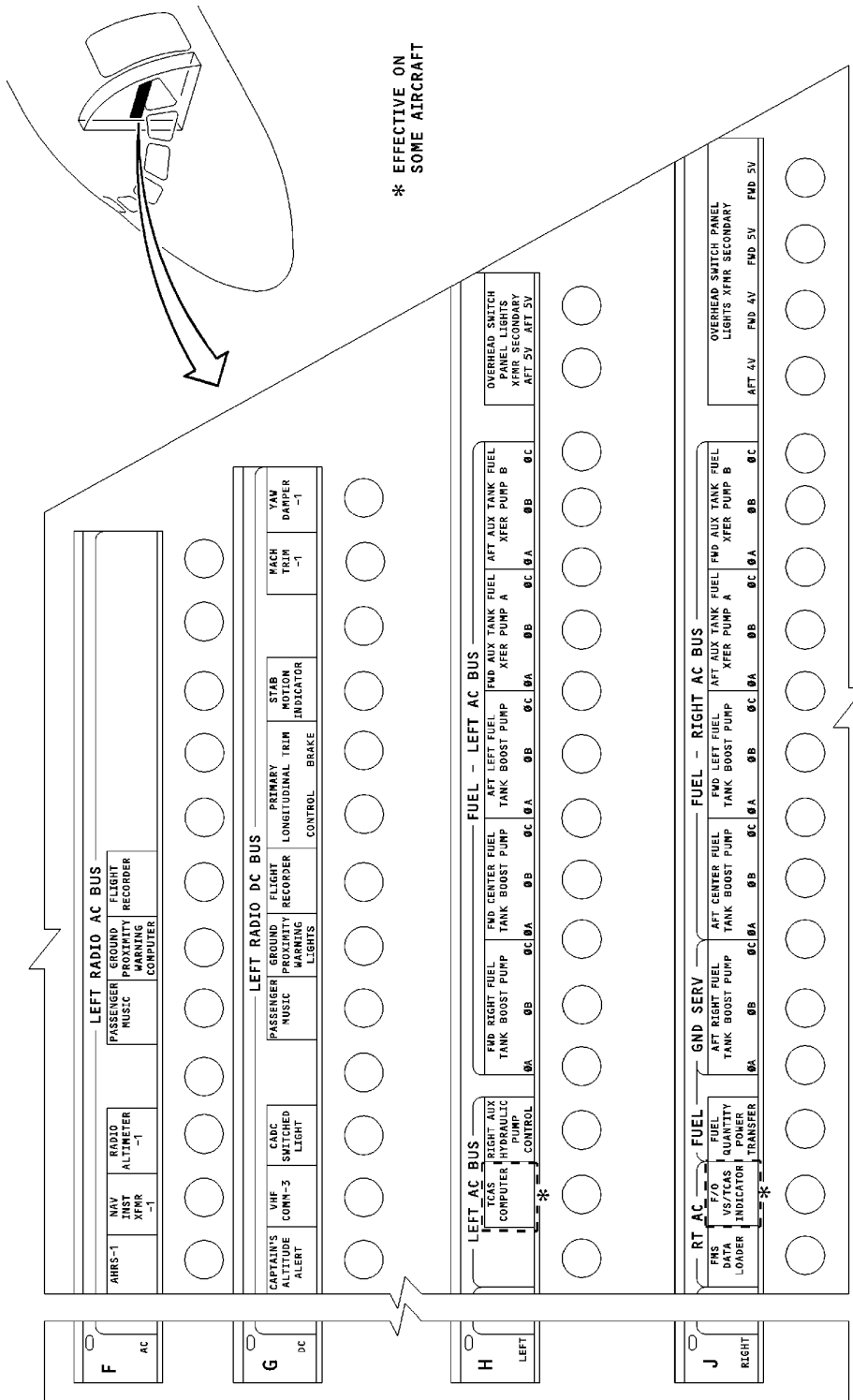
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Config 4
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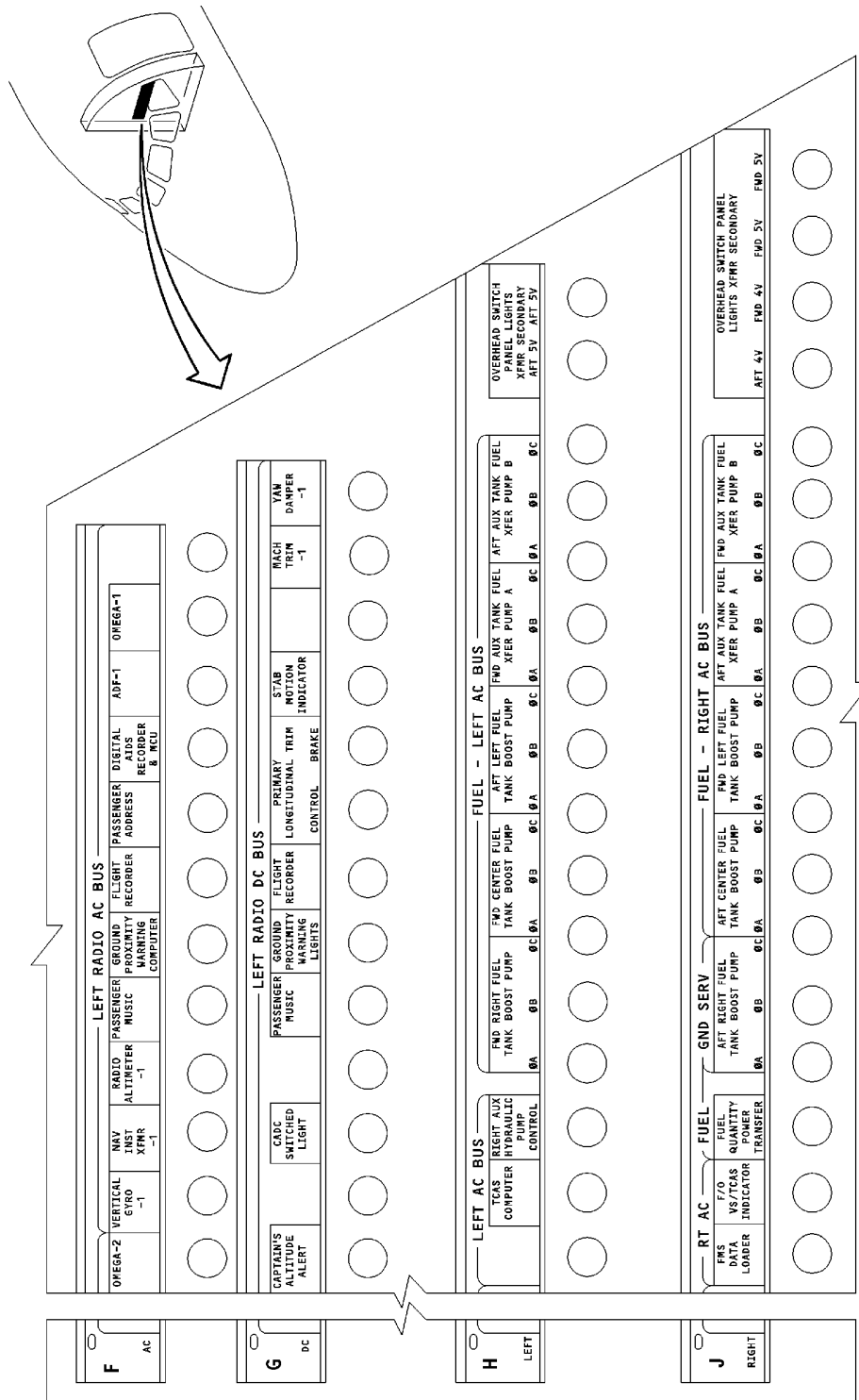
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 13 of 20)

EFFECTIVITY
WJE 406

TP-80MM-WJE

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BBB2-31-1646

CAG (IGDS)

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 14 of 20)

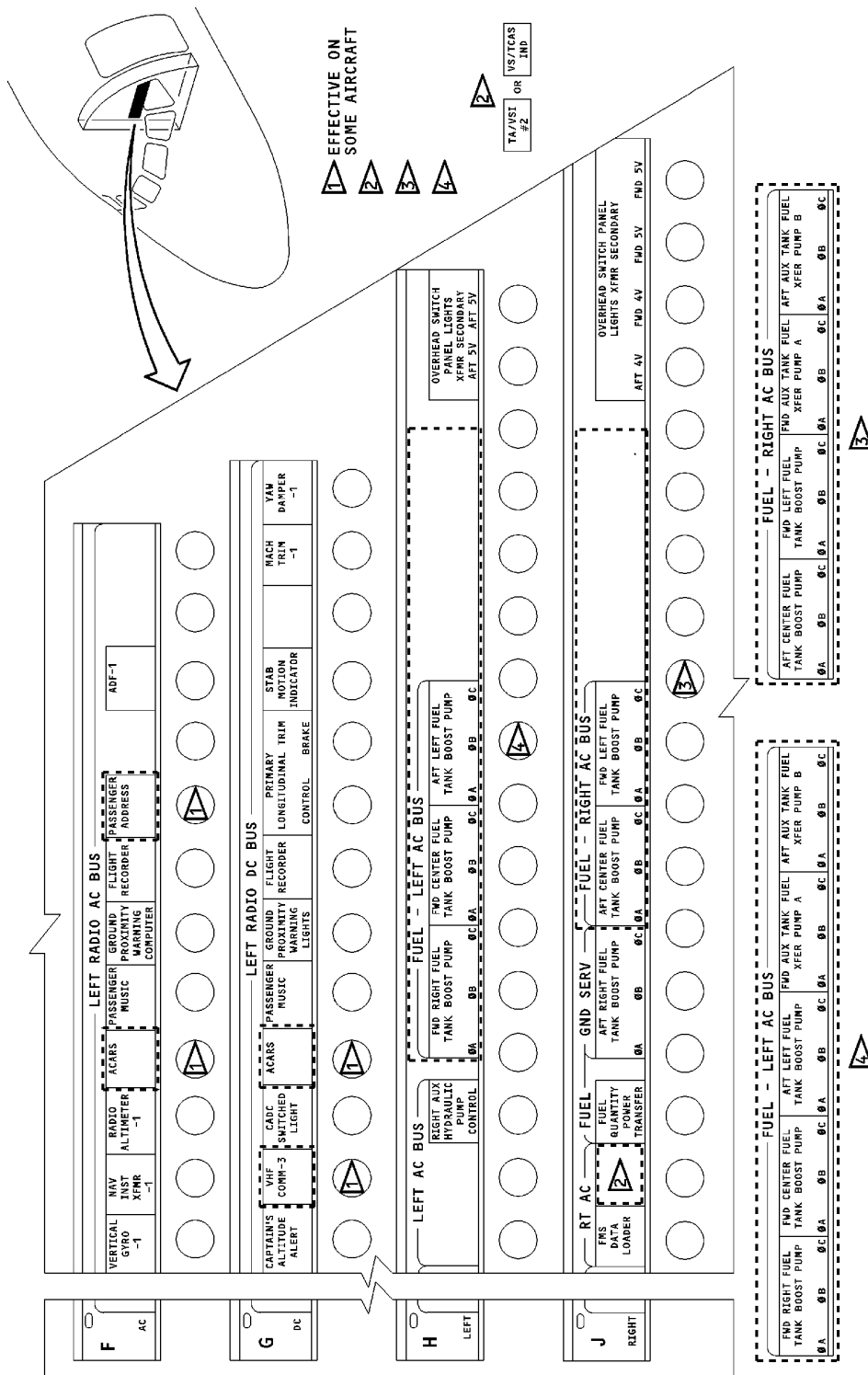
EFFECTIVITY
WJE 410

TP-80MM-WJE

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Config 4
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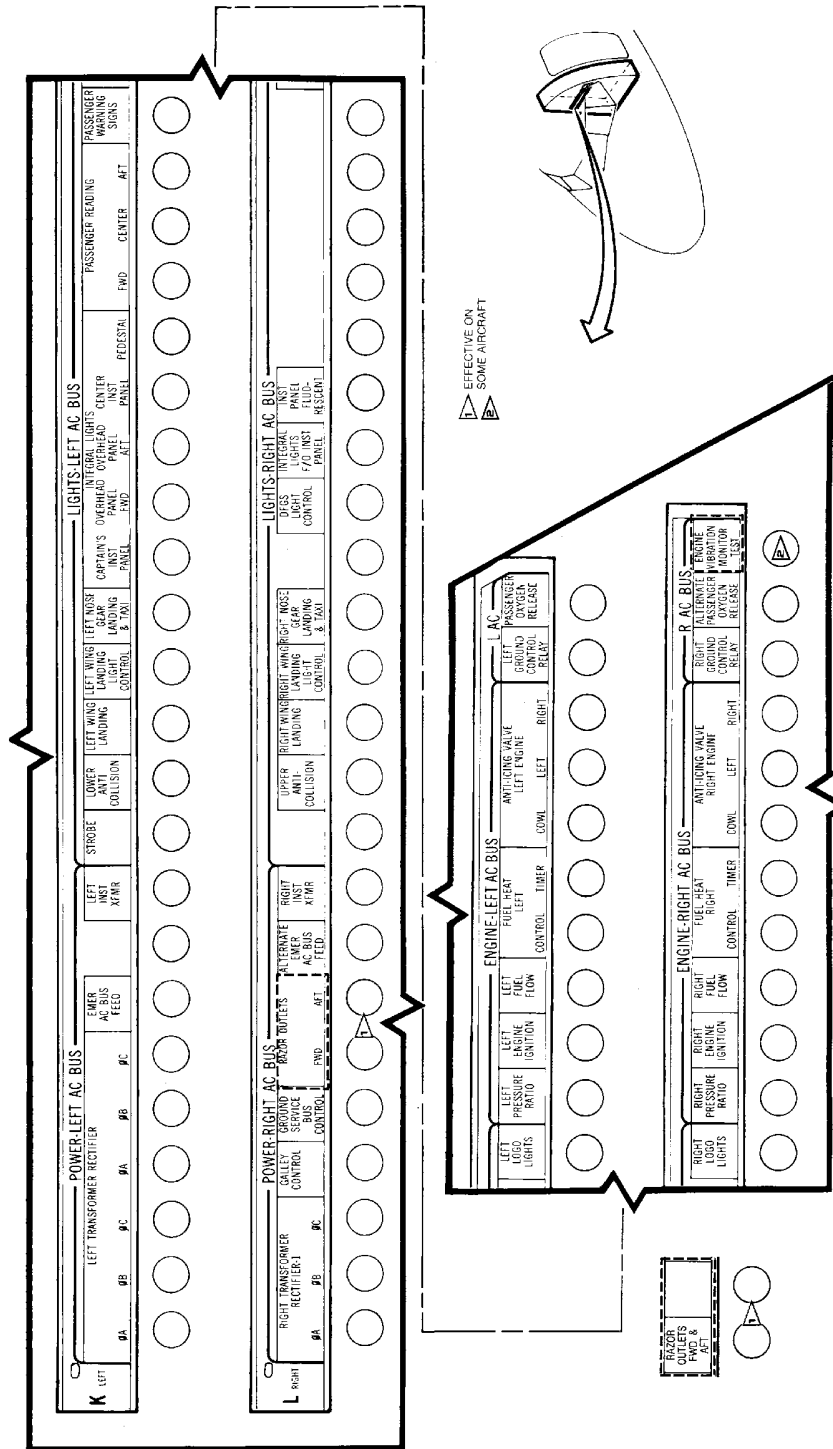
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 15 of 20)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

TP-80MM-WJE

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BBB2-31-1206

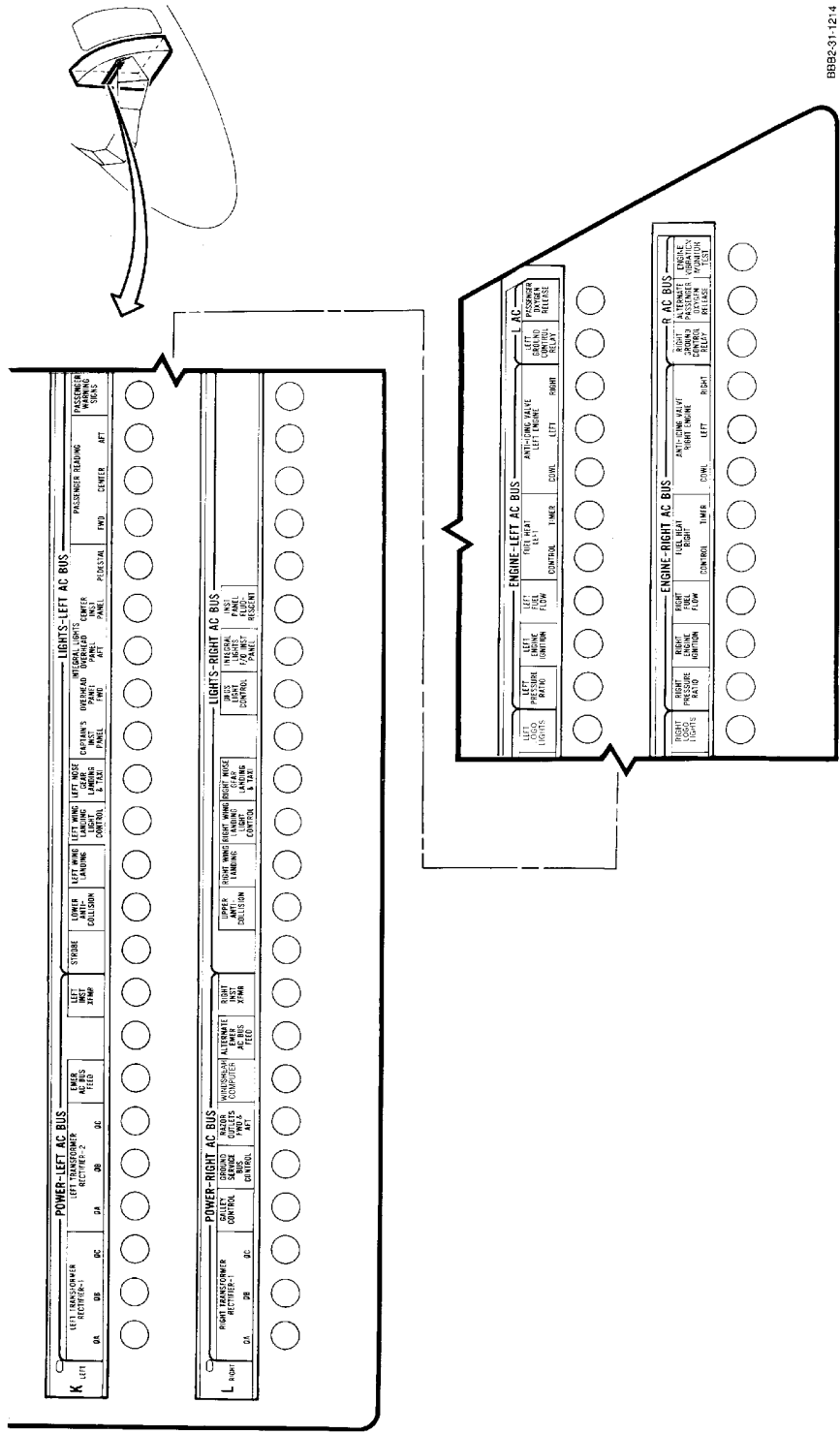
**Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 16 of 20)**

EFFECTIVITY
WJE 880

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Config 4
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TP-80MM-WJE

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Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 17 of 20)

BB82-31-1214

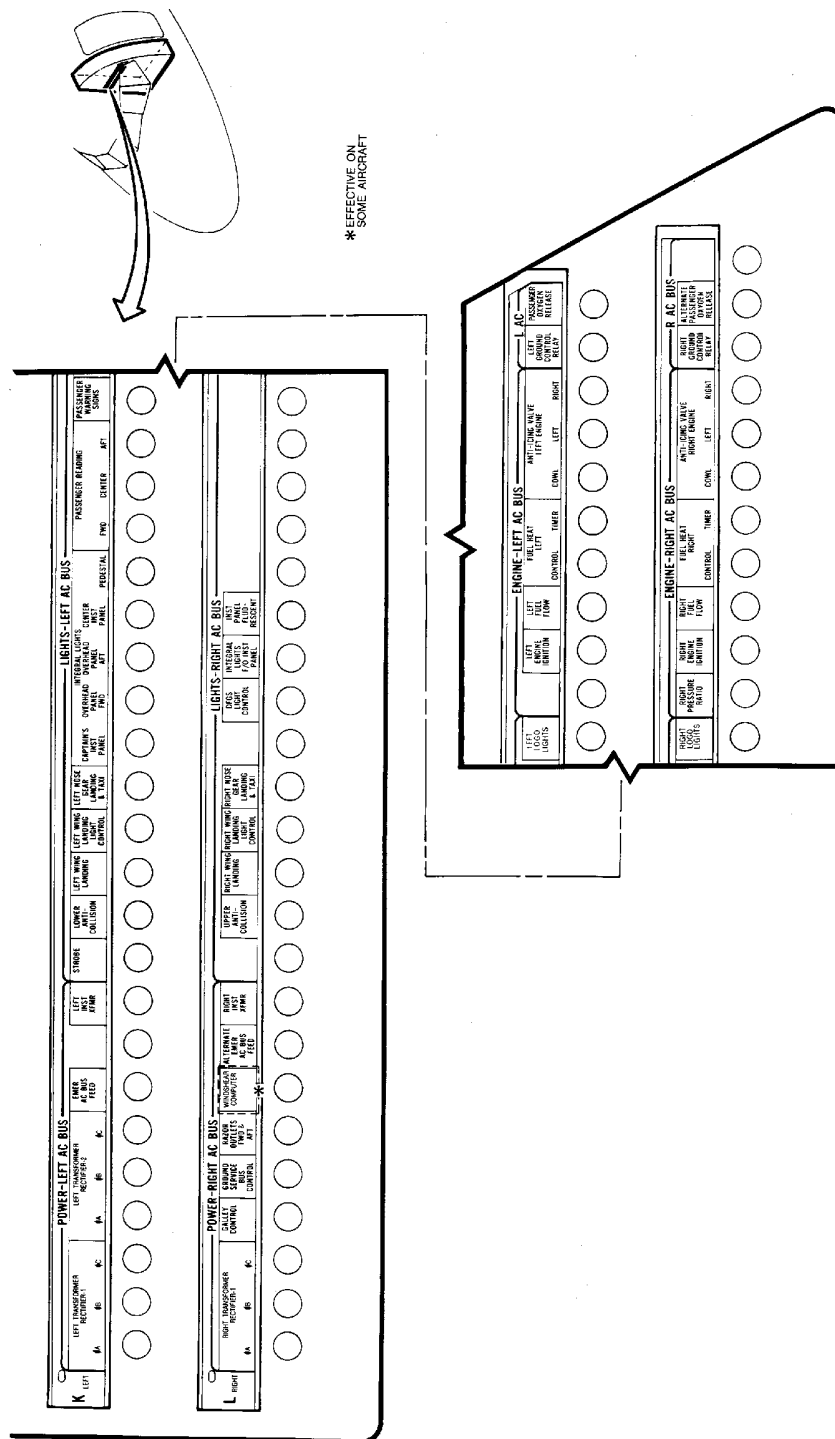
EFFECTIVITY
 WJE 407, 408, 411

TP-80MM-WJE

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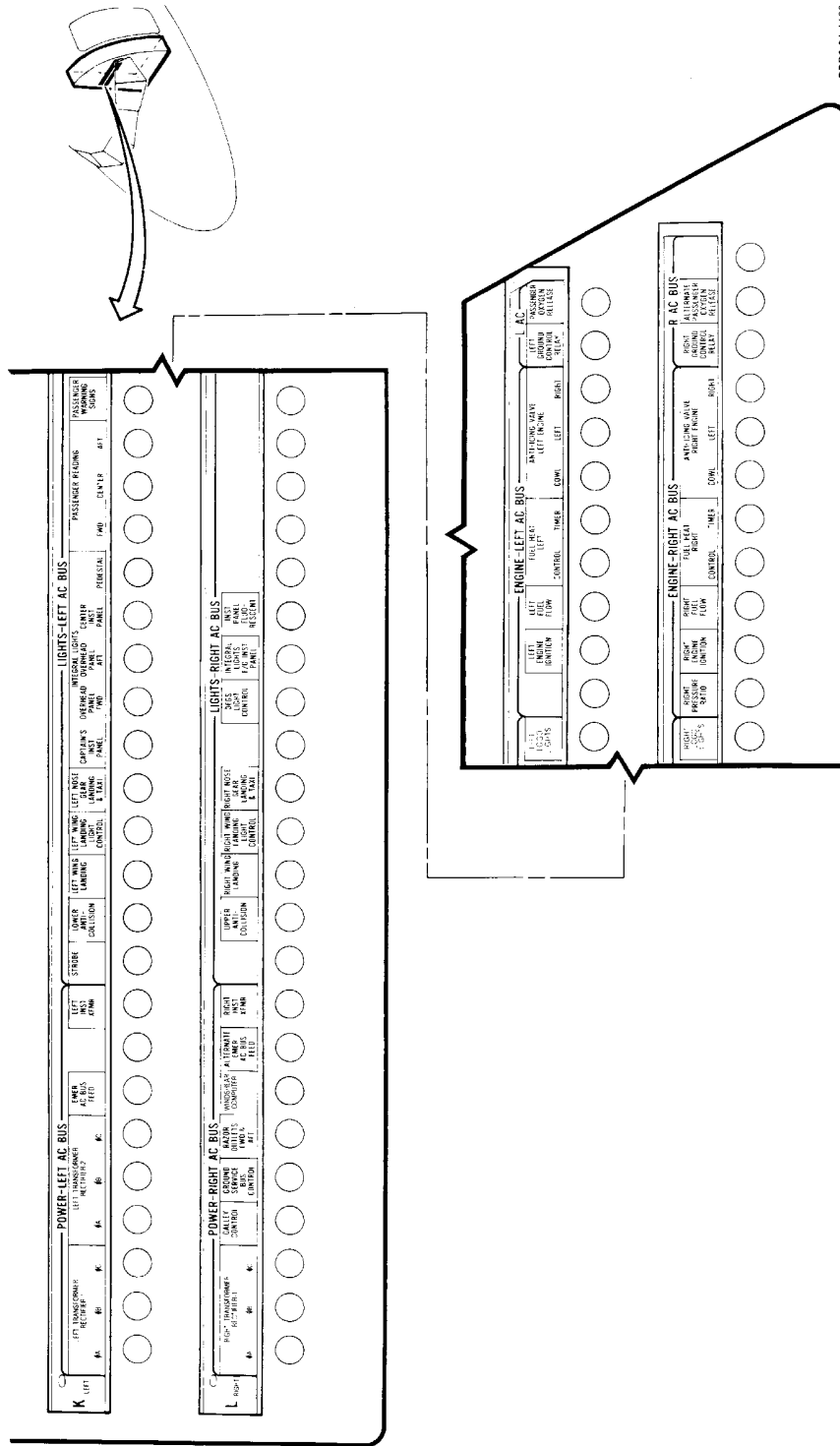
Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 18 of 20)

EFFECTIVITY WJE 406

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TP-80MM-WJE

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99B2-31-1160

Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 19 of 20)

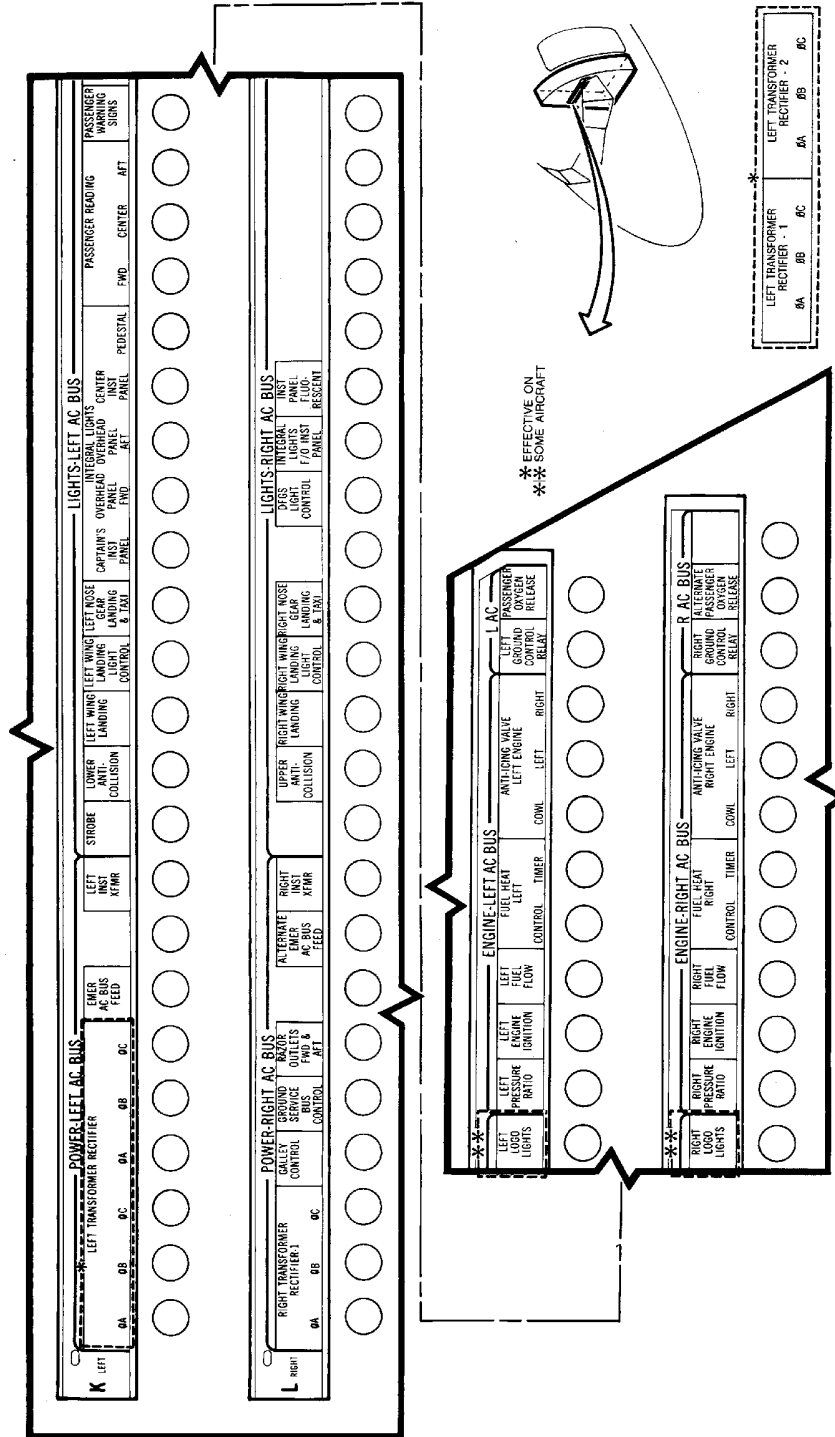
EFFECTIVITY
WJE 410

TP-80MM-WJE

31-15-01

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Upper EPC Circuit Breaker Panel
Figure 1/31-15-01-990-835 (Sheet 20 of 20)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

TP-80MM-WJE

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LOWER EPC CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION

1. General

- A. The lower EPC circuit breaker panel is located on the lower portion of the aft left bulkhead of the flight compartment.

2. Description

- A. The lower EPC circuit breaker panel provides a mounting base for the AC Buses, DC Buses, and the DC Transfer Bus. (Figure 1) (Figure 2) (Figure 3)

WJE 875-879

- B. The EPC panel is located adjacent to the lower EPC circuit breaker panel. The EPC panel contains the AC Crosstie Reset switch, the Ice Fod test/reset switch, and the circuit breaker(s) for the wing ice detection system. (Figure 4)

WJE ALL

3. Operation

- A. To open a circuit, pull the applicable circuit breaker. To close a circuit, press the applicable circuit breaker.

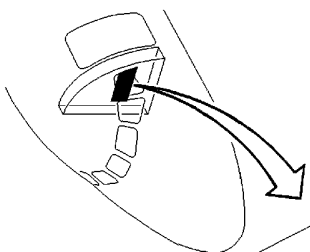
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-15-02

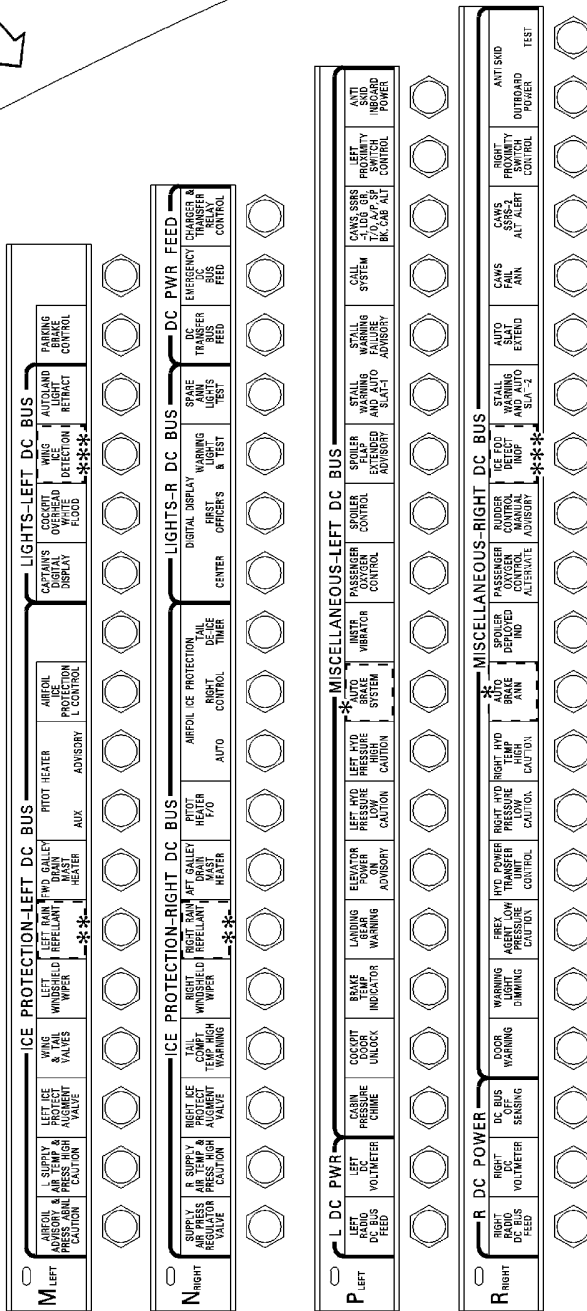
Page 1
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MD-80 AIRCRAFT MAINTENANCE MANUAL



**** NOTE:**
EFFECTIVE ON
APPLICABLE TO
AIRCRAFT WITHOUT
SB 30-76
INCORPORATED

***** EFFECTIVE ON
APPLICABLE TO
AIRCRAFT WITHOUT
SB 30-76
INCORPORATED**



**Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 1 of 11)**

BBB2-31-228C

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CAG(I)GDS)

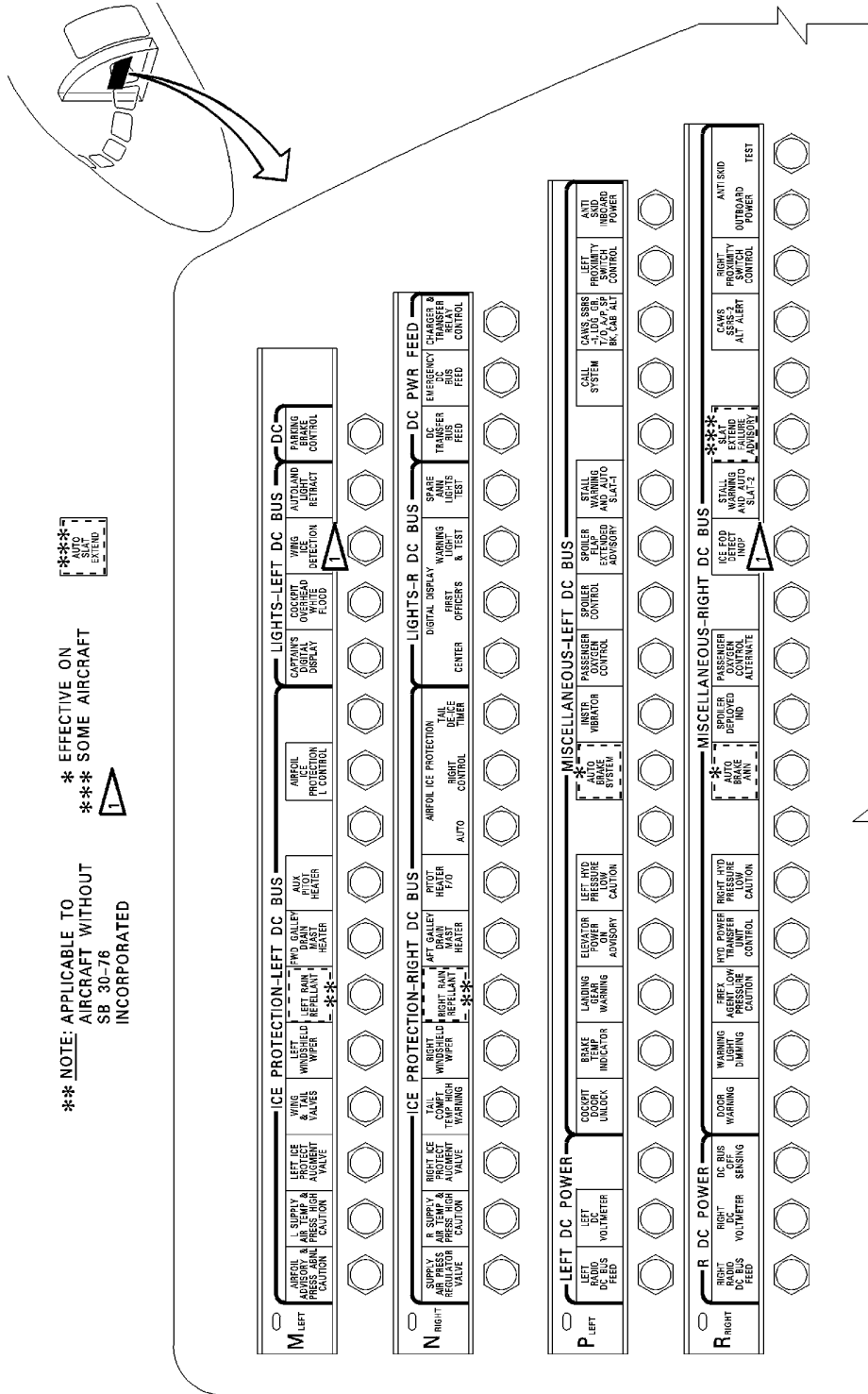
EFFECTIVITY
WJE 405, 409, 881, 883, 884

31-15-02

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TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-31-1828

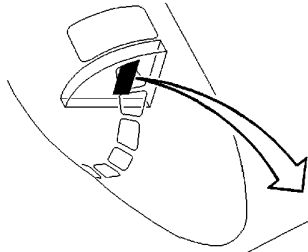
CAG(IGDS)

Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 2 of 11)

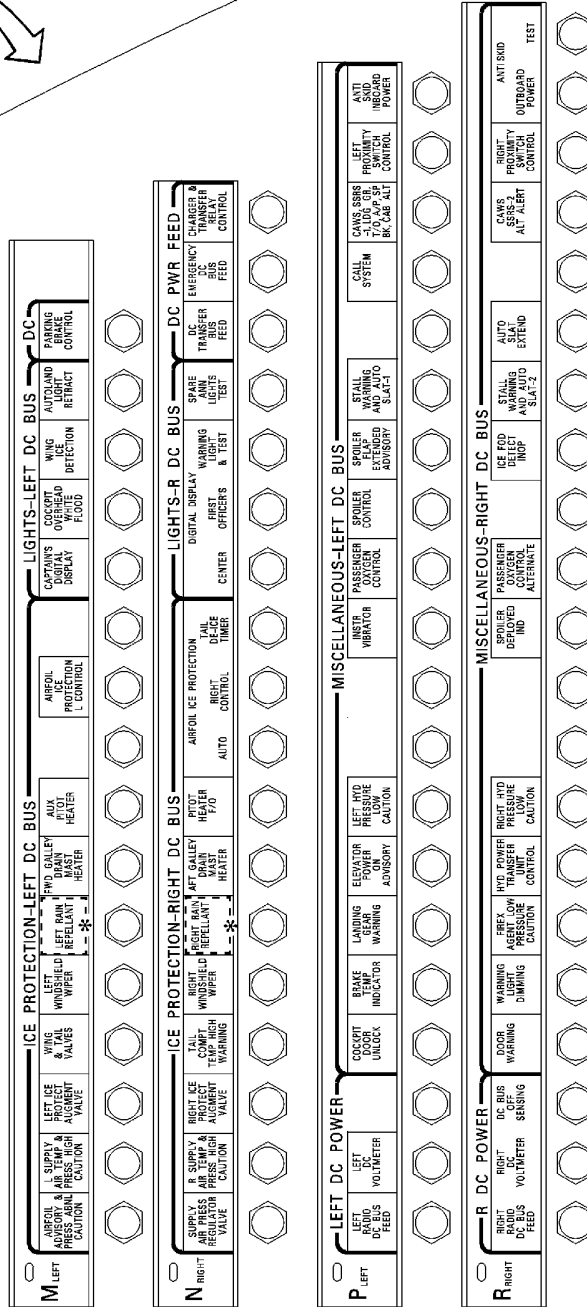
EFFECTIVITY
WJE 406

31-15-02

MD-80 AIRCRAFT MAINTENANCE MANUAL



* NOTE: APPLICABLE TO AIRCRAFT WITHOUT SB 30-76 INCORPORATED



BBB2-31-1829

CAG(IGDS)

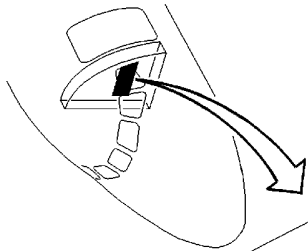
Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 3 of 11)

EFFECTIVITY
WJE 410

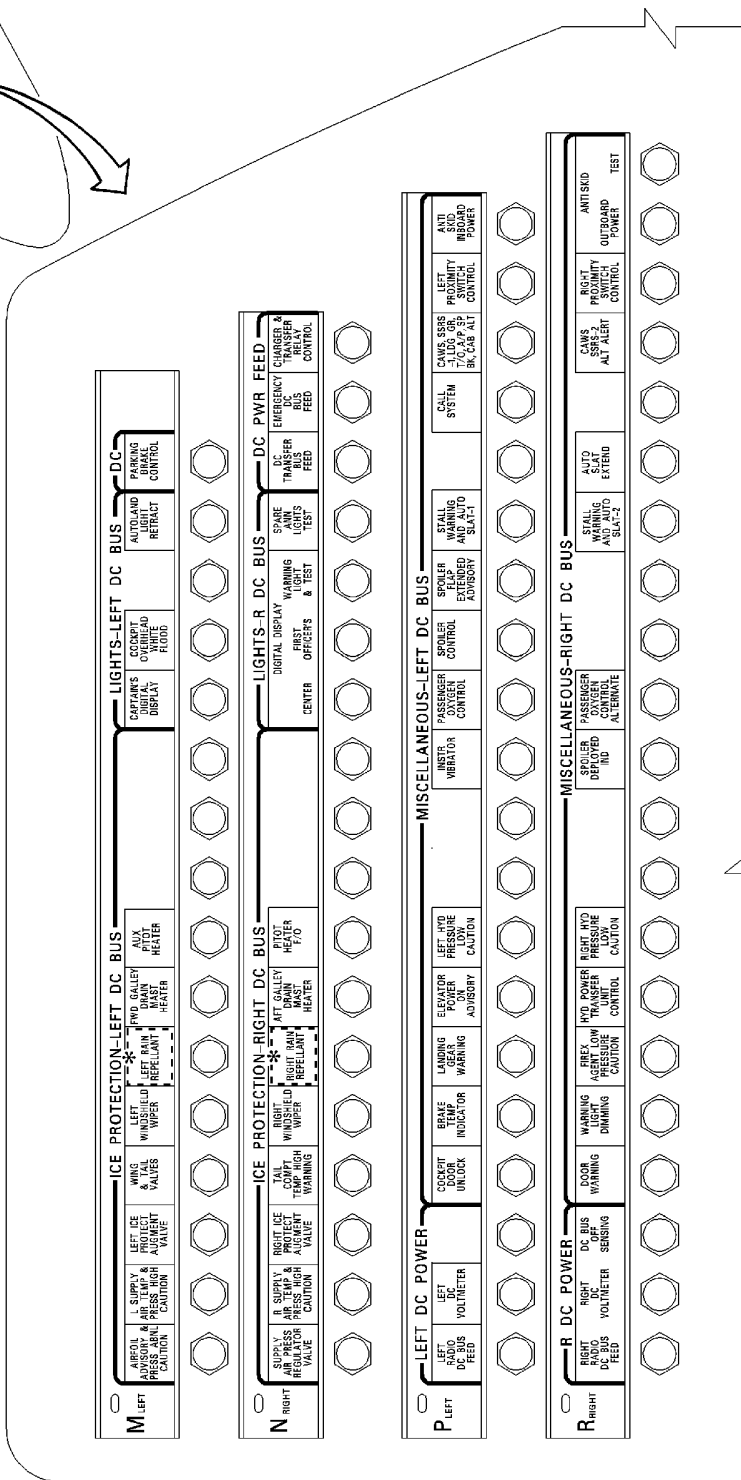
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31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



* NOTE: APPLICABLE TO AIRCRAFT WITHOUT SB 30-76 INCORPORATED



BBB2-31-826B

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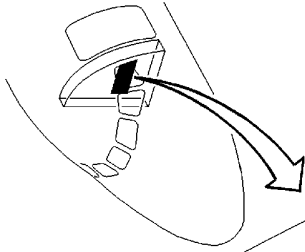
**Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 5 of 11)**

EFFECTIVITY
WJE 886, 887

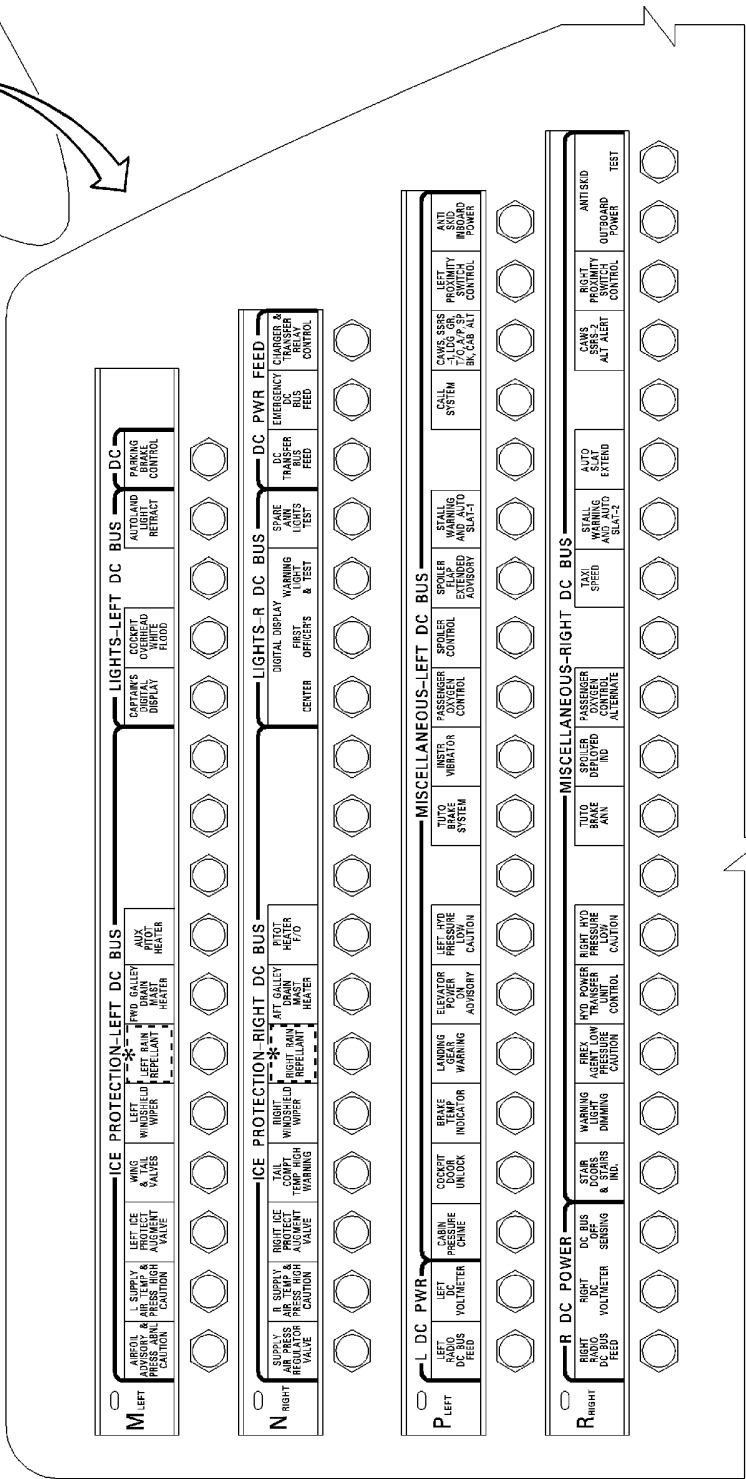
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31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



* NOTE: APPLICABLE TO AIRCRAFT WITHOUT SB 30-76 INCORPORATED



BBB2-31-912A

CAG(I/GDS)

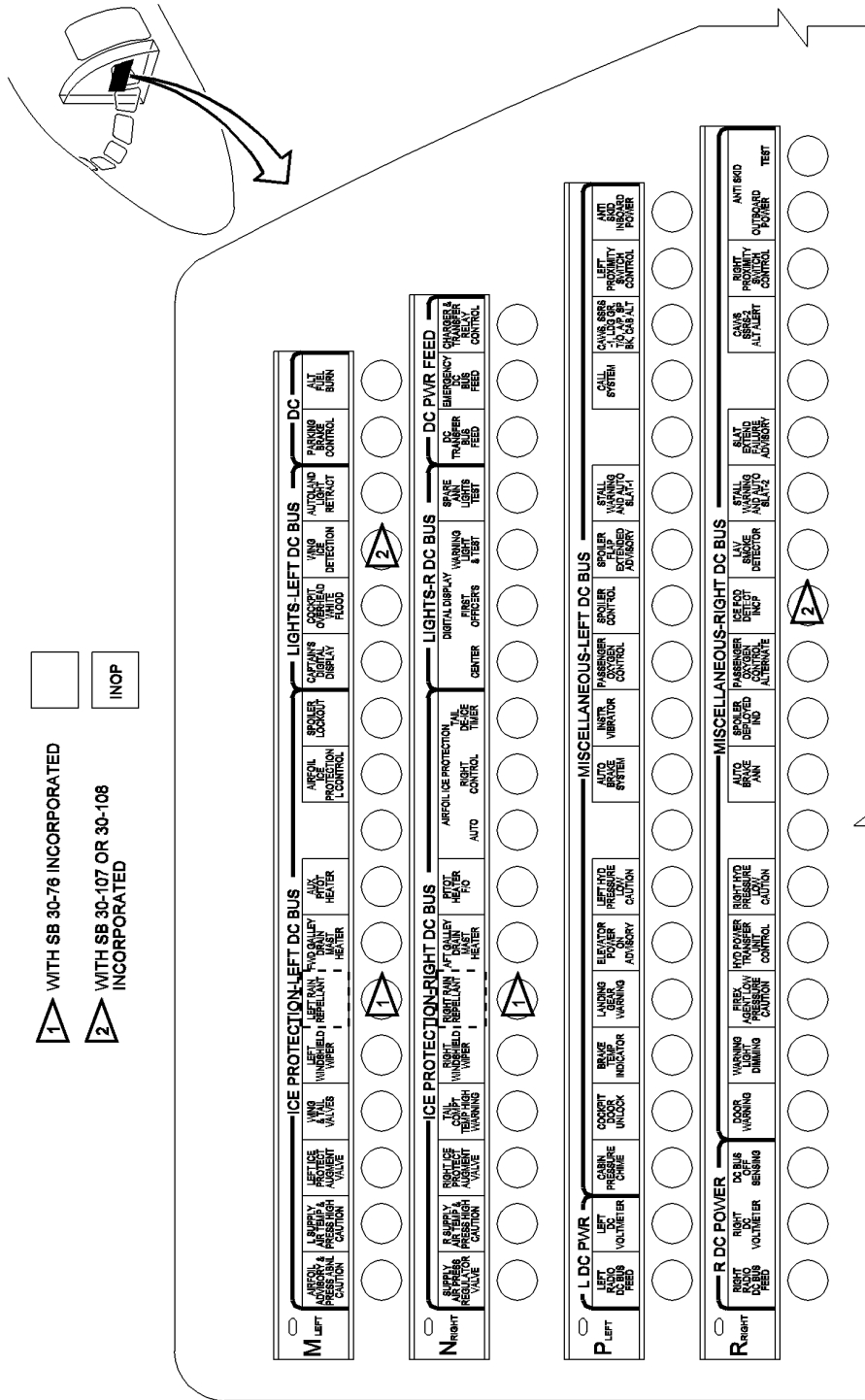
Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 6 of 11)

EFFECTIVITY
WJE 401-404, 412, 414

31-15-02

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 7 of 11)

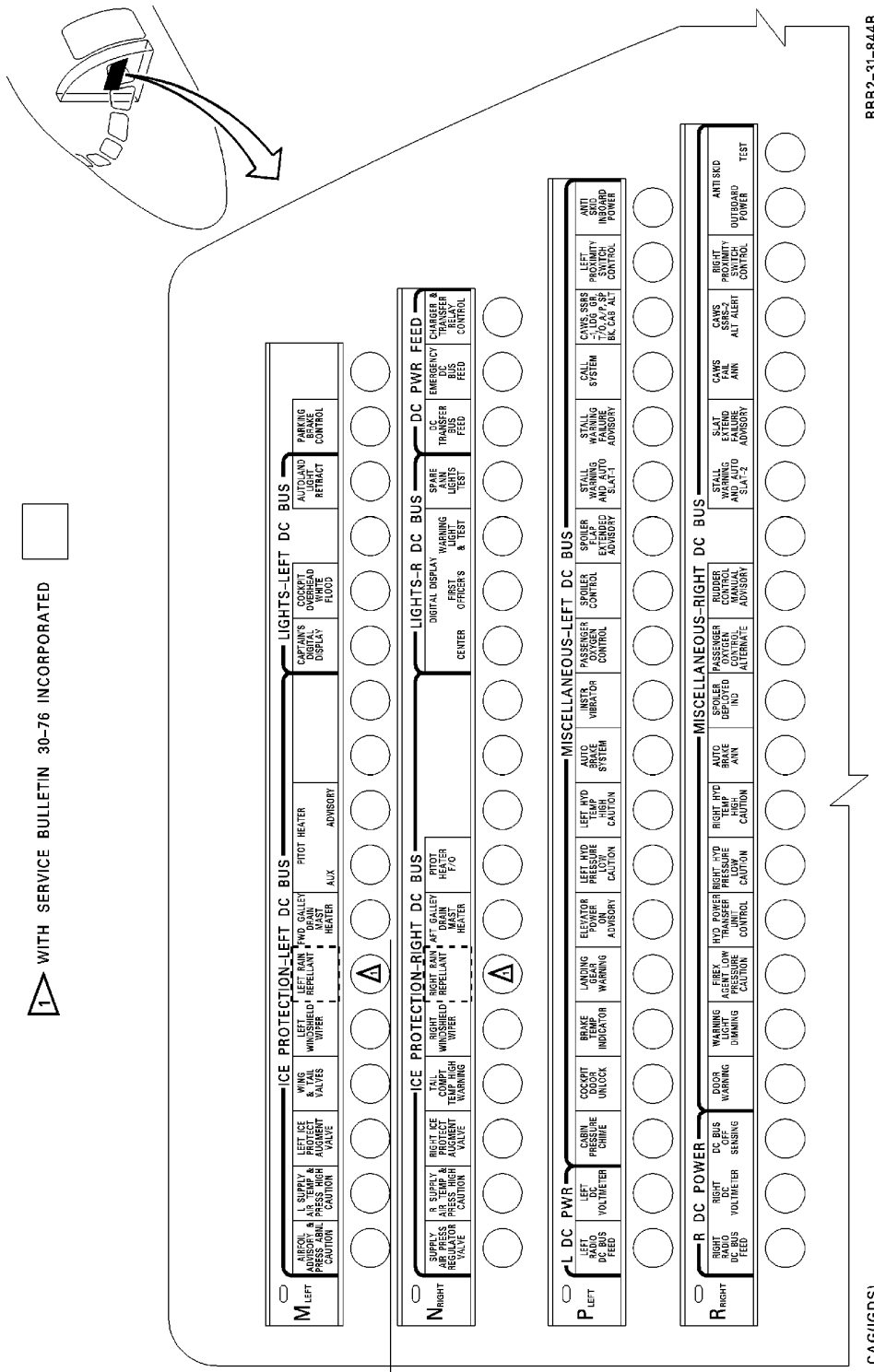
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EFFECTIVITY
WJE 875-879

TP-80MM-WJE

31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



WITH SERVICE BULLETIN 30-76 INCORPORATED

BBB2-31-844B

CAG(IGDS)

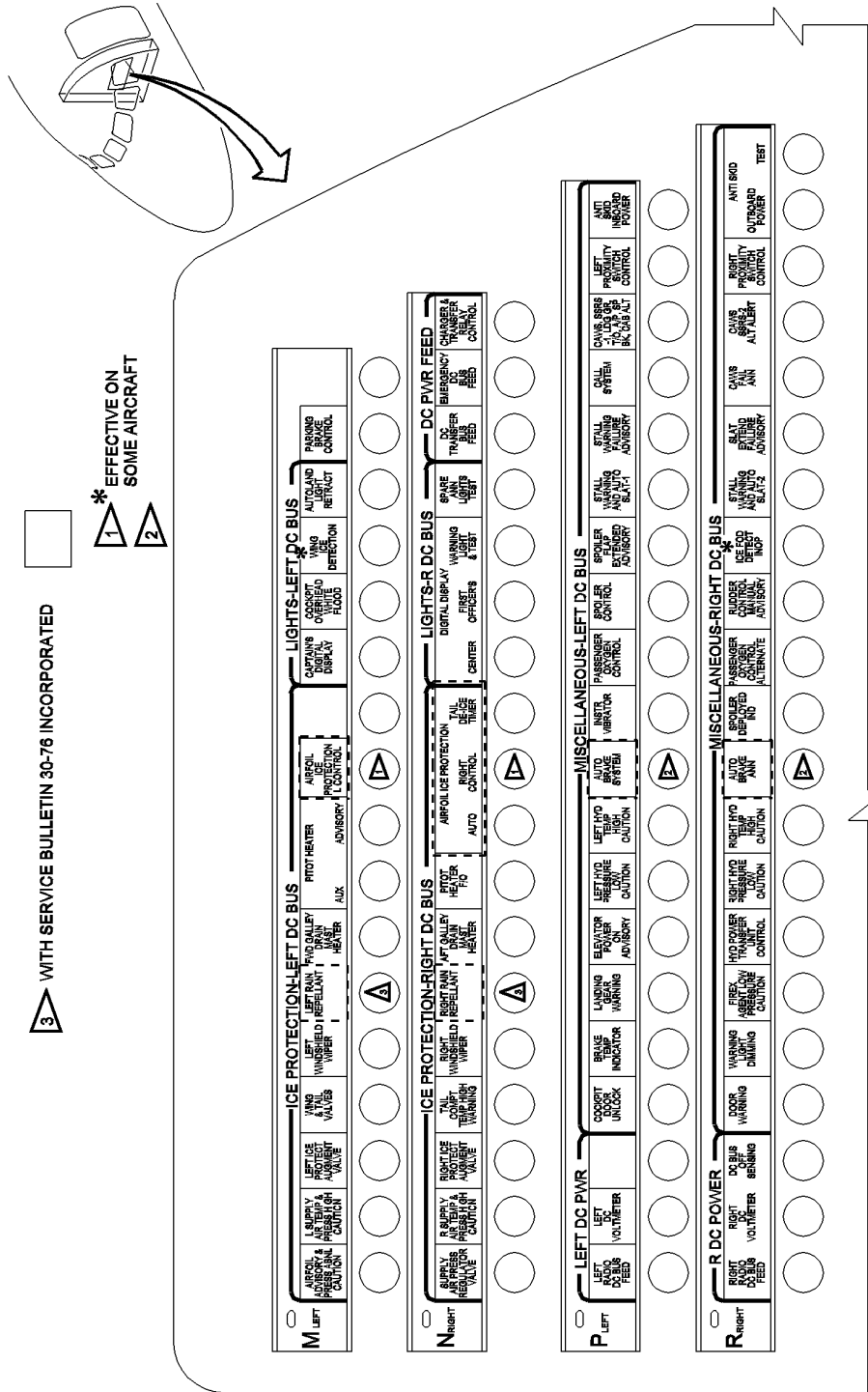
**Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 8 of 11)**

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

TP-80MM-WJE

31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



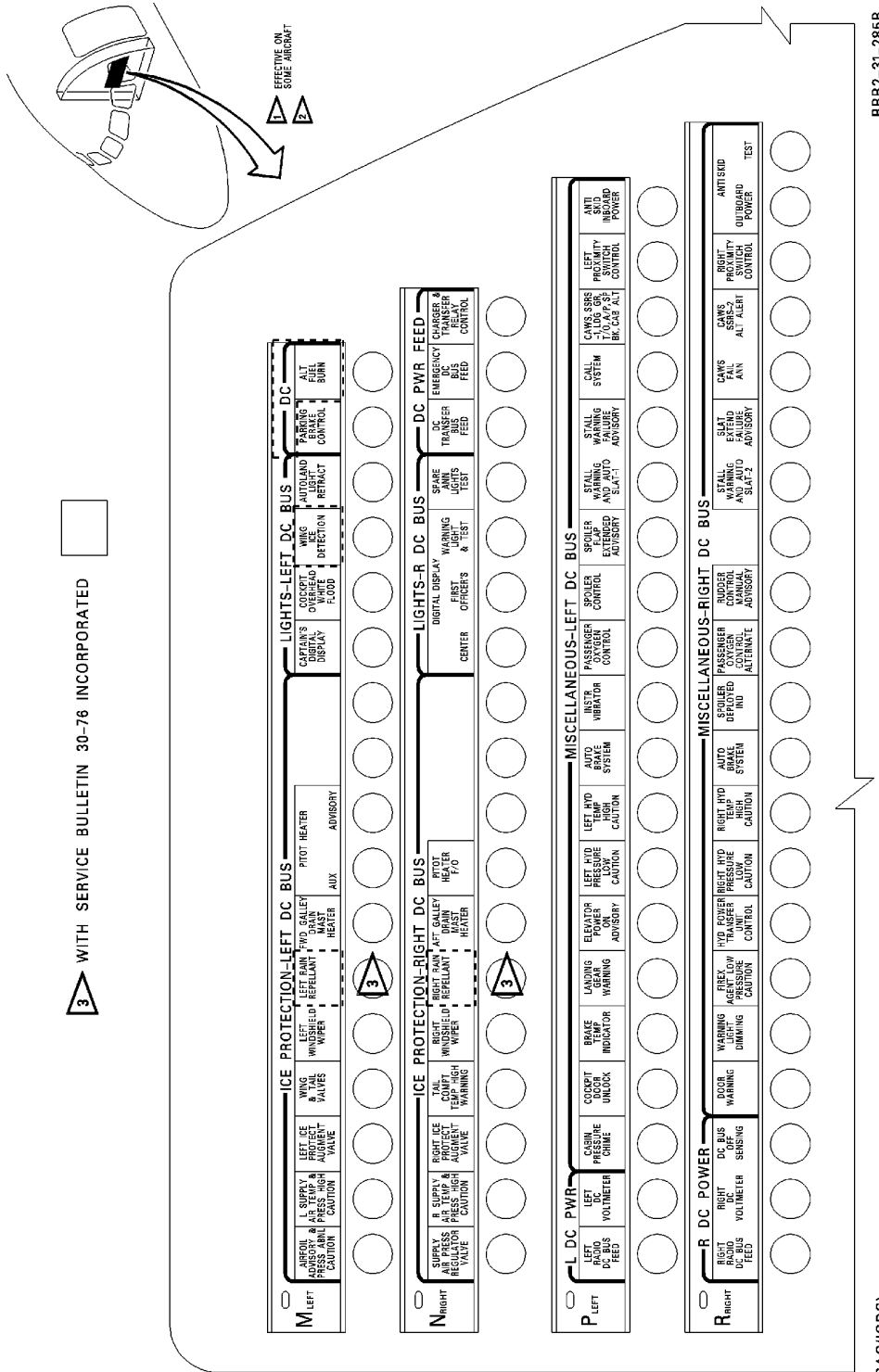
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Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 10 of 11)

EFFECTIVITY
WJE 880

31-15-02

MD-80 AIRCRAFT MAINTENANCE MANUAL



3 WITH SERVICE BULLETIN 30-76 INCORPORATED

Lower EPC Circuit Breaker Panel Row M-R
Figure 1/31-15-02-990-801 (Sheet 11 of 11)

EFFECTIVITY
WJE 407, 408, 411

31-15-02

TP-80MM-WJE

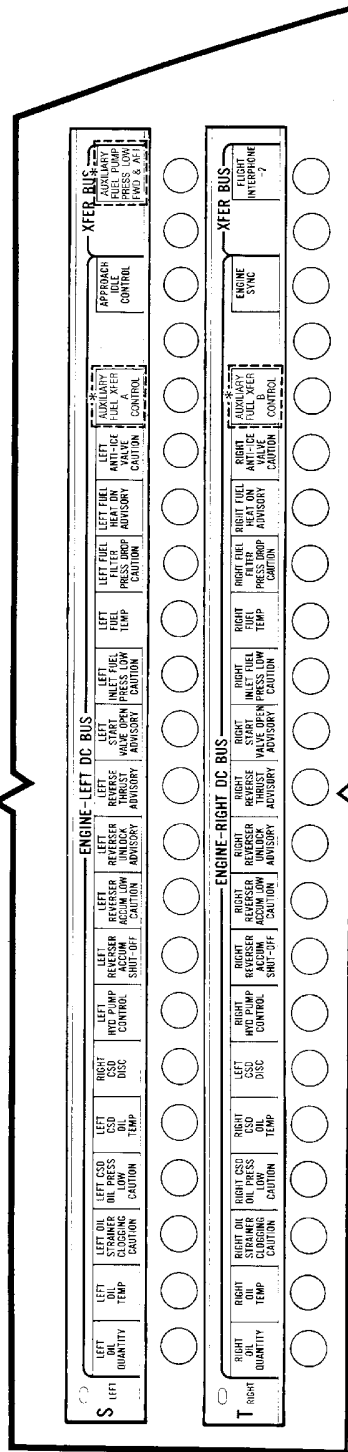
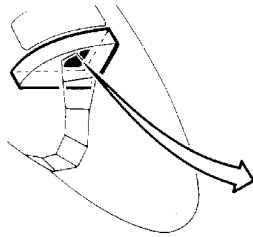
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CAGIGDS)

MD-80 AIRCRAFT MAINTENANCE MANUAL

8682-31-848

* EFFECTIVE ON
SOME AIRCRAFT

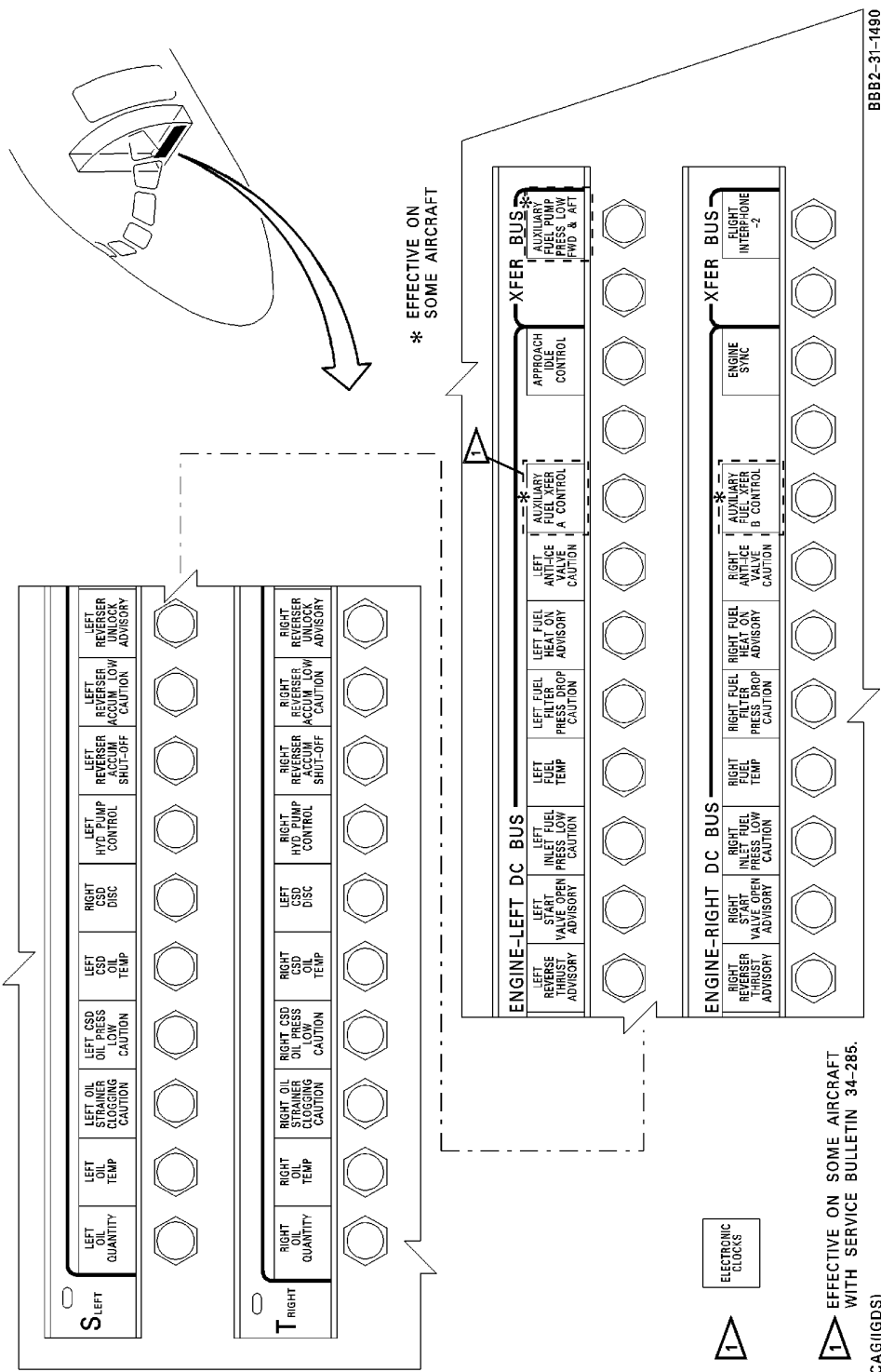


Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 1 of 11)

EFFECTIVITY
WJE 873, 874, 892, 893

31-15-02

MD-80 AIRCRAFT MAINTENANCE MANUAL



Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 2 of 11)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

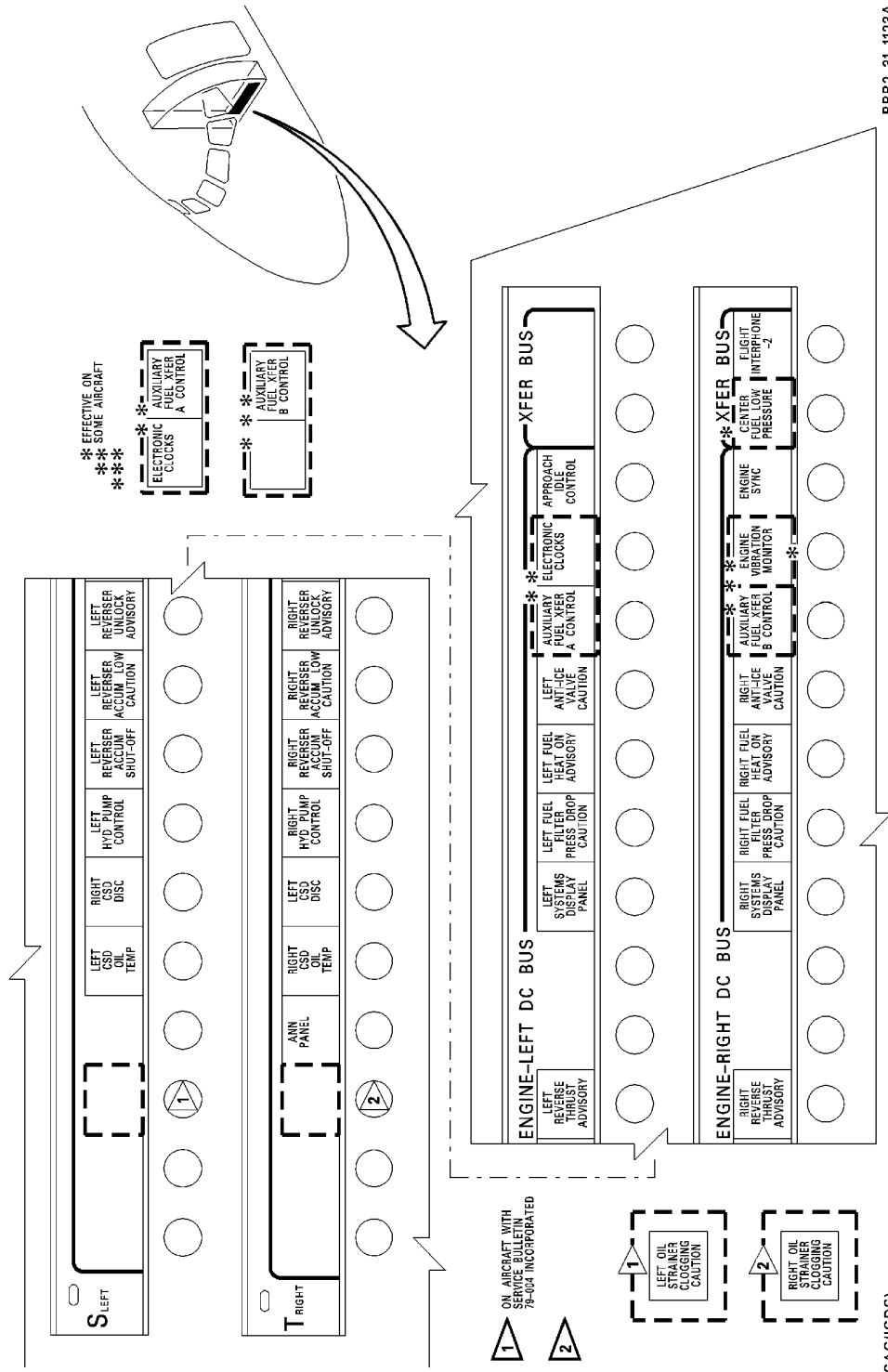
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BBB2-31-1123A

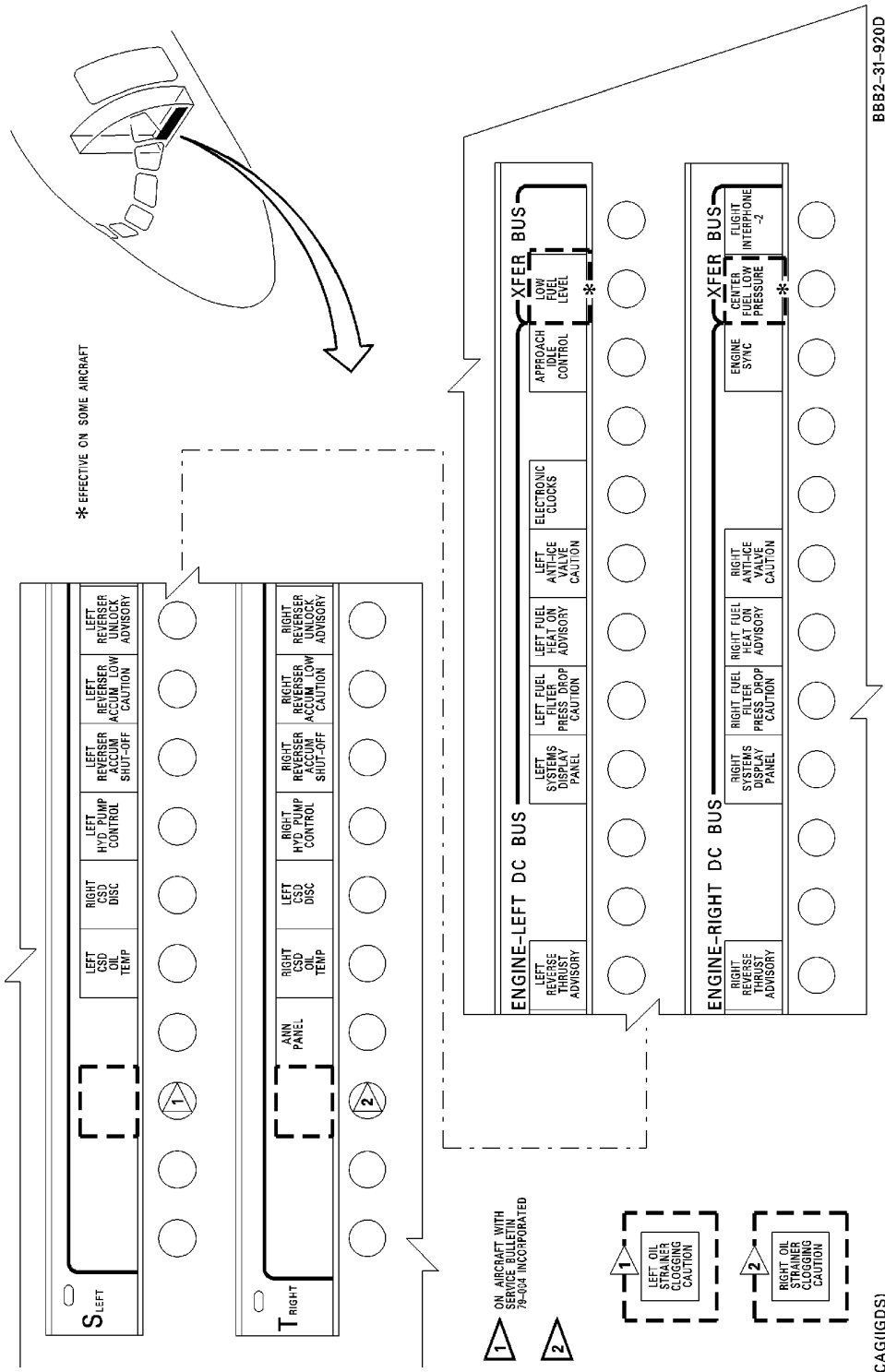
CAG(I/GDS)

**Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 3 of 11)**

EFFECTIVITY
WJE 406

31-15-02

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Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 4 of 11)

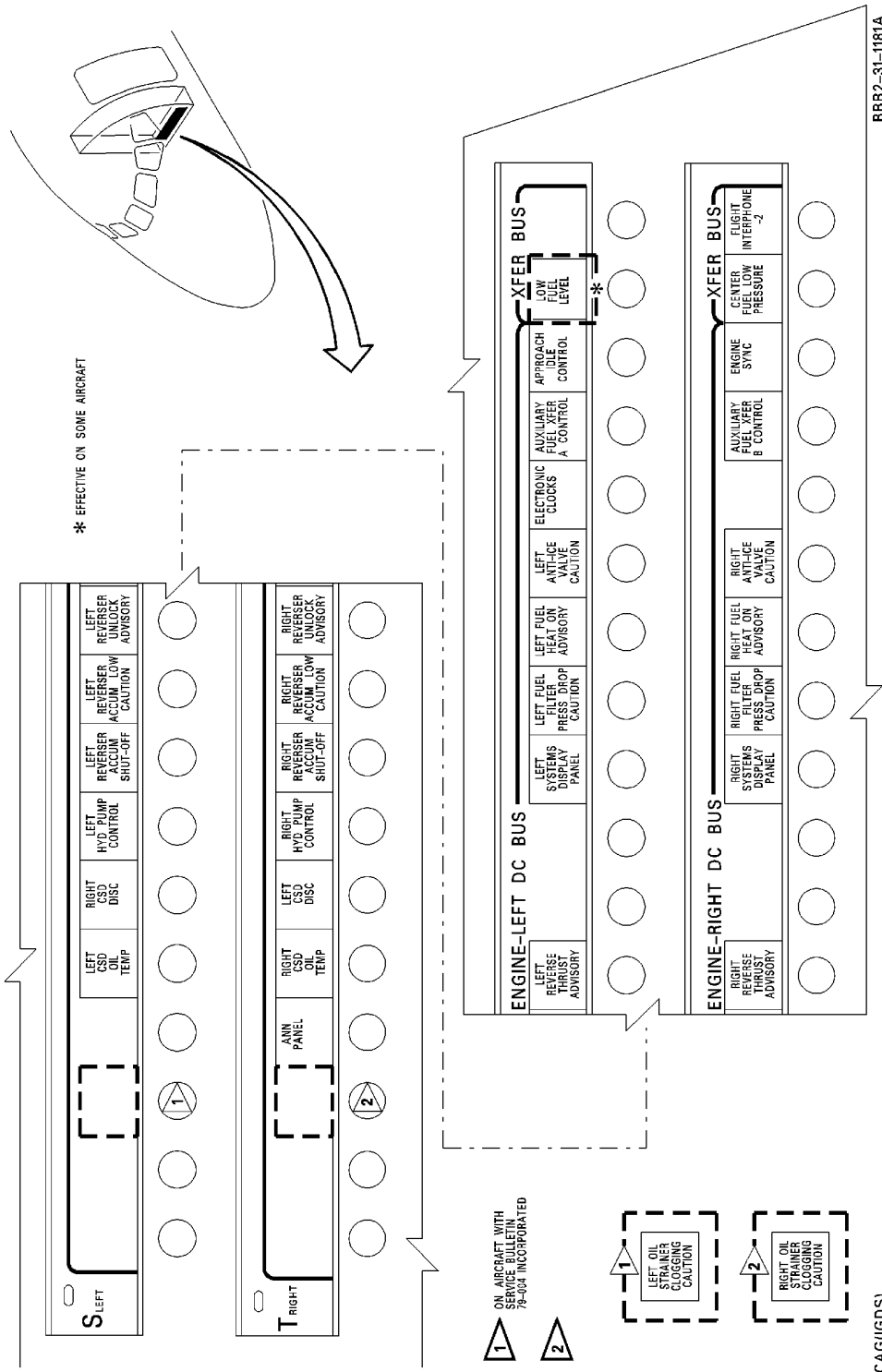
EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

31-15-02

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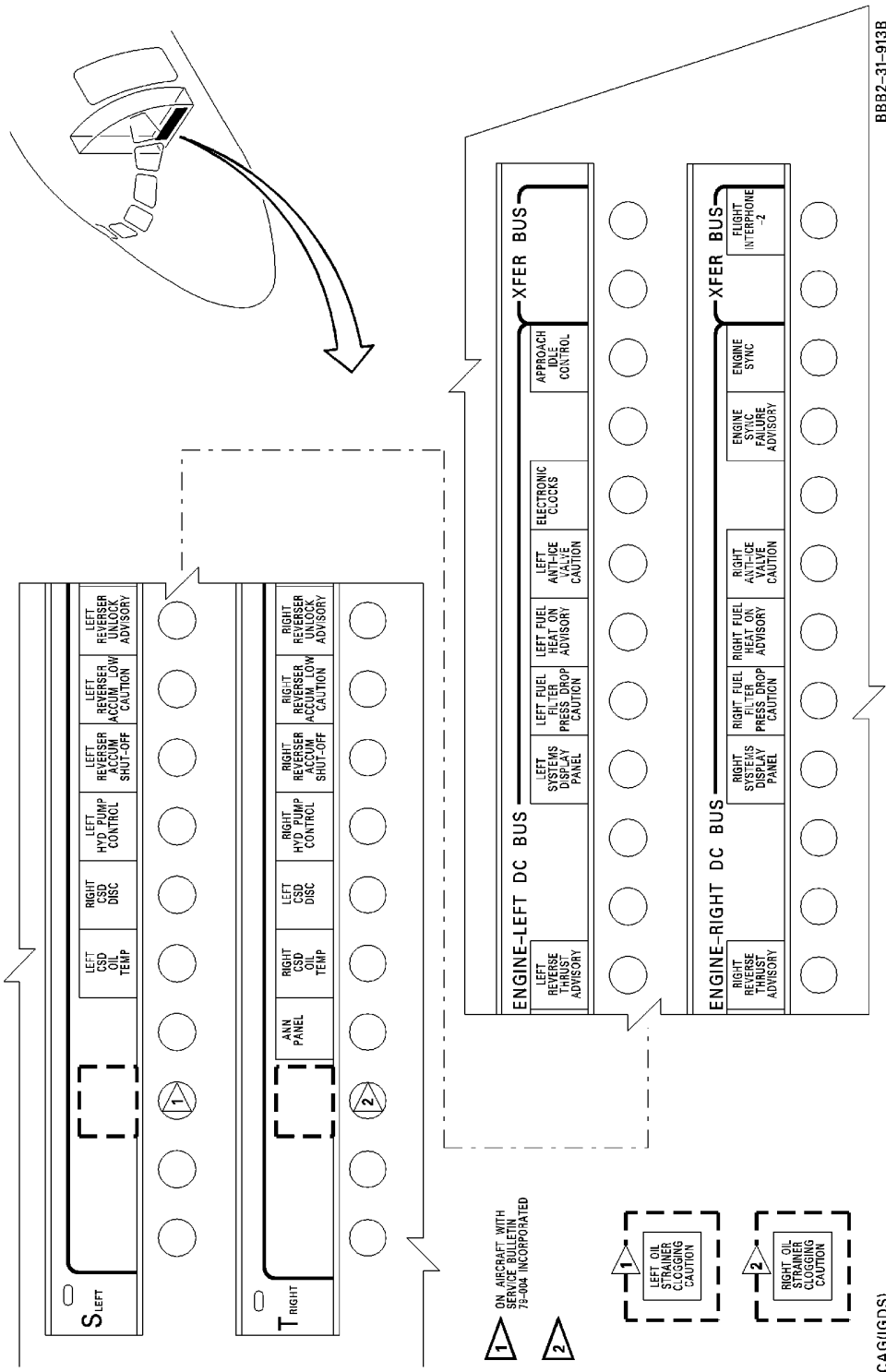
Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 5 of 11)

EFFECTIVITY
WJE 410

31-15-02

TP-80MM-WJE

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Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 6 of 11)

EFFECTIVITY
WJE 401-404, 412, 414

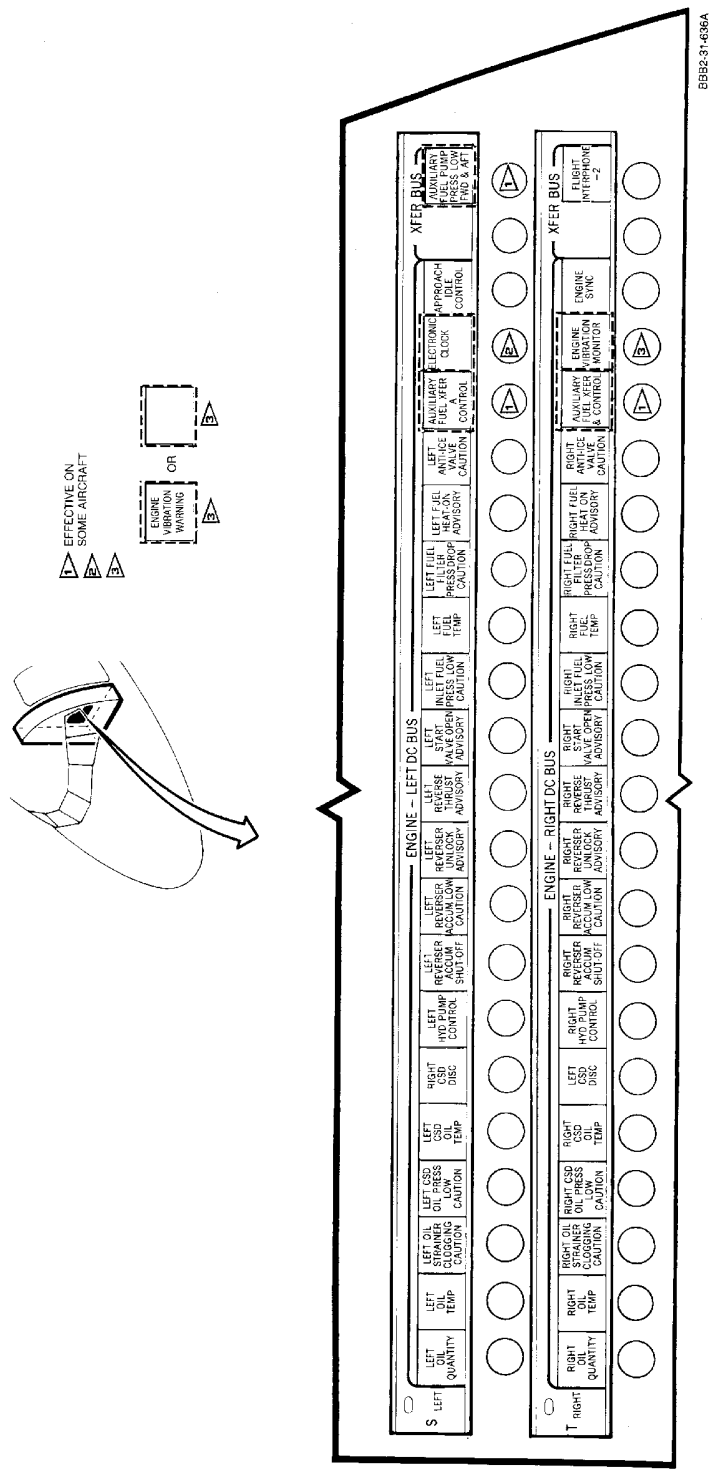
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TP-80MM-WJE

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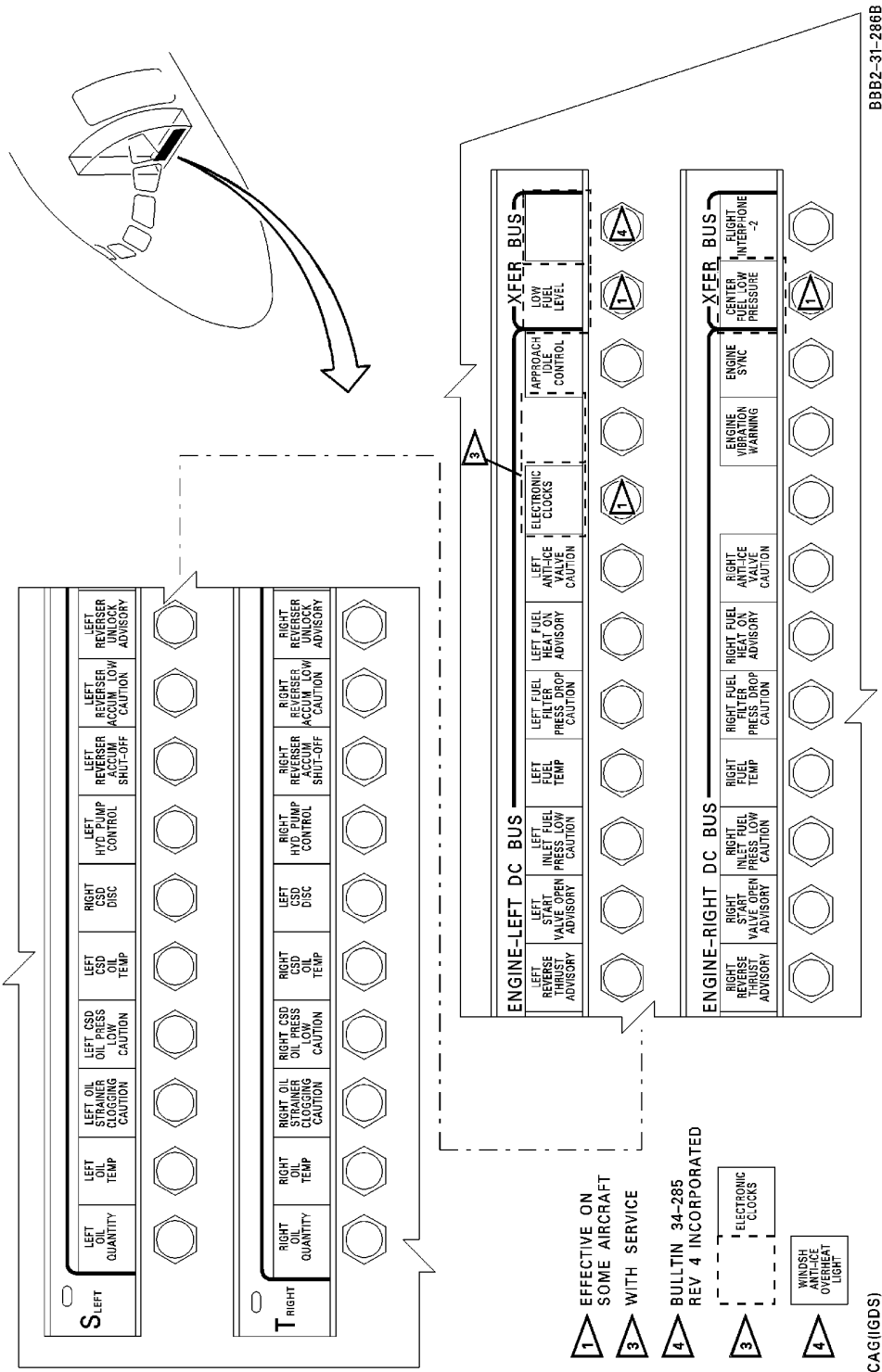


Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 7 of 11)

EFFECTIVITY
WJE 880

31-15-02

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BBB2-31-286B

Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 8 of 11)

EFFECTIVITY
WJE 407, 408, 411

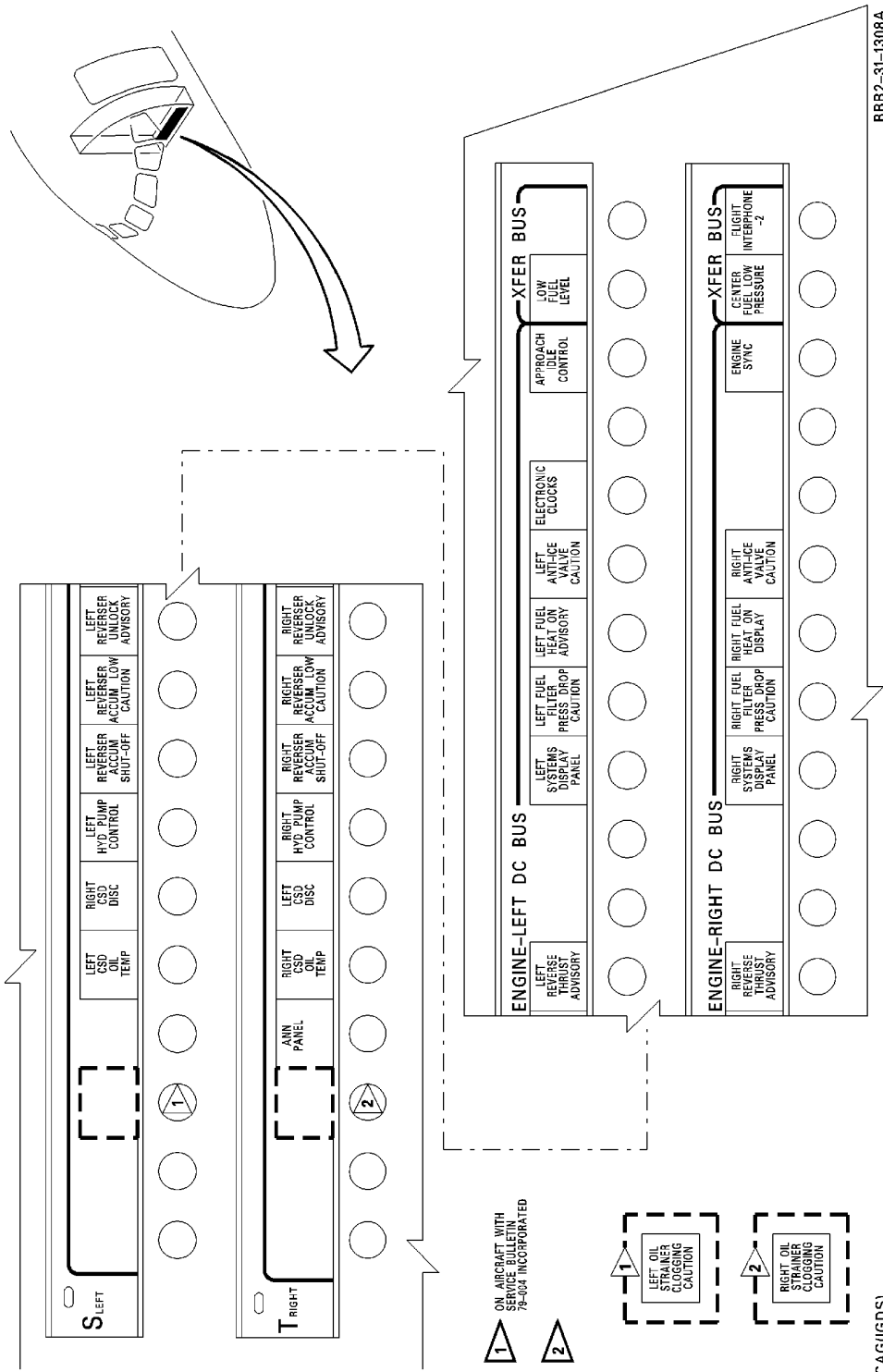
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Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 9 of 11)

EFFECTIVITY
WJE 875-879

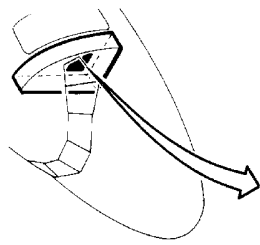
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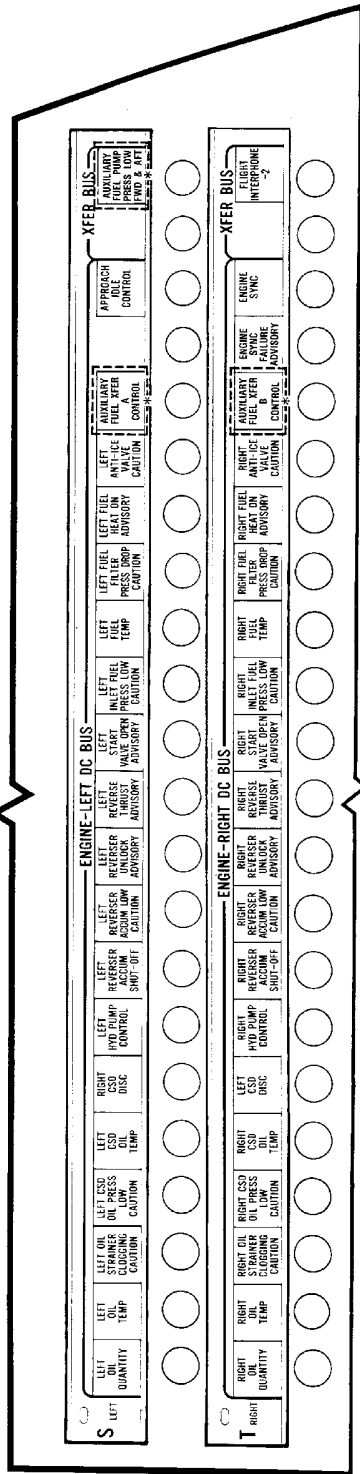
Page 21
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BB62-31-845A



* EFFECTIVE ON SOME AIRCRAFT



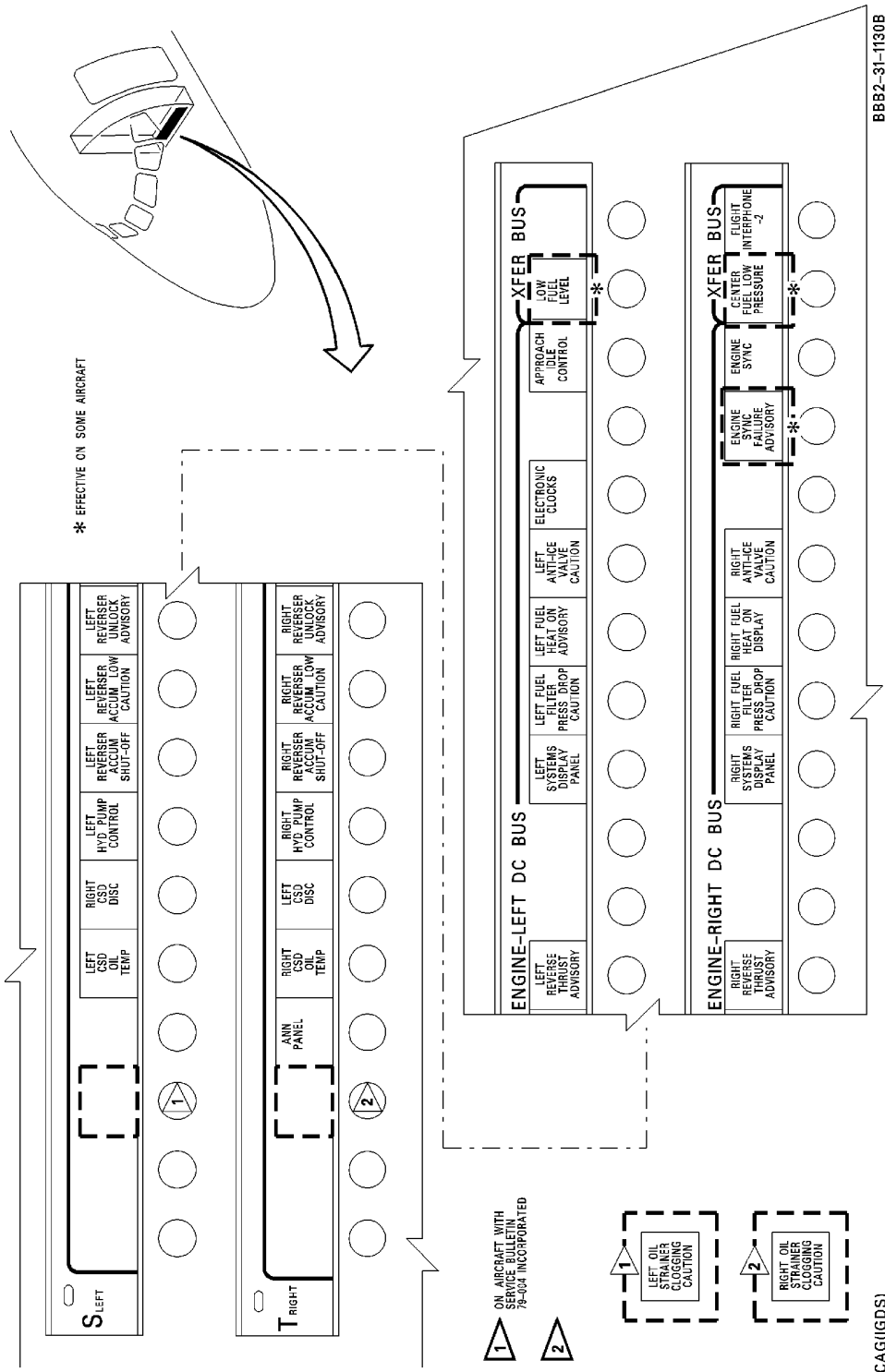
**Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 10 of 11)**

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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TP-80MM-WJE

**MD-80
AIRCRAFT MAINTENANCE MANUAL**



**Lower EPC Circuit Breaker Panel Row S-T
Figure 2/31-15-02-990-802 (Sheet 11 of 11)**

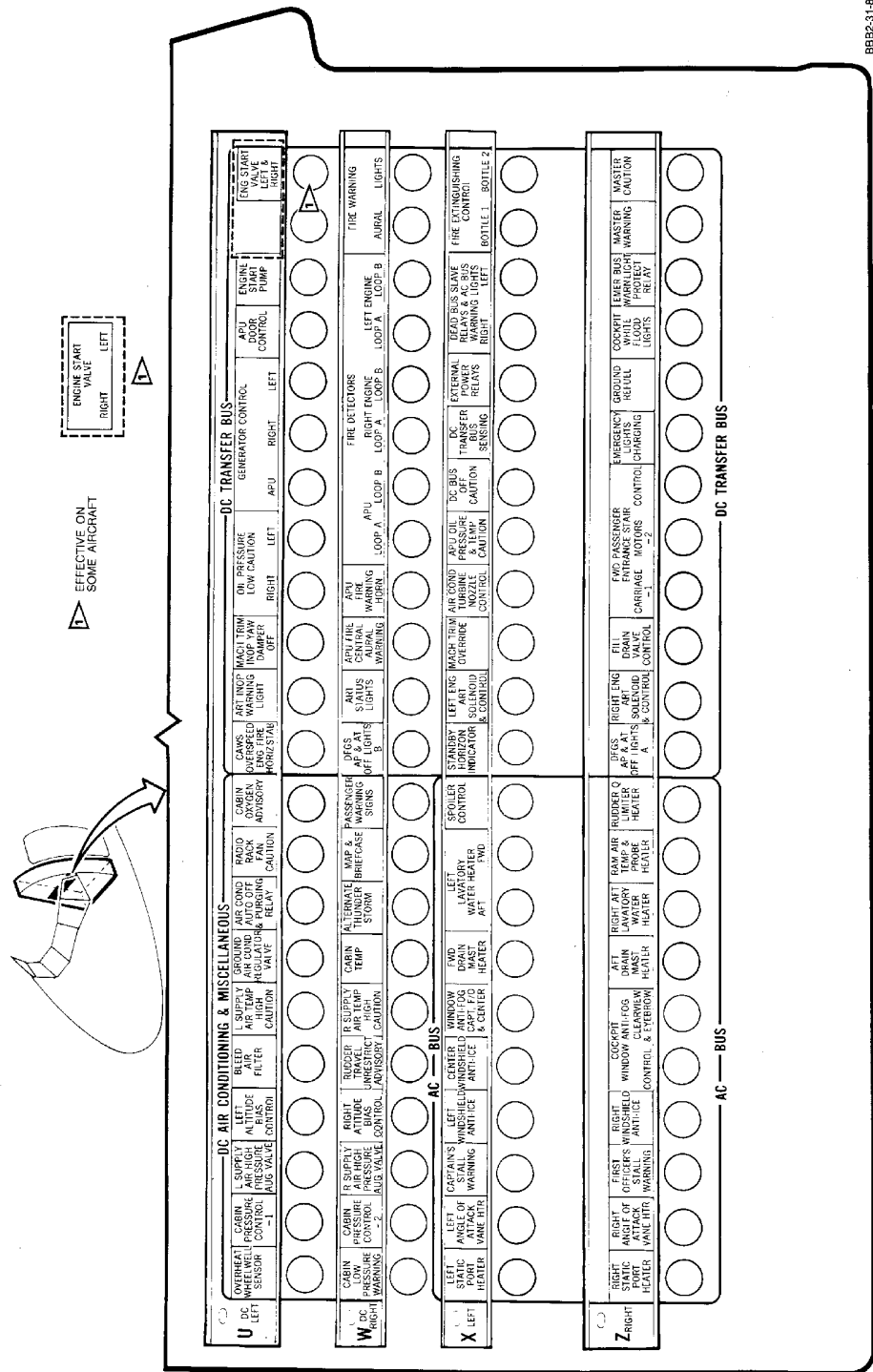
EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

31-15-02

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

BBB2-31-850



Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 1 of 8)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

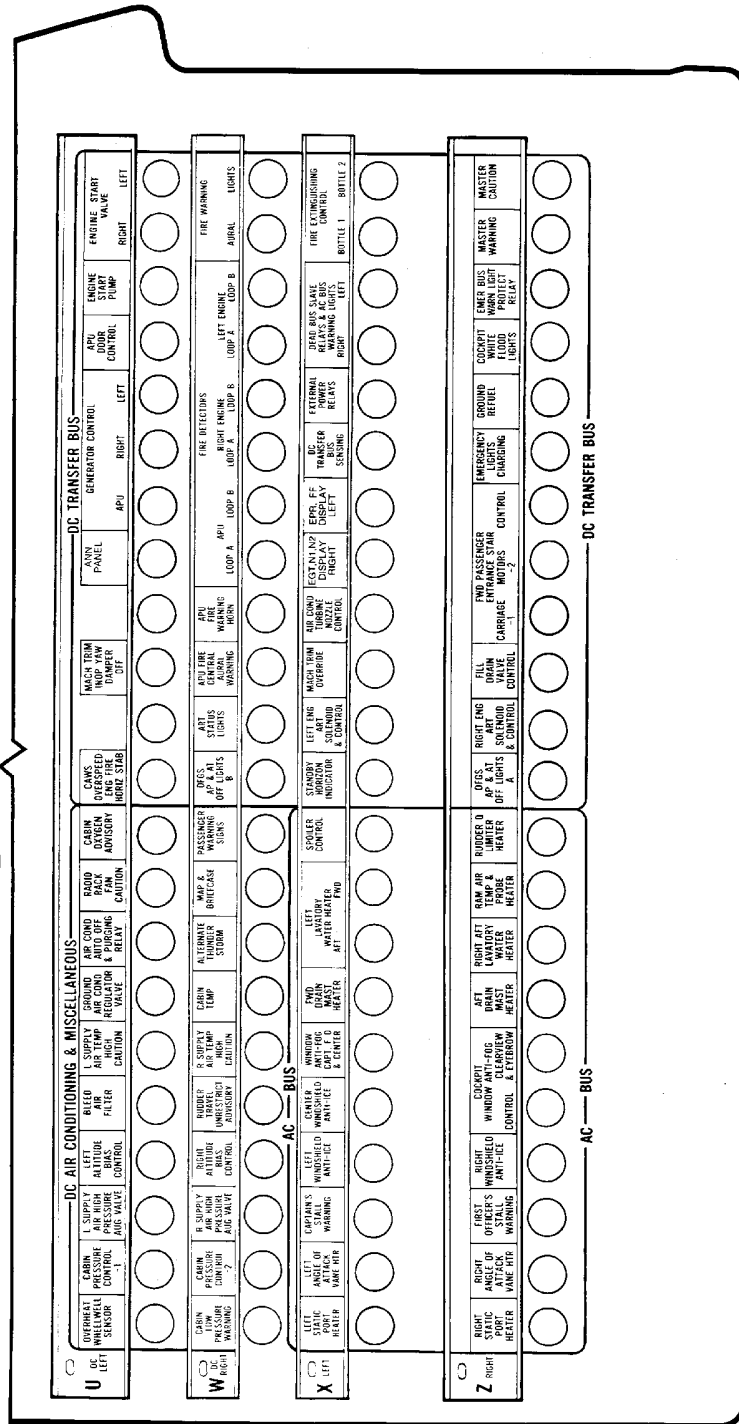
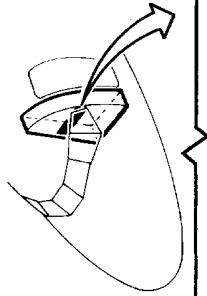
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TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL

BBB2-31-1030



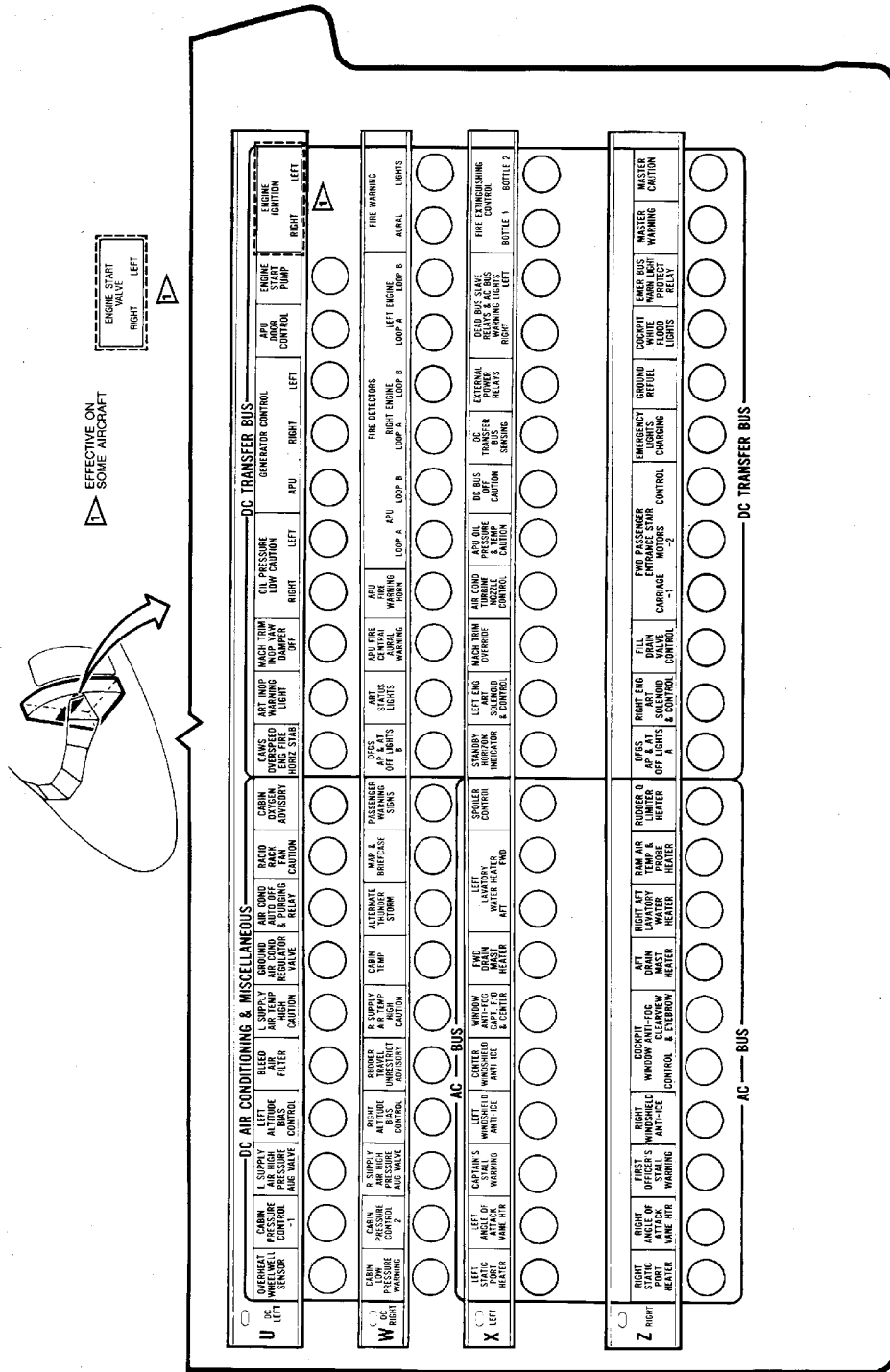
Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 2 of 8)

EFFECTIVITY
WJE 406, 410, 886, 887

31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**

BB02-31-1022



Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 3 of 8)

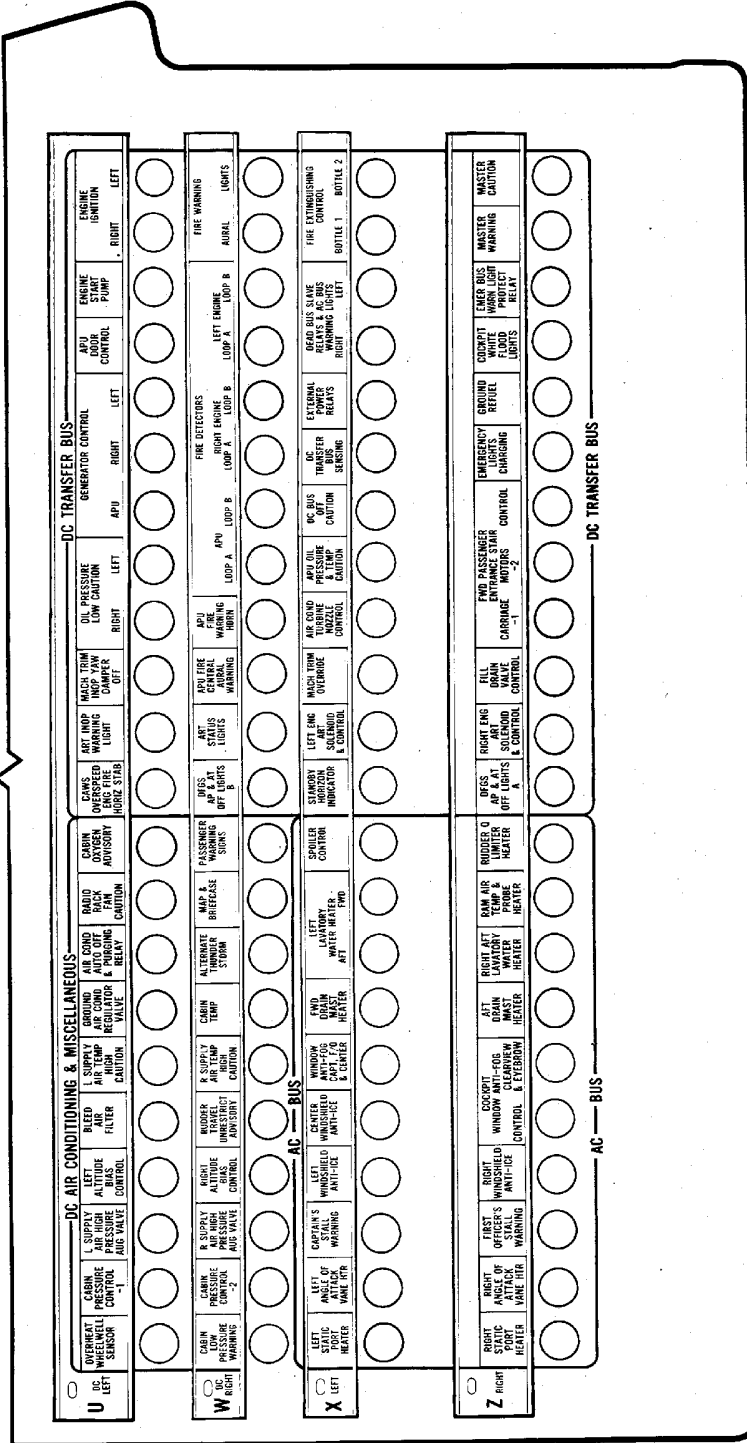
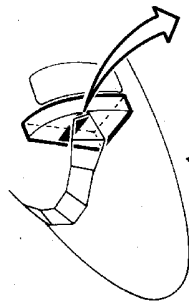
EFFECTIVITY
WJE 873, 874, 892, 893

TP-80MM-WJE

31-15-02

**MD-80
AIRCRAFT MAINTENANCE MANUAL**

BB82-31-333



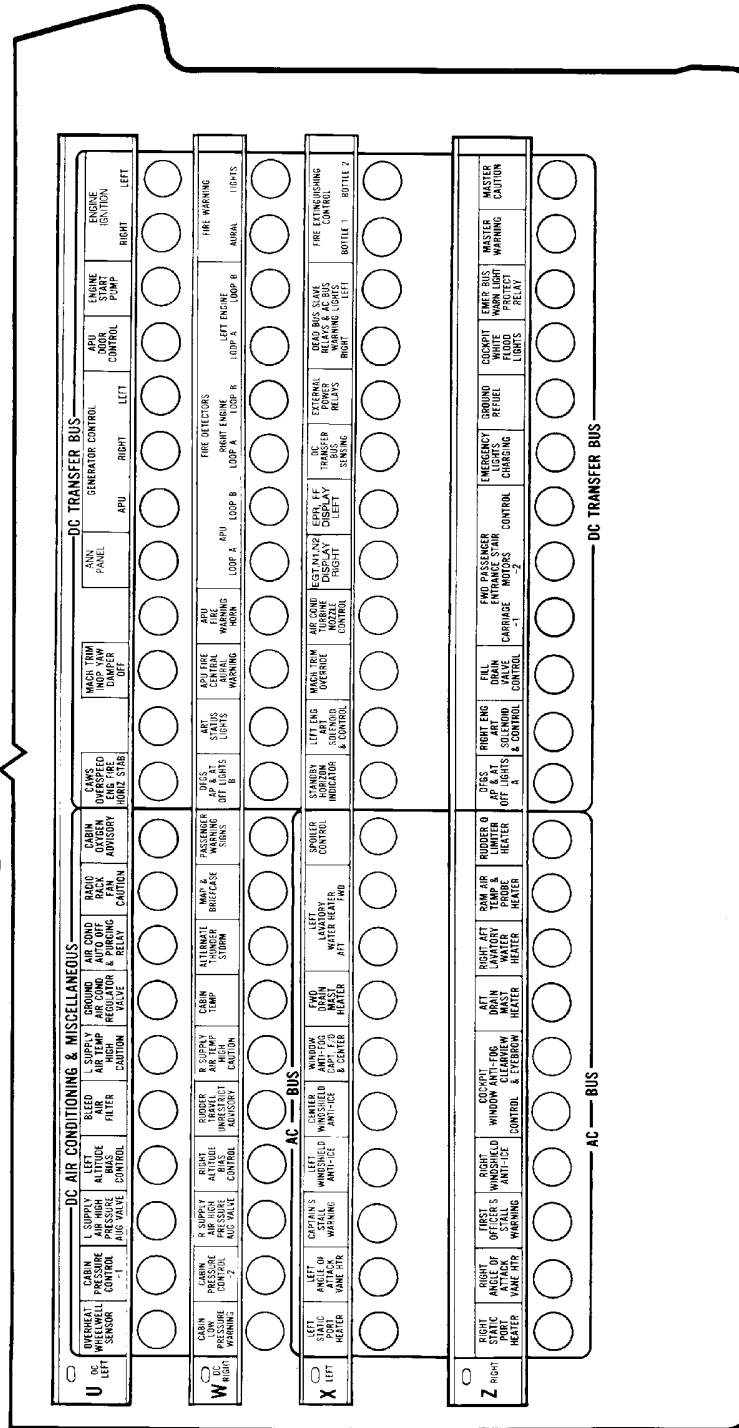
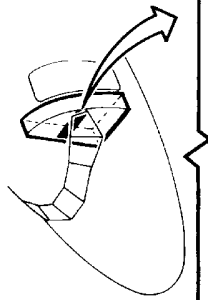
Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 4 of 8)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-15-02

MD-80 AIRCRAFT MAINTENANCE MANUAL

BB02-31-1131



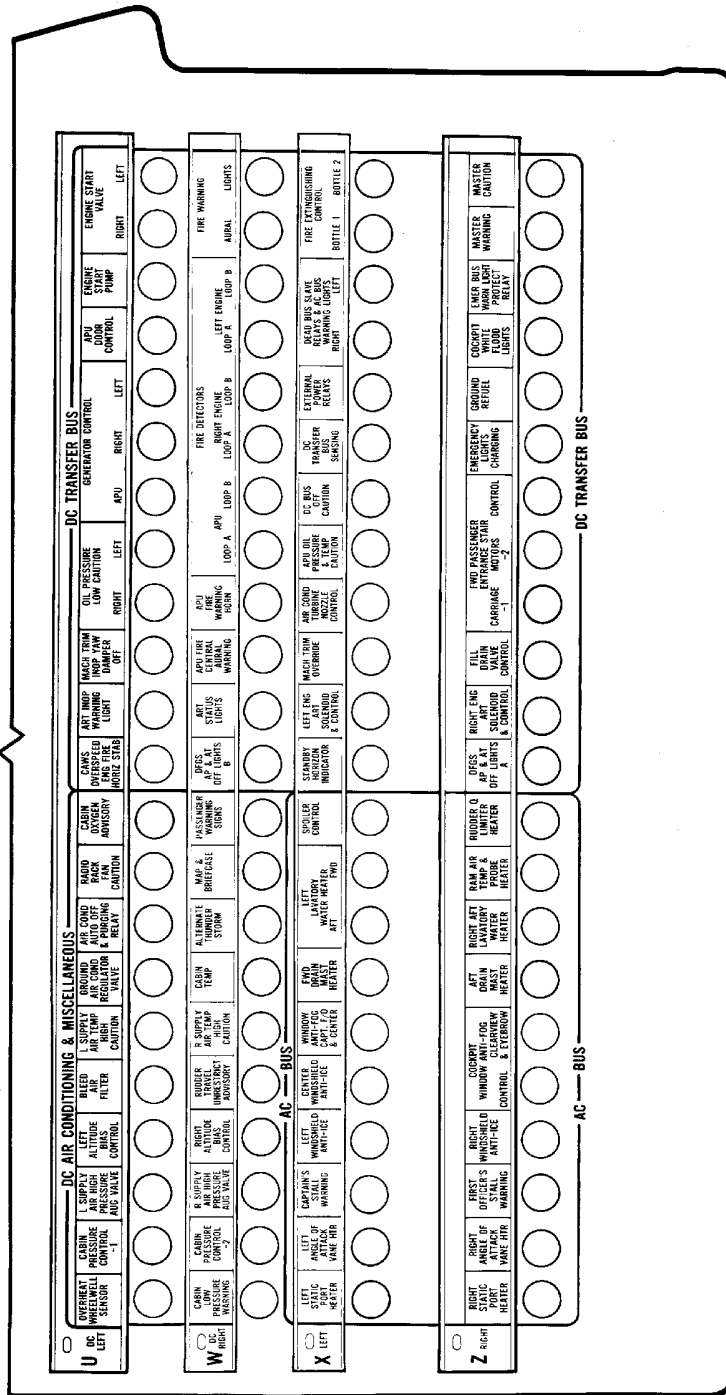
Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 5 of 8)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

31-15-02

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8862-31-319



Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 6 of 8)

EFFECTIVITY
WJE 407, 408, 411, 880

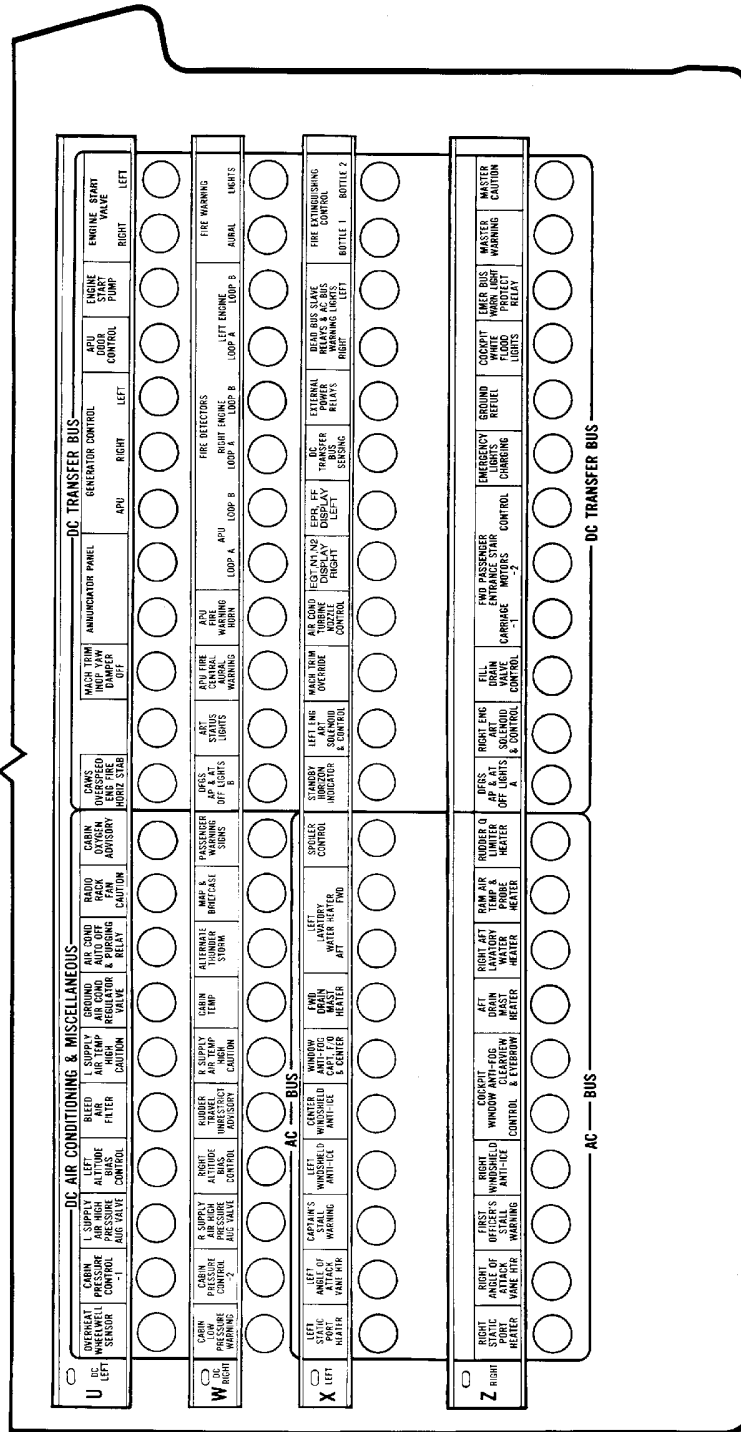
31-15-02

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TP-80MM-WJE

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BB52-31-914



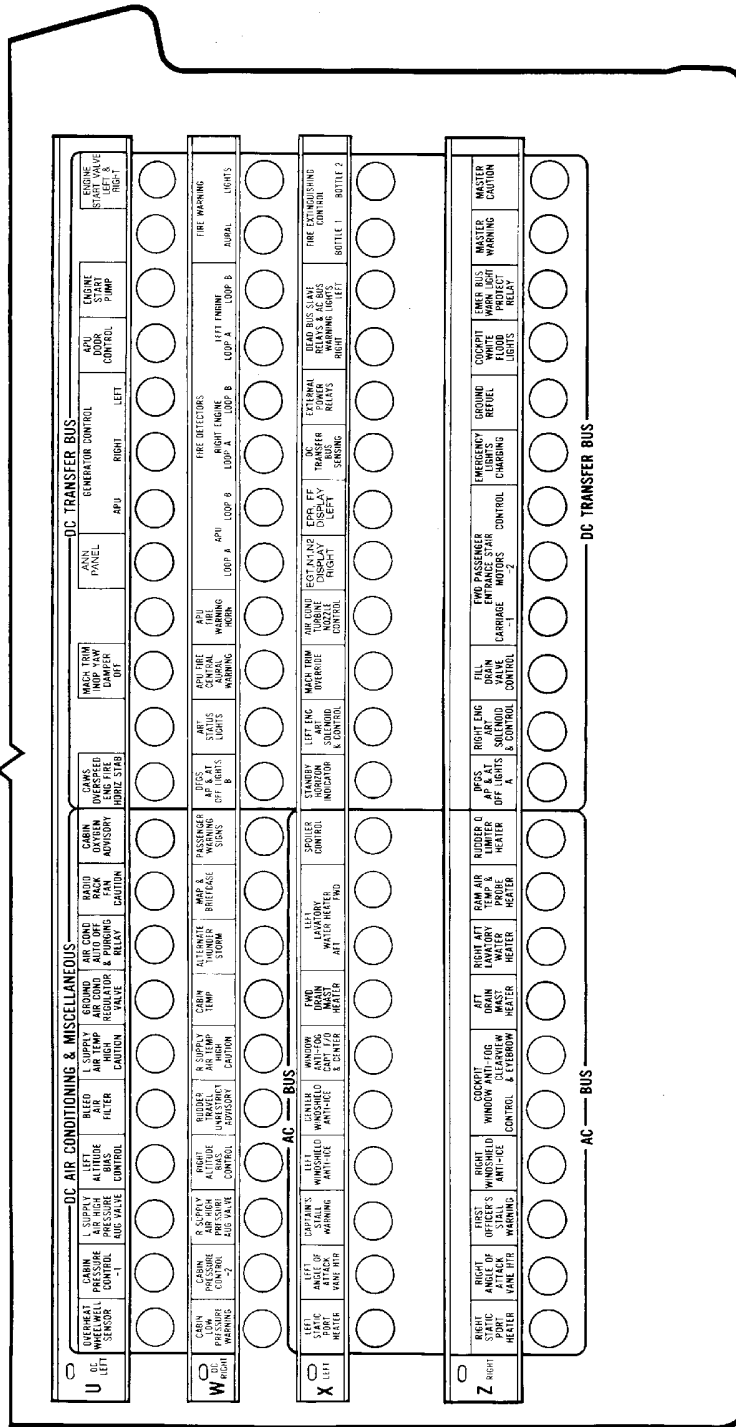
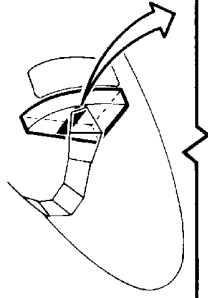
Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 7 of 8)

EFFECTIVITY
WJE 401-404, 412, 414

31-15-02

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BBEC-31-1233



Lower EPC Circuit Breaker Panel Row U-Z
Figure 3/31-15-02-990-803 (Sheet 8 of 8)

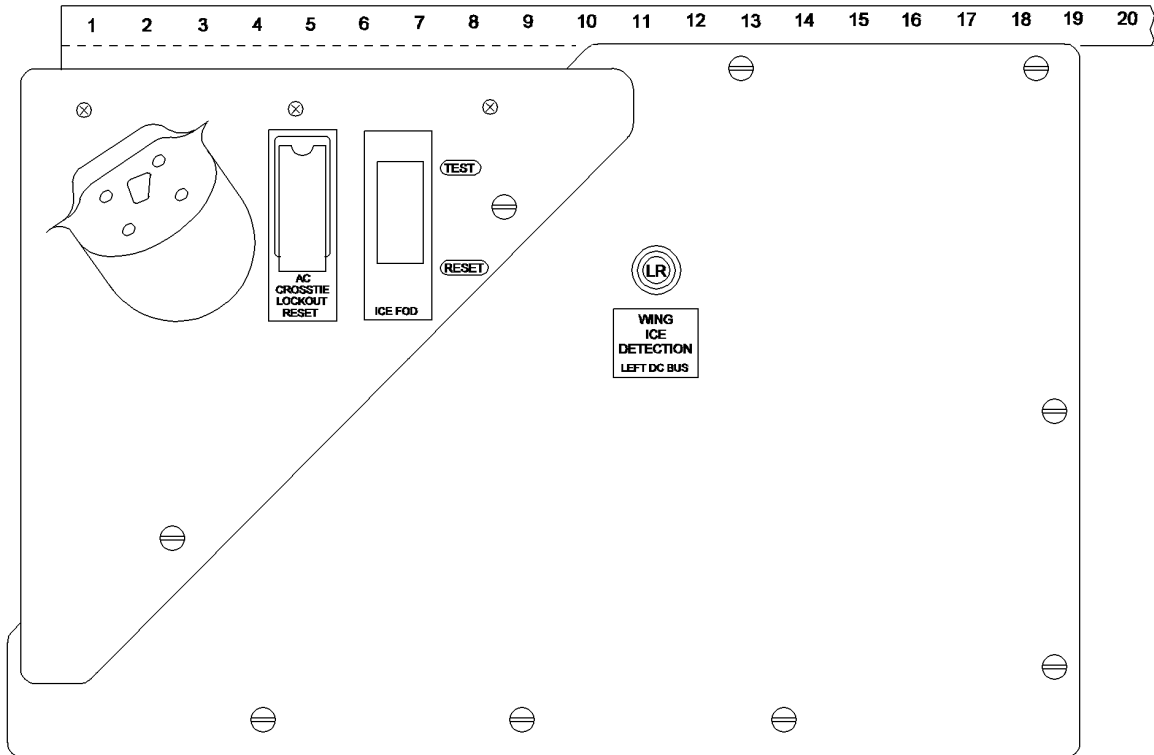
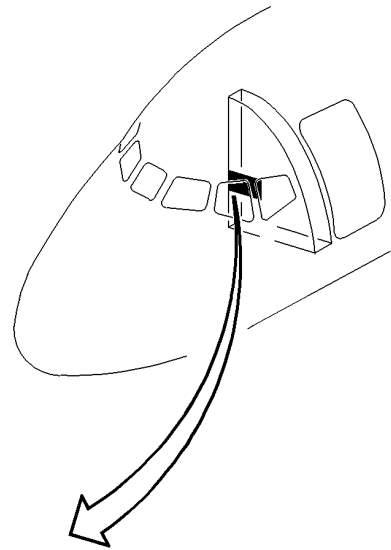
EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



BBB2-31-1880
S0000146515V1

**Electrical Power Center Panel
Figure 4/31-15-02-990-821**

EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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EPC GENERATOR BUS CIRCUIT BREAKER PANEL - DESCRIPTION AND OPERATION

1. General

A. The EPC generator bus circuit breaker panel is a unit of the EPC panel.

2. Description

A. The EPC generator bus circuit breaker panel provides a mounting base for galley power, heat exchanger cooling, ground service bus power, primary longitudinal trim, AC bus, AC bus sensing and auxiliary hydraulic pump circuit breakers.

3. Operation

A. To open a circuit, pull the applicable circuit breaker. To close a circuit, press the applicable circuit breaker.

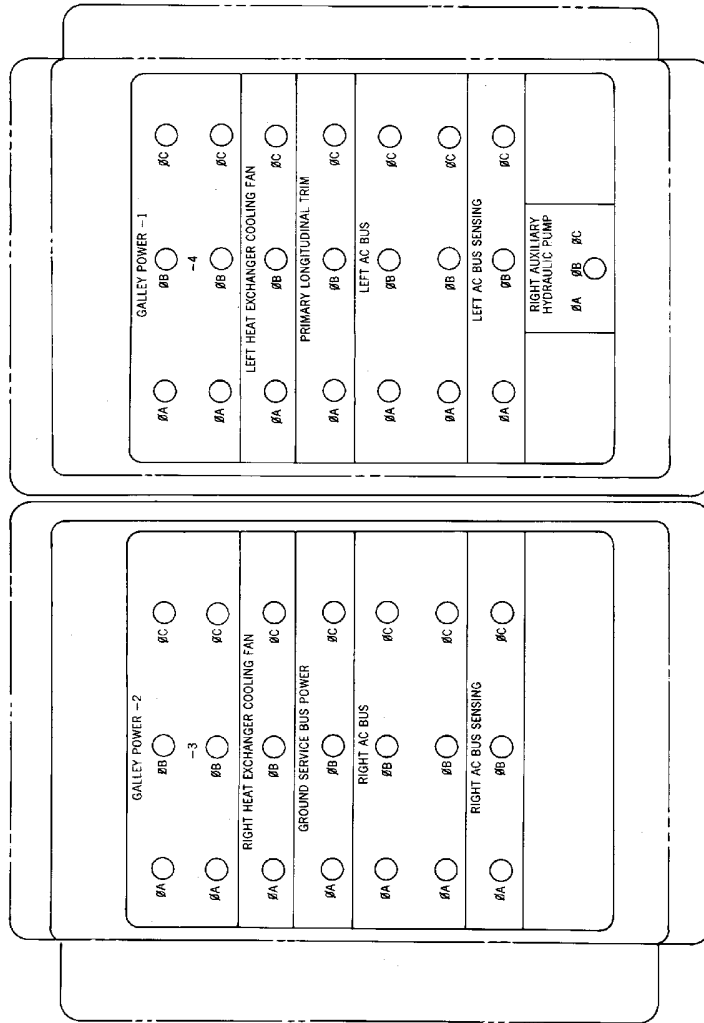
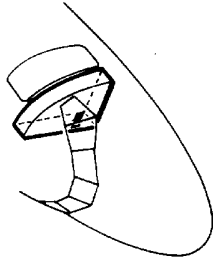
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-15-03

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AIRCRAFT MAINTENANCE MANUAL



BBB2-31-195

EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 1 of 6)

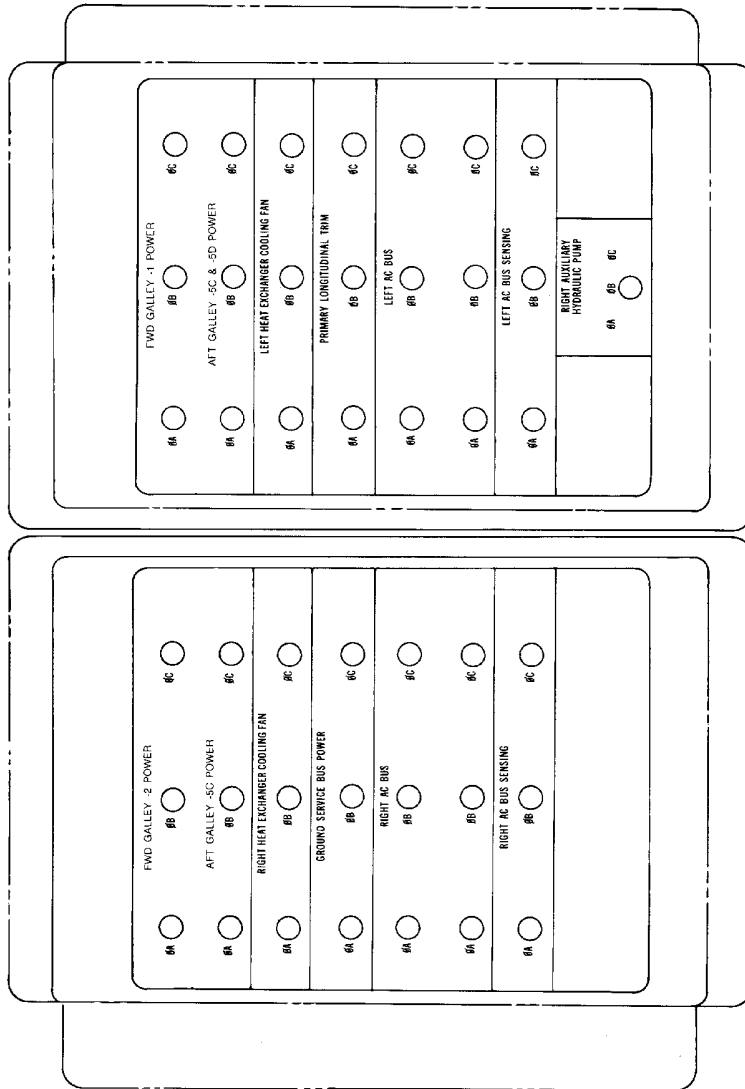
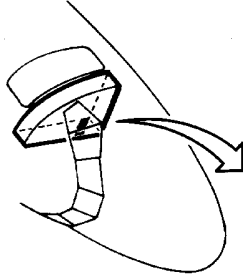
EFFECTIVITY
WJE 401-409, 411, 412, 414, 880, 881, 883, 884

TP-80MM-WJE

31-15-03

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BBB2-31-88C



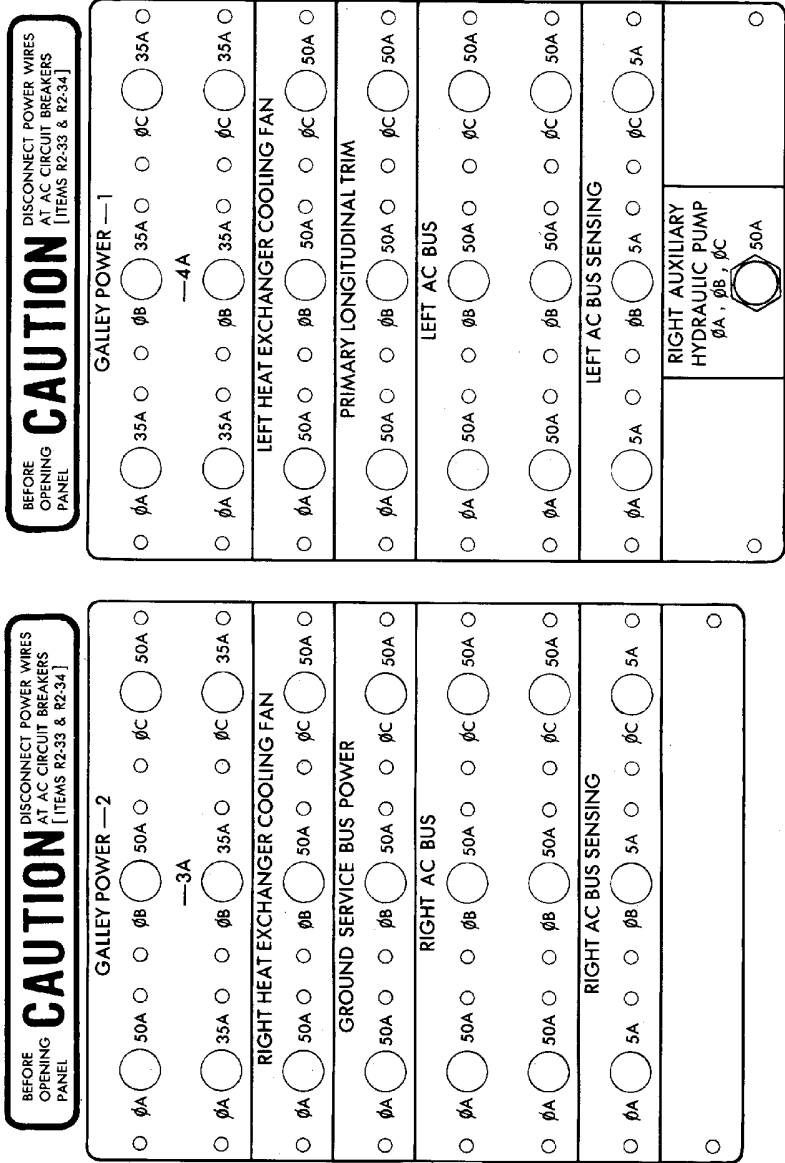
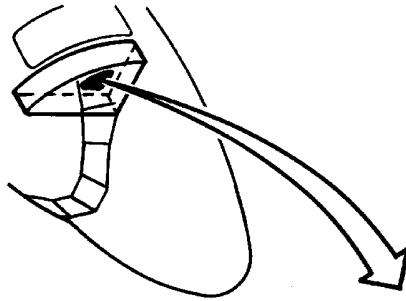
**EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 2 of 6)**

EFFECTIVITY
WJE 410

TP-80MM-WJE

31-15-03

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EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 3 of 6)

MDC PROPRIETARY REFERENCE DATA NUMBERS ARE VALID TO THE THIRD DIGIT. BBB2-31-740

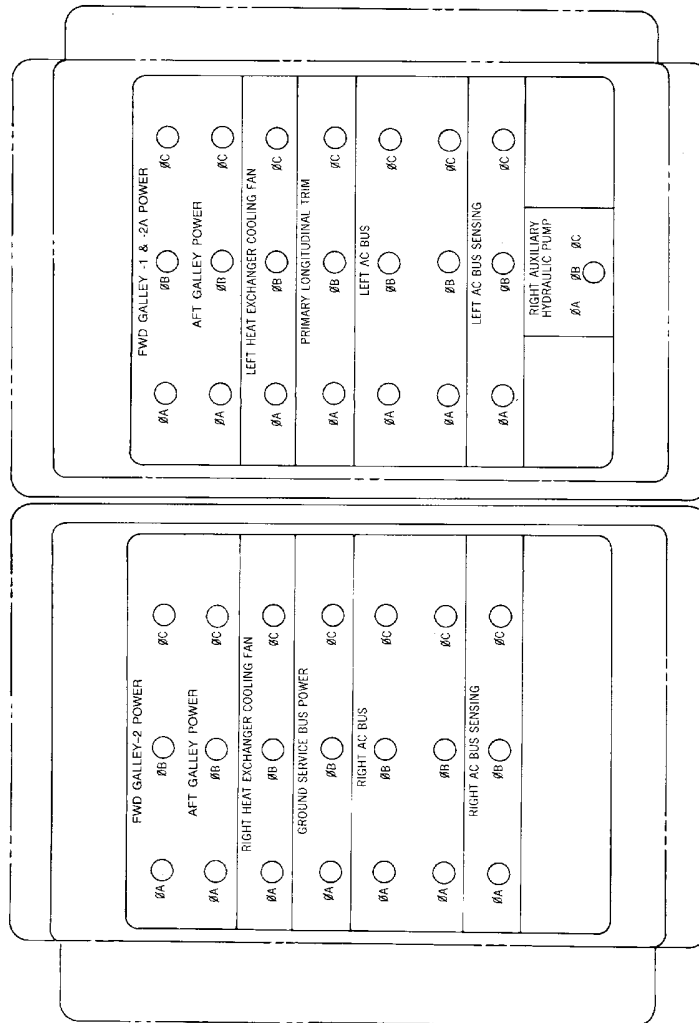
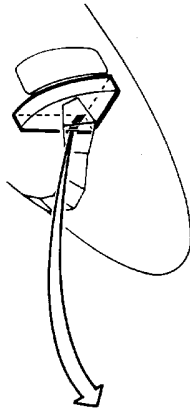
EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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8882-31-005A



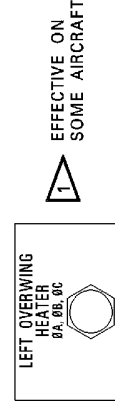
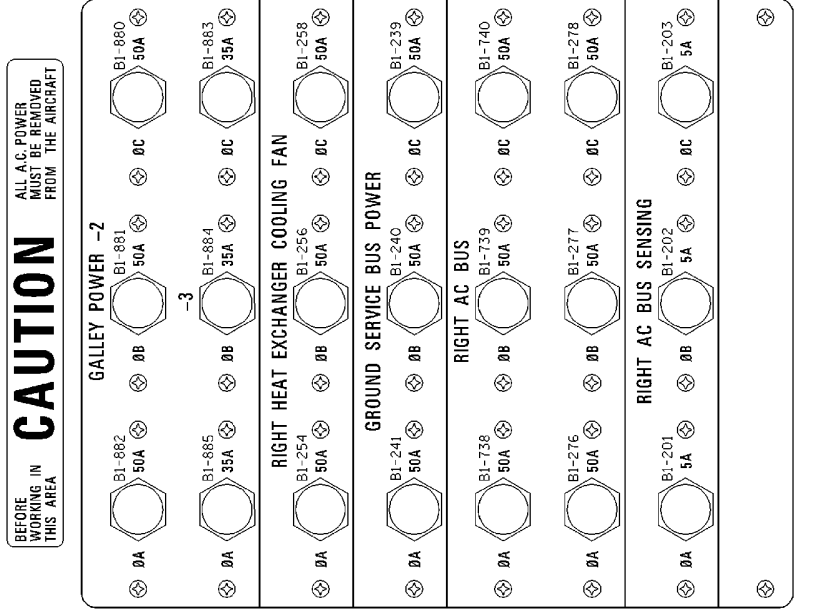
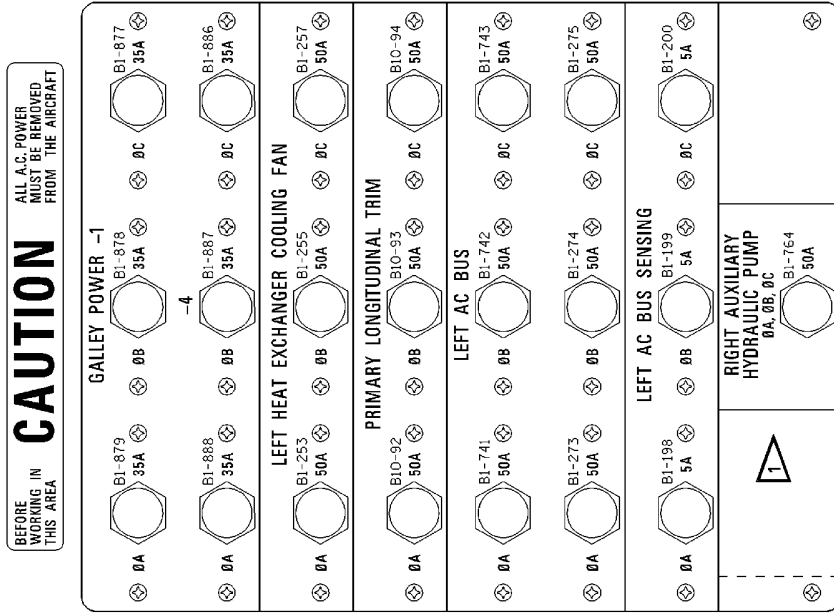
**EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 4 of 6)**

EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

31-15-03

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**EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 5 of 6)**

EFFECTIVITY
WJE 873, 874, 892, 893

TP-80MM-WJE

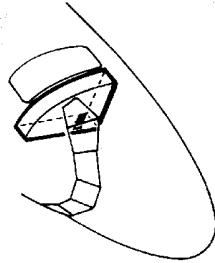
31-15-03

BBB2-31-1649

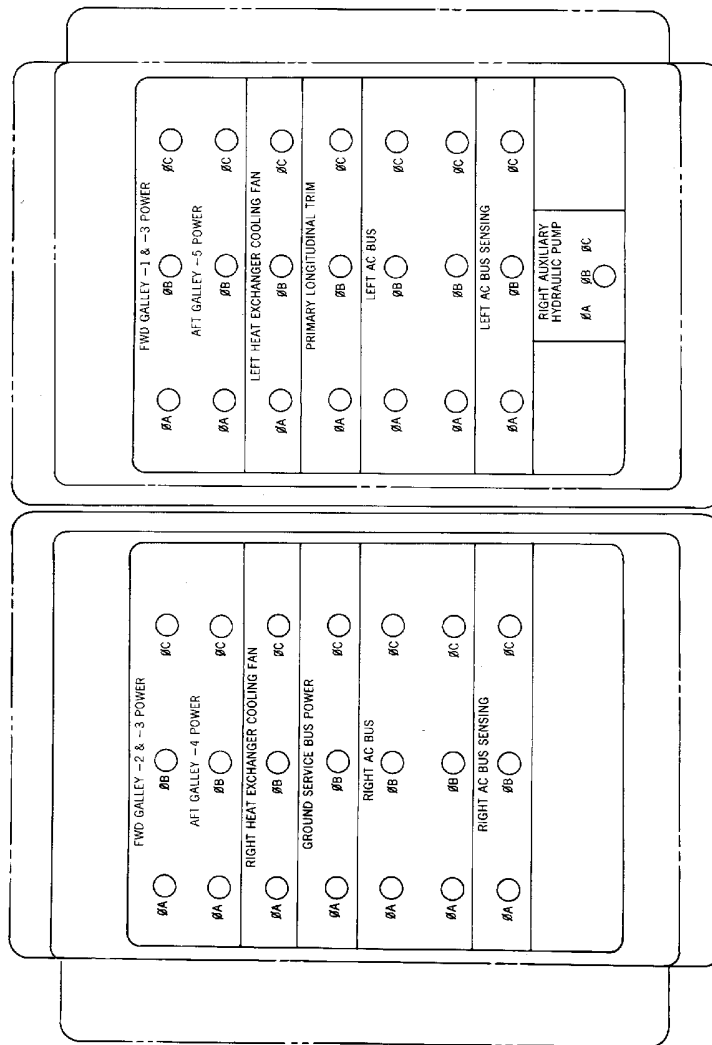
MDC PROPRIETARY

CAG(I/GDS)

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BBB2-31-675



**EPC Generator Bus Circuit Breaker Panel
Figure 1/31-15-03-990-801 (Sheet 6 of 6)**

EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

TP-80MM-WJE

31-15-03

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INDEPENDENT INSTRUMENTS - DESCRIPTION AND OPERATION

1. General

- A. Independent instruments not associated with a specific aircraft system include clocks and the inclinometer.

2. Description

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

- A. The clocks (CLOCKS - DESCRIPTION AND OPERATION, PAGEBLOCK 31-21-00/001 Config 1) are spring-operated, eight-day clocks and are located on the flight instrument panel. Two lamps provide integral lighting for the clocks.

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- B. The clocks, located on the flight instrument panel, displays Greenwich Mean Time (GMT), long term elapsed time (ET), and short term elapsed time (CHR) (INSTRUMENTS DIGITAL TIME (CLOCKS) - DESCRIPTION AND OPERATION, PAGEBLOCK 31-21-00/001 Config 2).

WJE ALL

- C. An inclinometer (INCLINOMETER - DESCRIPTION AND OPERATION, PAGEBLOCK 31-22-01/001) installed in the nose wheelwell provides a reference for leveling the aircraft and is installed in a permanently fixed position.

3. Operation

- A. Clock Operation

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

Operation of the clocks is presented in (CLOCKS - DESCRIPTION AND OPERATION, PAGEBLOCK 31-21-00/001 Config 1).

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

Operation of the clocks is presented in (INSTRUMENTS DIGITAL TIME (CLOCKS) - DESCRIPTION AND OPERATION, PAGEBLOCK 31-21-00/001 Config 2).

WJE ALL

- B. Aircraft leveling procedures are included in (LEVELING AND WEIGHING, CHAPTER 08).

EFFECTIVITY
WJE ALL

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AIRCRAFT MAINTENANCE MANUAL
CLOCKS - DESCRIPTION AND OPERATION

1. General

Overview

WJE 405, 407-409, 411, 873, 874, 880, 881, 883, 884, 892, 893

- A. There are two clocks located in the flight compartment, one is installed in the captain's instrument panel, and one is installed in the first officer's instrument panel.

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- B. There are two clocks located in the flight compartment, one is installed in the captain's instrument panel, and one is installed in the first officer's instrument panel.

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

2. Description

- A. The clock is an eight-day clock which indicates time on an integrally white lighted 12-hour dial utilizing an hour and a minute pointer. In addition, two elapsed time pointers are provided; a sweep second hand and a minute accumulator hand that rotates 360 degrees every 12 minutes.

3. Operation

- A. The clock is manually set and manually wound. When fully wound, the spring contains enough energy to run the clock for a minimum of 8 days. The elapsed time pointers are controlled by the elapsed time knob on the front of the clock.
- B. Wind the clock by rotating the wind knob clockwise. Pull the winding knob outward and rotate to set the time. Push the elapsed time knob to start the sweep second pointer. Push the knob again to stop the pointer. Reset the pointers to zero at the 12 o'clock position by pushing the knob again.

EFFECTIVITY

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

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INSTRUMENTS DIGITAL TIME (CLOCKS) - DESCRIPTION AND OPERATION

1. General

- A. One digital time indicator (clocks) is installed in the captain's instrument panel, and one is installed in the first officer's instrument panel.

2. Description

- A. The digital time indicator (clocks) are installed in the captain's instrument panel and in the first officer's instrument panel provides three time displays: Greenwich Mean Time (GMT) in hours and minutes, Long Term Elapsed Time (ET) in hours and minutes, and Short Term Elapsed Time (CHR) in minutes and seconds. The time reference signal for all clock functions is derived from a time base which is an integral part of the clock. The minutes for GMT and ET are displayed by means of liquid crystal numeric type displays. The liquid crystal numeric display also provides a CHR minute readout while a continuous sweep second hand provides the CHR seconds display. In addition, the clock provides a GMT serialized binary coded output signal in Arinc 585 word format for use by associated aircraft system.
- B. The GMT time indicator is computed in hours and minutes. The GMT is displayed over the range 00 hours 00 minutes to 23 hours 59 minutes. Placing the GMT control in the RUN position accumulates time starting at 0 seconds. The HOLD position stops GMT accumulation and holds the time accumulated. The Slow Slew (SS) position advances minutes, at a rate of one minute per second. Seconds, although not displayed, are held at zero. Advancing minutes past :59 does not advance the hour numeric. The Fast Slew (FS) position advances the hours at a rate of one hour per second. Seconds are held at zero and the minutes do not advance.
- C. The ET is computed and displayed numerically in hours and minutes with a colon between hours and minutes. The ET is displayed over the range 00 hours 00 minutes to 99 hours 59 minutes. The GMT display RESET position blanks the ET numeric display and sets the ET accumulator to zero time. This control is spring loaded to return to hold. The HOLD position stops the ET accumulator and holds the display at the time previously accumulated. The RUN position allows the ET to display the time accumulated during the period that the ET has been in the HOLD mode. Elapse time operation does not affect GMT or CHR time accumulators.
- D. The CHR time is computed in minutes which are numerically displayed, and in seconds which are displayed by a continuous sweep second hand. The CHR is displayed over the range 00 minutes 00 seconds to 99 minutes 59 seconds. The minutes display, provides a zero in the right most digit position as the pointer starts its first revolution. The CHR is controlled by a pushbutton switch located on the front bezel. The first switch actuation starts the CHR, the second switch actuation holds the CHR time accumulator, the numeric displays, and the sweep second hand. The third switch actuation resets the CHR time accumulator to zero, returns the sweep second hand to zero and blanks the accumulated minutes on the CHR display. If the ET is accumulating and CHR mode is selected, the display goes to zero and starts displaying CHR time. The ET base continues to accumulate. When CHR is reset, the ET display will reappear. Operation of the CHR does not affect ET accuracy.
- E. The CHR reset requires less than 3 seconds to completely return to zero. The sweep second hand drive electronics resets instantly to zero when actuated. If the CHR is restarted before the sweep second hand reset is completed, the sweep second hand, in less than 3 seconds, acquires the correct indication or will be a maximum of one second late until the next minute increment at which time the pointer acquires the correct time commensurate with the CHR minute display. If the ET accumulator was previously selected, the contents of the ET accumulator will be displayed following completion of the CHR function reset (i.e., sweep hand stopped at "60" and CHR minute display off).
- F. A manual test function is performed by pressing ANNUN/DIGITAL LTS TEST switch located on the forward overhead switch panel. A digital readout of 8888 will appear in the display. It has no affect on the time keeping function or signal outputs.

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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- G. The clock provides a GMT serial digital data output signal capable of driving up to five loads. The output data word format conforms to electronic chronometer system ARINC 585. The data designator is Type 419 - AZAAAZ/CBCC/DBCA/BCCC.

3. Operation

- A. The digital time indicators (clocks) are powered from the 28 vdc left bus and the battery direct bus power.
- B. The 28 vdc input drives the sweep second hand only. Loss of 28 vdc input will cause the CHR display to blank. The GMT and ET will not be affected unless the battery direct bus is disconnected or drops to less than 16 vdc for more than 200 MS. Reapplication of power restores all functions to the correct times without loss of accuracy. The loss of 28 vdc left bus for less than 200 MS will not cause an error in the pointer position greater than one second. After any loss of power, the pointer position will be exact after the next minute with reapplication of power.
- C. The loss of battery direct bus power up to 200 MS will have no affect on time keeping or display functions.
- D. The loss of the integral time base or failure of the program blanks the GMT output signal and all displays. A failure is indicated by blanking the output signal, blanking the displays on the GMT and CHR/ET readouts and causing the CHR pointer to stop and hold for the duration of the fault.

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 875-879, 886, 887

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DIGITAL CLOCK - TROUBLE SHOOTING

1. General

Overview

- A. The following trouble shooting procedures may be performed without specialized equipment.
- B. Trouble shooting procedures for both clocks are identical.

2. Trouble Shooting

- A. DISPLAYS BLANK (Loss of 28 vdc or battery power)

Table 101

Step	Possible Causes	Correction
(1)	Check for open circuit breaker.	Close circuit breaker.
(2)	Check for open or shorted line.	Repair line as necessary.

- B. LOSS INTEGRAL TIME BASE

Table 102

Step	Possible Causes	Correction
(1)	Check for GMT output signal for 8888 on displays by pressing ANNUN/DIGITAL LTS TEST switch.	Replace clock, if 8888 is not shown on display.

EFFECTIVITY

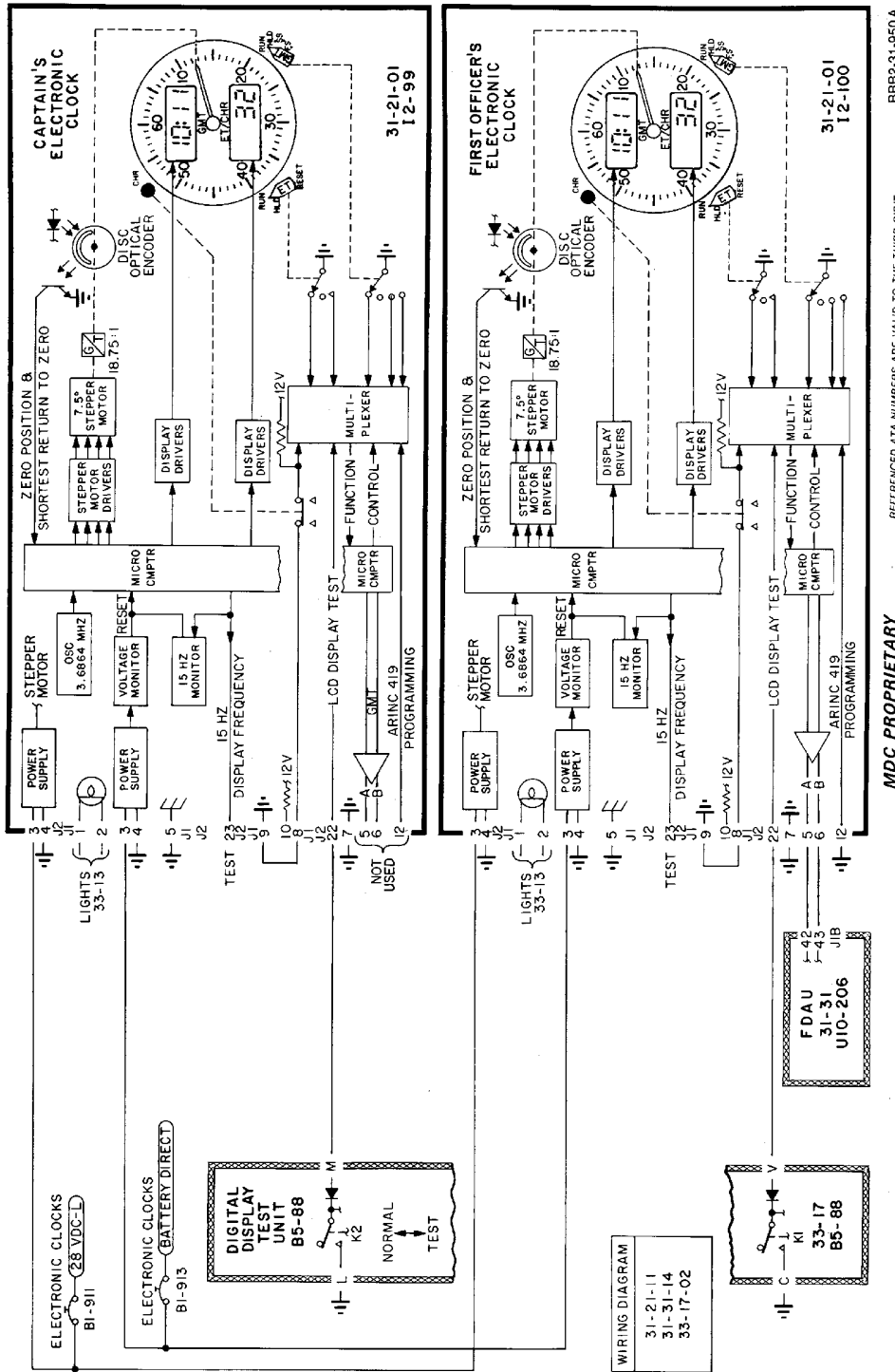
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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Digital Clock - Trouble Shooting
Figure 101/31-21-00-990-801 (Sheet 1 of 5)

BBB2-31-950 A
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.
MDC PROPRIETARY

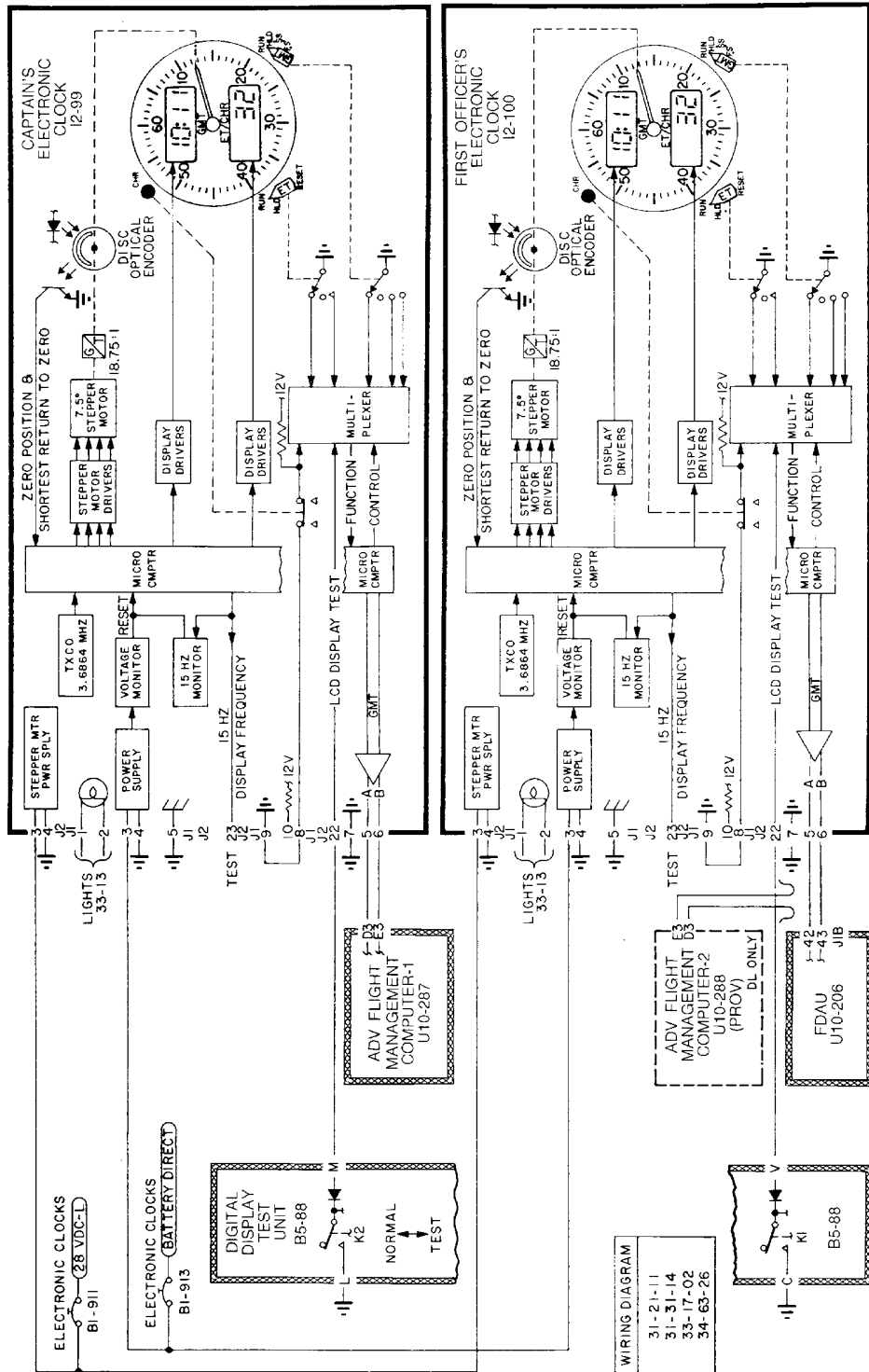
EFFECTIVITY
WJE 410, 886, 887

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BBB2-31-951B

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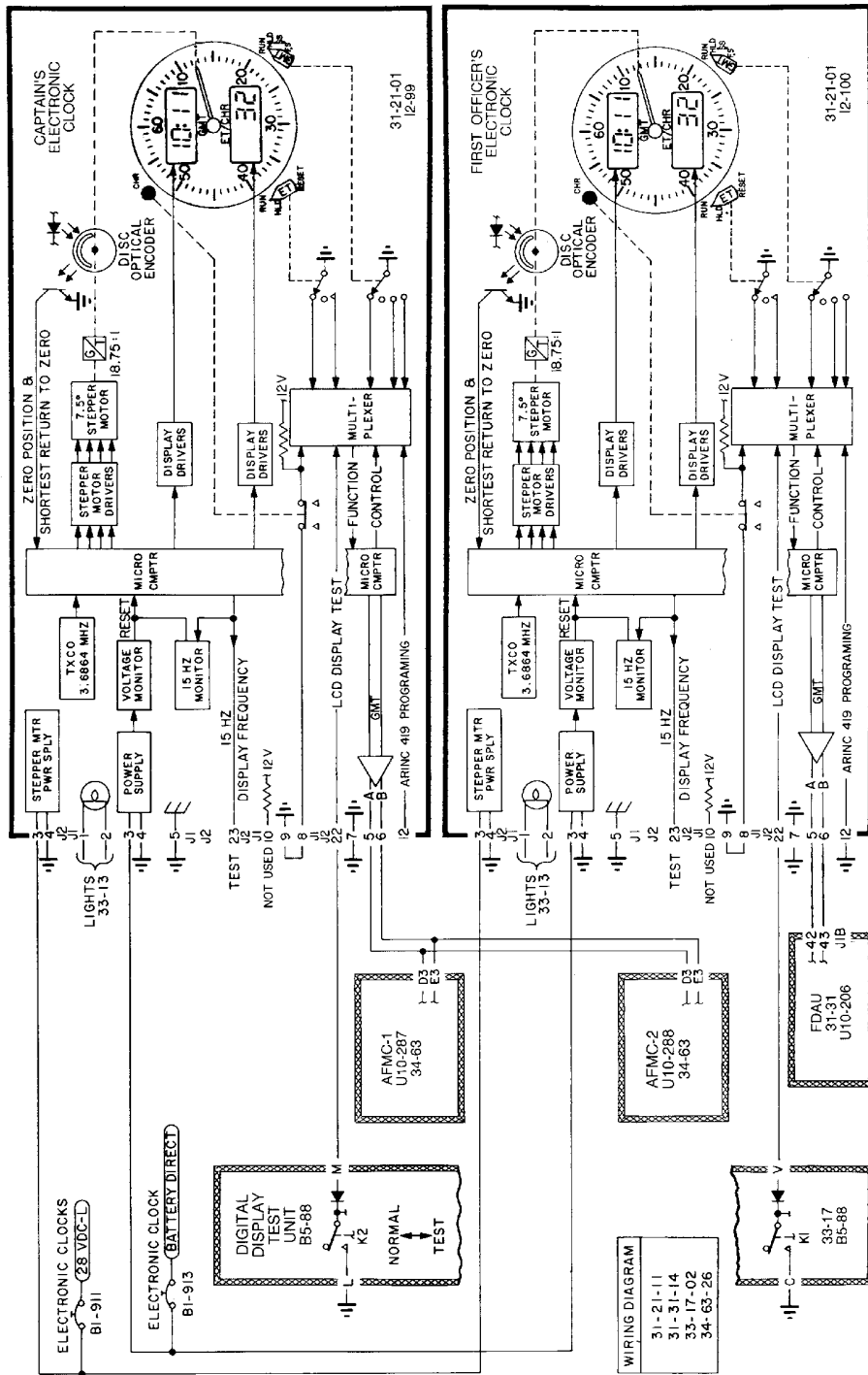
Digital Clock - Trouble Shooting
Figure 101/31-21-00-990-801 (Sheet 2 of 5)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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Digital Clock - Trouble Shooting
Figure 101/31-21-00-990-801 (Sheet 3 of 5)

EFFECTIVITY
WJE 401-404, 412, 414

TP-80MM-WJE

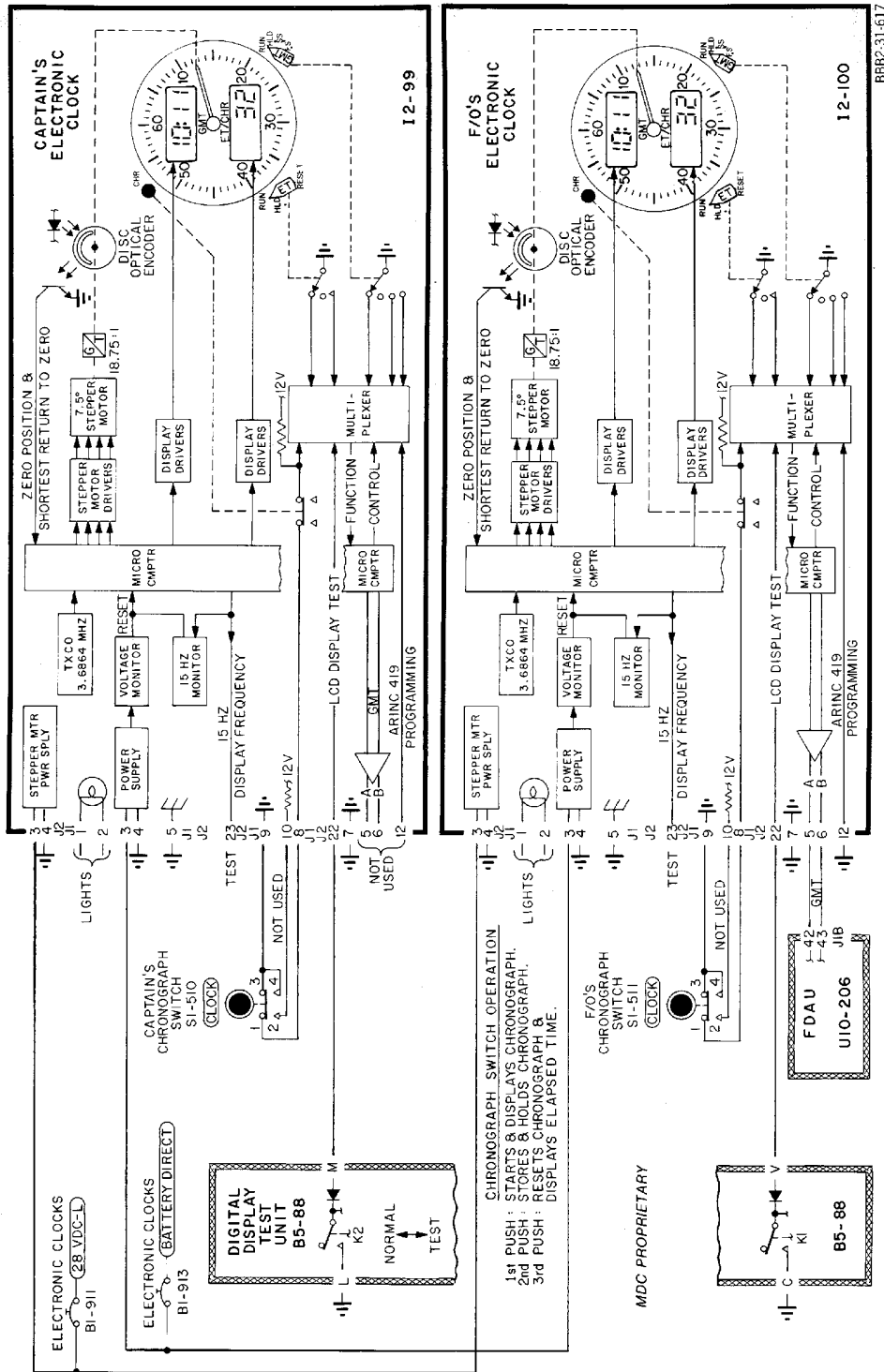
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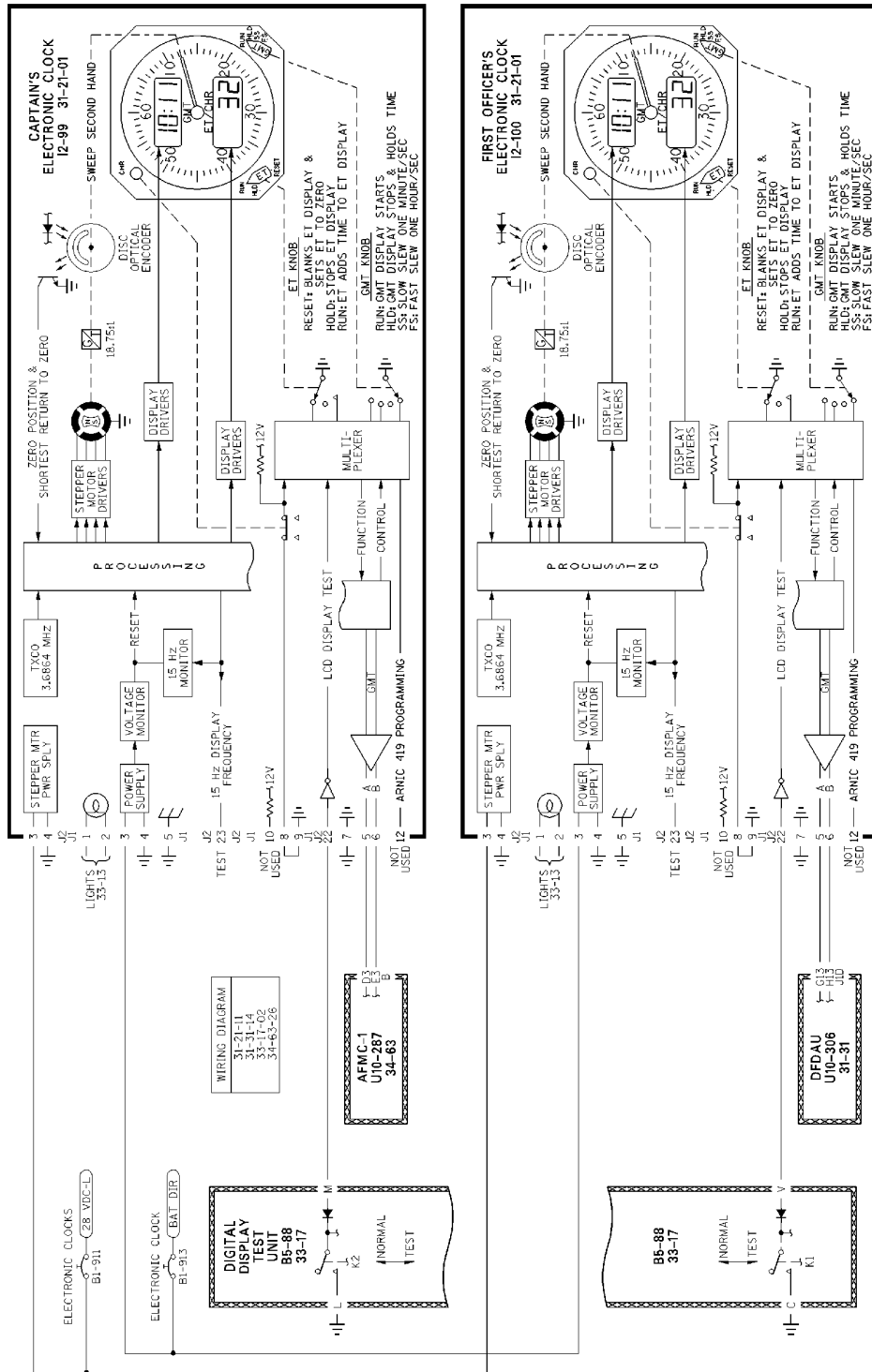
Digital Clock - Trouble Shooting
Figure 101/31-21-00-990-801 (Sheet 4 of 5)

EFFECTIVITY
WJE 406

31-21-00
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Digital Clock - Trouble Shooting
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EFFECTIVITY
WJE 875-879

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CLOCK - TROUBLE SHOOTING

1. General

- A. The following trouble shooting procedures may be performed without specialized equipment.
- B. Trouble shooting procedures for both clocks are identical.

2. Trouble Shooting

- A. LAMP DOES NOT LIGHT

Table 101

Step	Possible Causes	Correction
(1)	Defective lamp.	Replace clock.
(2)	Defective internal contact or wire.	Replace clock.

B. WINDING/SET KNOB INOPERATIVE

Step	Possible Causes	Correction
(1)	Loose setscrew.	Tighten setscrew.

C. CLOCK RUNS TOO FAST OR TOO SLOW

Step	Possible Causes	Correction
(1)	Incorrect adjustment of regulator.	Adjust regulator.

D. HANDS STICK

Step	Possible Causes	Correction
(1)	Damaged hands.	Replace damaged hands.

EFFECTIVITY

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

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CLOCK - MAINTENANCE PRACTICES

1. General

- A. All maintenance requiring more extensive disassembly than is described here, must be performed by skilled watchmakers under shop conditions.
- B. Maintenance procedures for both clocks are identical except as noted.
- C. If the Aerosonic clock P/N 87500-1138 is used on your aircraft, a replacement clock P/N 400267 may be purchased from the company that follows:

Waltham Clock Company
55 Middlesex Street
North Chelmsford, MA 01863
Ph (508) 251-8300

2. Adjustment/Test Clock

- A. Adjust Clock

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open and tag following applicable circuit breakers.

UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL

UPPER EPC, LIGHTS - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	17	B1-303	INTEGRAL LIGHTS F/O INST PANEL

- (2) Remove clock from instrument panel.
- (3) Disconnect electrical connector.
- (4) Remove regulator access cap.
- (5) Adjust regulator.
- NOTE:** Regulator is graduated from + to -. If clock runs fast, move regulator toward -. If clock runs slow, move regulator toward +. One division on dial will alter clock rate from one to two minutes per day.
- (6) Install regulator access cap.
- (7) Connect electrical connector.
- (8) Install clock on instrument panel.
- (9) Close following applicable circuit breakers.

UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL

EFFECTIVITY

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

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UPPER EPC, LIGHTS - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	17	B1-303	INTEGRAL LIGHTS F/O INST PANEL

B. Test Clock

- (1) Energize clock by rotating winding knob clockwise.
- (2) Pull winding knob outward and set hands on clock to correct time.
- (3) Push elapsed time knob and observe sweep second hand for one complete revolution. Movement should be smooth without erratic movements. Allow minute accumulator hand to run until it is evident that mechanism is functioning correctly.

C. Test Elapsed Time Function

- (1) Check time on standard clock.
- (2) Press elapsed time knob.
- (3) Allow minute accumulator hand to complete entire sweep.
- (4) At any point after complete sweep press elapsed time knob. Check that elapsed time hands stop.
- (5) Observe elapsed time reading and verify with standard clock reading.
- (6) Reset elapsed time hands by pressing elapsed time knob. Hands should return to 12 o'clock position.

EFFECTIVITY

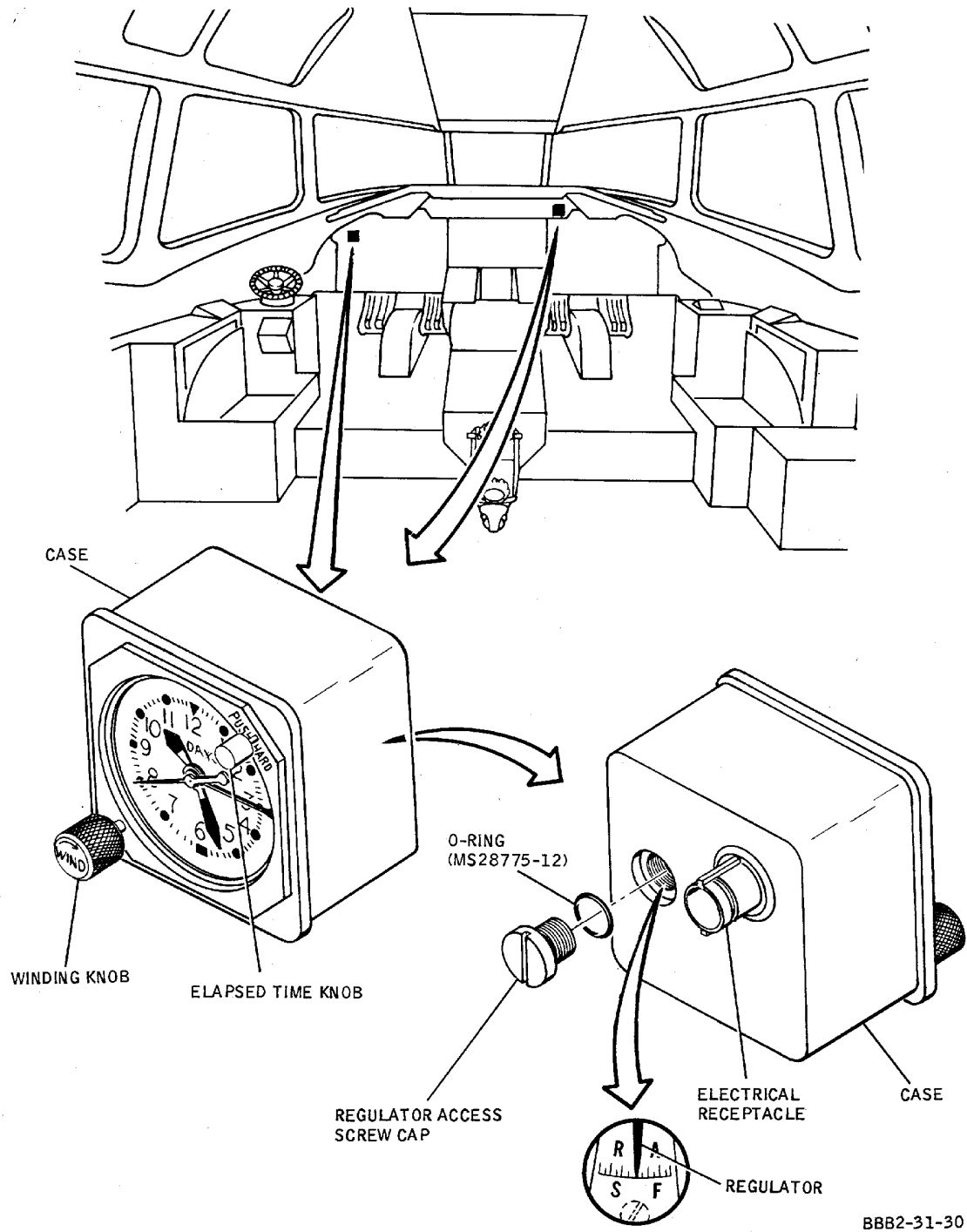
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

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Clock
Figure 201/31-21-00-990-802 (Sheet 1 of 2)

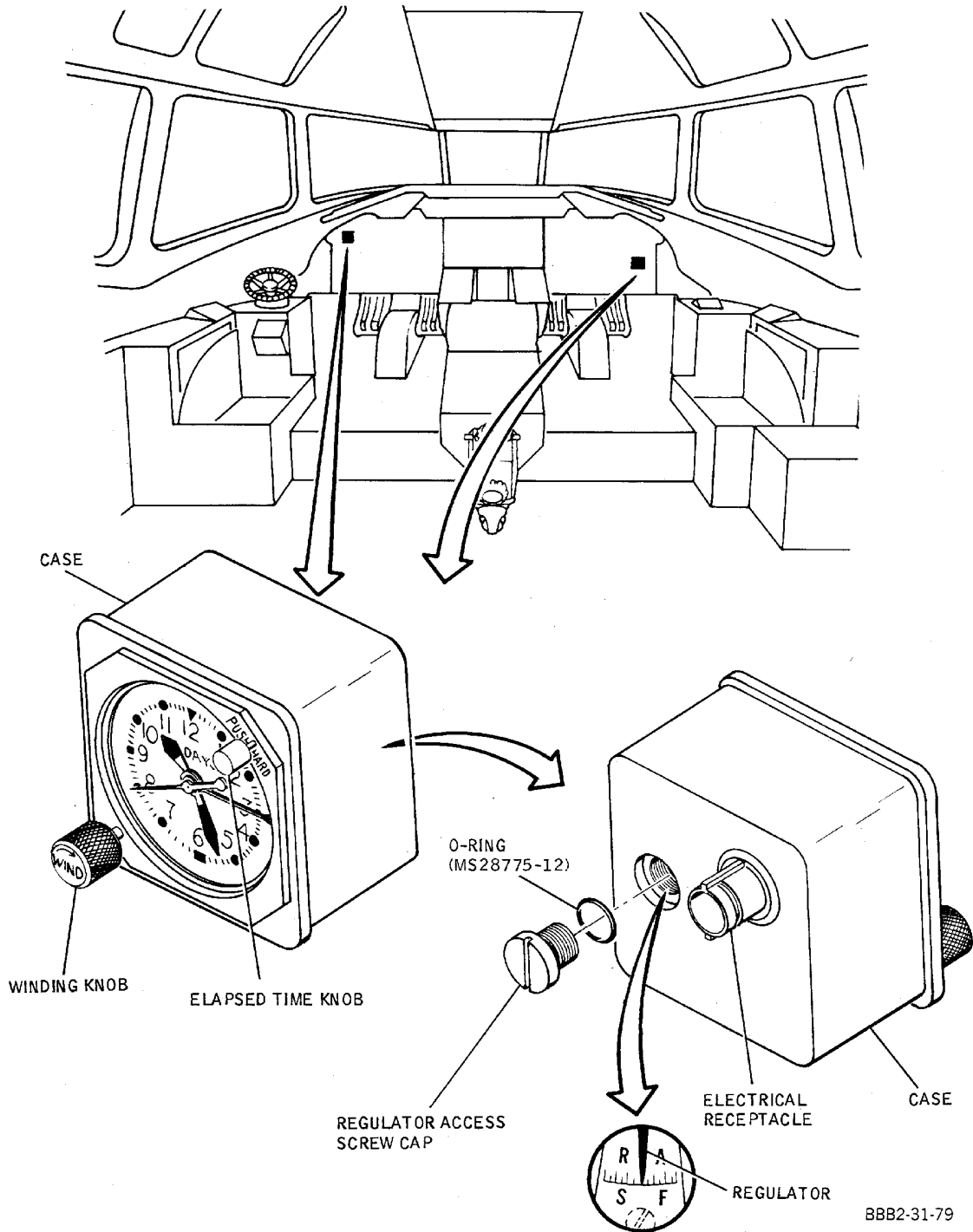
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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Clock
Figure 201/31-21-00-990-802 (Sheet 2 of 2)

EFFECTIVITY
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429,
861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

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DIGITAL CLOCK - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation procedures for the digital time indicators.
- B. There are two digital time (clocks) indicators, one located in the captain's instrument panel and one in the first officer's instrument panel.
- C. Removal/installation procedures are identical for each of the two indicators.

2. Removal/Installation Digital Time (Clocks) Indicator

- A. Remove Digital Time (Clock) Indicator

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	38	B1-911	ELECTRONIC CLOCKS

OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406, 412, 414, 875-879, 886, 887			
B	17	B1-913	ELECTRONIC CLOCK
WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 886, 887			
B	18	B1-913	ELECTRONIC CLOCK

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- (2) Remove time indicator.
- (3) Disconnect electrical connectors from time indicator.

- B. Install Digital Time (Clock) Indicator

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	38	B1-911	ELECTRONIC CLOCKS

OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406, 412, 414, 875-879, 886, 887			
B	17	B1-913	ELECTRONIC CLOCK
WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 886, 887			
B	18	B1-913	ELECTRONIC CLOCK

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- (2) Connect electrical connector to time indicator.
- (3) Install time indicator.
- (4) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	38	B1-911	ELECTRONIC CLOCKS

OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-404, 406, 412, 414, 875-879, 886, 887

B	17	B1-913	ELECTRONIC CLOCK
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WJE 410, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 886, 887

B	18	B1-913	ELECTRONIC CLOCK
---	----	--------	------------------

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

- (5) Check clocks on captain's and first officer's instrument panel by pressing manual test function ANNUN/DIGITAL LTS TEST located on forward overhead switch panel. Displays will indicate 8888.
- (6) Rotate GMT function switch in lower right to FS position to set hours display. Digital readout will change.
- (7) Rotate GMT function switch to SS position to set minutes display.
- (8) Rotate to RUN position. Check that GMT display changes to show accumulation of minutes.
- (9) Rotate ET function switch to RESET then release. Display blanks and sets ET accumulator to zero.
NOTE: ET function switch is spring loaded to HOLD position.
- (10) Rotate to RUN position. Check that elapsed time changes to show accumulated time display.
- (11) Press CHR function switch located on upper left corner of time indicator. Check that sweep second hand operates.
- (12) Press CHR function switch to check that displays and sweep second hand stops.
- (13) Press CHR function switch to reset. Check that sweep second hand returns to 12 o'clock position and that CHR minutes display returns to ET display.

EFFECTIVITY

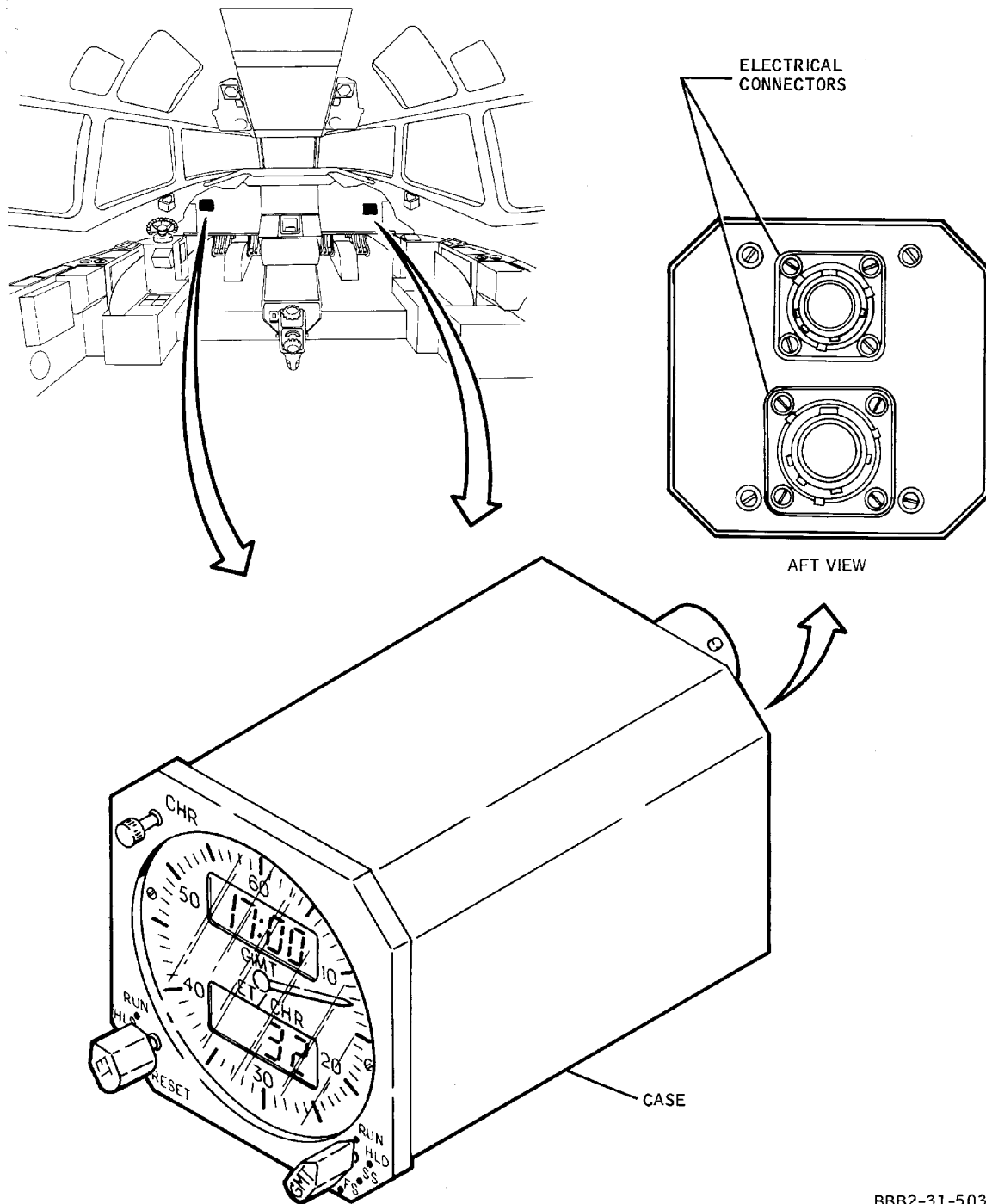
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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BBB2-31-503

Digital Clock
Figure 201/31-21-00-990-803

EFFECTIVITY
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 875-879, 886, 887

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INCLINOMETER - DESCRIPTION AND OPERATION

1. General

- A. An inclinometer is installed on the right-hand side of the nosewheel well to determine the level attitude of the aircraft while the aircraft is on the ground. It consists of a preset grid plate, graduated in degrees of roll and pitch, and a captive plumb bob. The plumb bob is suspended by a cord, and is secured by a stowage clip when not in use. The inclinometer is installed at the factory with the aircraft level and the grid plate adjusted to within 1/8-degree of accuracy in pitch and roll. The plate is secured with mounting screws which are sealed. No maintenance is required on the inclinometer. Refer to LEVELING - MAINTENANCE PRACTICES, PAGEBLOCK 08-10-00/201, for aircraft leveling procedure.

EFFECTIVITY
WJE ALL

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FLIGHT RECORDER - DESCRIPTION AND OPERATION

1. General

- A. The Flight Recorder System is an airborne recording system which collects, receives, and stores preflight and in-flight data.

2. Description

- A. Flight Recorder System

WJE 405, 409, 410, 881, 883, 884

- (1) Components of Flight Recorder System include a Digital Flight Data Recorder (DFDR), an Accelerometer, a Flight Data Acquisition Unit (FDAU), a Flight Data Entry Panel (FDEP) and a Management Control Unit (MCU).

WJE 401-404, 412, 414, 873, 874, 886, 887, 892, 893

- (2) Components of Flight Recorder System include a DFDR, and Accelerometer, a Flight Data Acquisition Unit (FDAU), and a Flight Data Entry Panel (FDEP).

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (3) Components of Flight Recorder System include a DFDR, an Accelerometer, a Flight Data Acquisition Unit (FDAU), a Flight Data Entry Panel (FDEP), a Management Control Unit (MCU), and a Digital Aids (quick access) Recorder (DAR).

WJE 406

- (4) Components of Flight Recorder System include a DFDR, and Accelerometer, a Flight Data Acquisition Unit (FDAU), and a Flight Data Entry Panel (FDEP) and a Performance Maintenance Recorder (PMR) and an Underwater Locator Beacon (ULB).

WJE 875-879

- (5) Components of the Flight Recorder System include a DFDR, an Accelerometer, a Digital Flight Data Acquisition Unit (DFDAU), and Multifunction Control Display Unit (MCDU).

WJE ALL

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-880, 891

- B. DFDR

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

DFDR (UNIVERSAL)

- (1) The DFDR is packaged in a 1/2 ATR long box and is located inside and aft of the aft lower cargo compartment door. On the face plate of the DFDR is an external connector for automatic test equipment (ATE), and built-in-test-equipment (BITE) indicator light. The DFDR has sufficient recording and data retention capabilities to provide a crash survivable record of specific flight parameters for the period immediately preceding a crash situation, with a minimum recorded data retention time of 25 hours.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-880, 891

- (2) The DFDR is packaged in a 1/2 ATR long box. The DFDR has sufficient recording and data retention capabilities to provide a crash survivable record of specific flight parameters for the period immediately preceding a crash situation, with a minimum recorded data retention time of 25 hours.

EFFECTIVITY
WJE ALL

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (a) The DFDR is located inside and aft of the aft lower cargo compartment door. On the face plate of the DFDR is an external connector for automatic test equipment (ATE), and a non-latching built-in-test-equipment (BITE) indicator.

WJE 875-879

- (b) The DFDR is located inside and forward of the aft lower cargo compartment door. On the face plate of the DFDR is a built-in-test-equipment (BITE) indicator light.

WJE ALL

C. Accelerometer

- (1) The accelerometer is located in the right main wheelwell and is an integrally packaged unit of three single-axis accelerometers, arranged to measure acceleration in each of three aircraft axes. The three accelerometers are identical in function and construction, differing only in their orientation within the case.

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

D. FDAU

WJE 405, 409, 410, 881, 883, 884

- (1) The FDAU is packaged in a 1/2 ATR long box located on the aft right radio rack in the electrical/electronics compartment, and assembles monitored parameter values, converts them to a standard digital format suitable for input to the DFDR. The FDAU provides signal conditioning, analog to digital conversion, and time-share multiplexing for all of the analog input parameters plus multiplexing the digital and discrete inputs. These digital values are then output on two serial binary digital data streams at a data rate of 64 12-bit words per second.

WJE 401-404, 412, 414, 873, 874, 886, 887, 892, 893

- (2) The FDAU is packaged in a 1/2 ATR long box located on the aft right radio rack in the electrical/electronics compartment, and assembles monitored parameter values, converts them to a standard digital format suitable for input to the DFDR or the DAR. The FDAU provides signal conditioning, analog to digital conversion, and time-share multiplexing for all of the analog input parameters plus multiplexing the digital and discrete inputs. These digital values are then output on two serial binary digital data streams at a data rate of 64 12-bit words per second.

WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (3) On the face plate of the FDAU are two fault annunciators (FDAU and DFDR) for built-in-test-equipment (BITE), a fault reset switch, and an external connector for automatic test equipment (ATE).

WJE 406

- (4) The FDAU is packaged in a 1/2 ATR long box located on the aft right radio rack in the electrical/electronics compartment, and assembles monitored parameter values, converts them to a standard digital format suitable for input to the DFDR or the PMR. The FDAU provides signal conditioning, analog to digital conversion, and time-share multiplexing for all of the analog input parameters plus multiplexing the digital and discrete inputs. These digital values are then output on two serial binary digital data streams at a data rate of 64 12-bit words per second.
- (5) On the face plate of the FDAU is one fault annunciator for built-in-test-equipment (BITE), and an external connector for automatic test equipment (ATE).

EFFECTIVITY
WJE ALL

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WJE 875-879

E. DFDAU

- (1) The DFDAU is packaged in a 6 MCU size box located on the aft right radio rack in the electrical/electronics compartment, and assembles monitored parameter values, converts them to a standard digital format suitable for input to the SSFDR. The DFDAU provides signal conditioning, analog to digital conversion, and time-share multiplexing for all of the analog input parameters plus multiplexing the digital and discrete inputs. These digital values are then output on two serial binary digital data streams at a data rate of 64 12-bit words per second.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

F. FDEP

WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (1) The FDEP is a thumbwheel-display type panel and is located on the overhead switch panel. The FDEP provides for trip number, date, and flight log data entry by the thumbwheels on the panel. Status indication is provided by fault annunciator lights for Line Replaceable Unit (LRU) in the system (FDAU, DFDR). The FDEP contains two self-test annunciator lights and an INSERT button.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (2) The FDEP is a thumbwheel-display type panel and is located on the overhead switch panel. The FDEP provides for trip number, date, and flight log data entry by the thumbwheels on the panel. Status indication is provided by backlighted segments of a fault annunciator bar for each LRU in the system (FDAU, DFDR, DAR, and MCU). A TLOW segment is also provided for the DAR. The FDEP contains a system control rotary selector switch, a FDEP test button, an EVNT INSR button and a TRND button.

WJE 401-405, 407-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (3) Light intensity of the fault indicators are controlled by a PULL TO DIM switch located on the overhead switch panel.

WJE 406

- (4) The FDEP is a thumbwheel-display type panel and is located on the overhead switch panel. The FDEP provides for DAY, MONTH, FLIGHT NO., TOW, CG, and LEG of trip entry by the thumbwheels on the panel. Status indication is provided by fault annunciator lights for each LRU in the system (FDAU, DFDR, PMR, and provides for TAPE LOW STATUS). The FDEP contains three self-test annunciator lights and an INSERT and EVENT button.
- (5) Light intensity of the fault indicators are controlled by a PULL TO DIM switch located on the overhead switch panel. The four indicators can be tested by the ANNUN/DIGITAL LTS TEST switch located on the overhead switch panel.

WJE 875-879

G. MCDU

- (1) The MCDU's are located on the forward pedestal, left and right sides, so that both pilots can utilize these units. The MCDU provides a means for inputting and retrieval of system parameters.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891

H. MCU

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WJE ALL

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WJE 405, 409, 410, 881, 883, 884

- (1) The MCU is packaged in a 3/8 ATR short box and is located on the aft left radio rack in the electrical/electronics compartment. The MCU monitors the FDAU data inputs and records certain information in its memory (solid state recording).

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (2) The MCU is packaged in a 3/8 ATR short box and is located on the aft right radio rack in the E/E compartment. The MCU monitors FDAU data inputs and controls output of information to the DAR. Also, the MCU determines flight mode and subsequently provides an ON/OFF command to the DAR at a pre-programmed schedule. A fault indicator is located on the FDEP to check the condition of the MCU.

I. DAR

- (1) The DAR is packaged in a 1/2 ATR long box and is located on the aft right radio rack in the E/E compartment. The DAR is an airborne recorder used to store data on magnetic tape cassettes. The unit records data received from the MCU which also controls when the DAR tape records. A fault indicator is located on the DAR front panel which signals when equipment is inoperable.

WJE 406

J. PMR

- (1) The PMR is packaged in a 3/8 ATR short box and is located on the aft right radio rack in the E/E compartment. The PMR is an airborne recorder used to store data on magnetic tape cassettes. The unit records data received from the FDAU. Three indicators are located on the PMR front panel. The red FLAG indicator comes on to indicate a PMR fault. The red TAPE LOW indicator shows that the cassette should be changed. The FIRST TRACK indicator comes on to indicate that track one is in use.

K. ULB

- (1) The ULB is located on the front panel of the flight recorder in the aft accessory compartment. The ULB is a self-contained, crash-protected unit which provides means for flight recorder recovery. The case is fabricated of aluminum alloy which offers maximum protection from impact, shock, and heat. The transmitter is battery operated and actuates upon immersion in either fresh or salt water and will function to a depth of 20,000 feet and has a range of 2,000 to 4,000 yards.

WJE 875, 876

L. QAR

- (1) The QAR is packaged in a 1/2 ATR short box and is located on the aft radio rack in the electrical/electronics compartment. The QAR records data from the DFDAU. The recording time is controlled by the DFDAU. Data is recorded on a cassette which can be easily removed for analysis.

WJE ALL

3. Operation

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-880, 891

A. DFDR

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

DFDR (UNIVERSAL)

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WJE 401-405, 407-412, 414-427, 429, 861-866, 868, 869, 871, 872, 874, 880, 881, 883, 884, 886, 887, 891-893

- (1) The DFDR receives flight data information in binary digital format from the FDAU. Normally, the DFDR operates automatically when 115 vac is available, the parking brake is released, and either of the fuel shutoff lever switches is on or the ground control relay is deenergized (aircraft in flight mode).

WJE 406

- (2) The DFDR receives flight data information in binary digital format from the FDAU. Normally the DFDR operates automatically when 115 vac is available plus the parking brake is released and either of the fuel shutoff lever switches is on or the ground control relay is deenergized (aircraft in flight mode) or either engine start switch on, or when either engine oil pressure is high.

WJE 875-879

- (3) The DFDR receives flight data information in binary digital format from the DFDAU. Normally, the DFDR operates automatically when 115 vac is available, the parking brake is released, and either of the fuel shutoff lever switches is on or the ground control relay is deenergized (aircraft in flight mode).

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (4) When the aircraft is on the ground, the parking brake is set and the fuel shutoff levers are off; the DFDR and FDEP can be manually operated by placing the flight recorder test switch, located on the overhead switch panel, in the GND TEST position.

WJE 875-879

- (5) When the aircraft is on the ground, the parking brake is set and the fuel shutoff levers are off; the DFDR can be manually operated by placing the flight recorder test switch, located on the overhead switch panel, in the GND TEST position.

WJE ALL

- (6) A flight recorder off light, located on the annunciator panel, comes on when the DFDR is not operating.

WJE 875-879

The "MISC" cue light will come on to annunciate any flight recorder annunciations.

WJE ALL

NOTE: The flight recorder off light will not come on with the DFDR removed from the aircraft.

WJE 401-405, 407-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (7) The DFDR incorporates "READ" heads which are wired to the ATE connector on the face plate of the unit. A tester can be attached to the DFDR ATE connector to verify proper operation. The output of the "READ" heads are also wired to the FDAU and the MCU.

WJE 406

- (8) The DFDR incorporates "READ" heads which are wired to the ATE connector on the face plate of the unit. A tester can be attached to the DFDR ATE connector to verify proper operation. The output of the "READ" heads are also wired to the FDAU.

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

- (9) The BITE indicator is located on the face plate of the unit to indicate on-aircraft fault isolation. The LED indicator comes on for a failure.

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WJE ALL

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (10) The BITE indicator is located on the face plate of the unit to indicate on-aircraft fault isolation. The indicator has a non-latching meter movement that rotates and displays a yellow color for a failure and black for no-fault condition.

WJE ALL

B. Accelerometer

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (1) The basic elements in each of the three accelerometers within the accelerometer case are the acceleration sensing mechanism (including the frame, pendulum and torque coil), the proximeter, servoamplifier, output load resistor, and null offset generation circuits. The servo concept balances the input force of acceleration with an equal and opposite, electrically generated restoring force. The measurement of this restoring force provides the desired output signal to the FDAU for lateral and vertical forces.

WJE 875-879

- (2) The basic elements in each of the three accelerometers within the accelerometer case are the acceleration sensing mechanism (including the frame, pendulum and torque coil), the proximeter, servoamplifier, output load resistor, and null offset generation circuits. The servo concept balances the input force of acceleration with an equal and opposite, electrically generated restoring force. The measurement of this restoring force provides the desired output signal to the DFDAU for lateral and vertical forces.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

C. FDAU

- (1) The FDAU provides a means of data gathering, conditioning, and conversion of flight data parameters to digital data in serial binary form. The FDAU accepts input in the following formats:
 - Synchro signals
 - DC voltage amplitudes and ratios
 - AC voltage ratios
 - Frequencies
 - Discrete signals
 - Digital data
 - Variable resistances

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (2) The input signals to the FDAU are time division multiplexed, converted into digital form and then into a serial output with the parameter identification established by means of position or time slot addresses in the data stream output. The FDAU supplies three outputs of serial twelve-bit words with the most significant bit transmitted first. The three outputs differ in data content, data rate, and modulation as follows:

WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (a) An auxiliary output that has a data rate of 64 words per second and provides for the recording of maintenance and operational data. This output is available for input to the DAR for recording and subsequent analysis by ground data processing equipment. A different code or modulation form is used called Bi-Polar RZ Code.

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WJE 406

- (b) An auxiliary output that has a data rate of 64 words per second and provides for the recording of maintenance and operational data. This output is available for input to the PMR for recording and subsequent analysis by ground data processing equipment. A different code or modulation form is used called Bi-Polar RZ Code.

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (c) The DFDR output is a continuously repeating four-second data frame utilizing the Harvard Bi-Phase Code. This consists of four subframes of 64 twelve bit words which, among other information, contains the mandatory flight data input to a crash-survivable digital flight data recorder.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (3) The input signals to the FDAU are time division multiplexed, converted into digital form and then into a serial output with the parameter identification established by means of position or time slot addresses in the data stream output. The FDAU supplies three outputs of serial twelve-bit words with the least significant bit transmitted first. The three outputs differ in data content, data rate, and modulation as follows:
 - (a) An auxiliary output that has a data rate of 64 words per second and provides for the recording of maintenance and operational data. This output is available for input to the DAR for recording and subsequent analysis by ground data processing equipment. A different code or modulation form is used called Bi-Polar RZ Code.
 - (b) The DFDR output is a continuously repeating four-second data frame utilizing the Harvard Bi-Phase Code. This consists of four subframes of 64 twelve bit words which, among other information, contains the mandatory flight data input to a crash-survivable digital flight data recorder.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (4) The FDAU also supplies the CLOCK/SYNC signals for timing control.

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (5) The FDAU and DFDR fault annunciator lights provide on-aircraft fault isolation. These lights come on to indicate a fault.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (6) The FDAU and DFDR fault indicators indicate on-aircraft fault isolation. The indicators are a self-latching meter movement that rotates and displays yellow to indicate a fault and black to indicate a no-fault condition. Both indicators may be reset when power is applied to the unit and the FAULT RESET switch is pressed.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

D. FDEP

WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (1) The FDEP provides the two way communication link for the Flight Recorder. The FDEP transmits crew generated documentary data to the FDAU and the DFDR.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (2) The FDEP provides the two way communication link for the Flight Recorder. The FDEP transmits crew generated documentary data to the FDAU and the DFDR via the MCU which also transmits crew generated data to the DAR.

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WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (3) Data is entered on the FDEP by the thumbwheels and sent to the FDAU, using the INSERT button.
- (4) There are seven thumbwheels on the FDEP which may be set from 0 to 9. Five thumbwheels are allocated to trip, one to date and one for trip leg.
- (5) The fault indicators are amber when a fault is present on the respective line replaceable unit. These indicators are dimmed by opening the PULL TO DIM switch located on the overhead switch panel. The FDAU and DFDR STATUS annunciator lamps are tested by pressing the annunciator. The lamps should come on.
- (6) Test of the FDEP function is accomplished by setting the thumbwheel switches to a specific code. This code is entered via the INSERT button to provide a FDEP operational BITE check.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (7) For system control, a rotary selector switch is provided with three positions: STBY, AUTO, and FAST. A 4 second time delay is built into switch mode changes to remove transient states. Mode control data is continually outputted to the Management Control Unit (MCU).
 - (a) When the switch is rotated to STBY position and with power on the system, the DAR will not record except for DOC data entry. Data can be entered on the FDEP by the thumbwheels and sent to the FDAU as DOC DATA, using the EVNT INSR button. The DAR will be turned on and the DOC DATA recorded. All fault indicators are operable and a functional test can be performed.
 - (b) When the switch is rotated to the AUTO position, the MCU will perform selective recording based on flight modes, limit exceedance, DFDR test and other data available. All other functions are operable.
 - (c) When the switch is rotated to FAST position, the MCU will cause the DAR to record continuously and all other functions will be operable. Flight count will increment by one in the action of rotating the switch from STBY to FAST position if in a preflight mode.
- (8) There are seven thumbwheels on the FDEP which may be set from 0 to 9. Four thumbwheels are allocated to trip, two to date, and one for log. This data is continually sent to the MCU and takes four frame times to send. Takeoff weight, mean aerodynamic chord, and zero may also be entered as data to the DAR. The zero will mark the special data for ground processing.
- (9) The fault indicators are amber when a fault is present on the respective line replaceable unit. These indicators are dimmed by opening the PULL TO DIM switch located on the overhead switch panel. The fault status of the units is transmitted to the MCU once each frame.
- (10) Test of the FDEP function and the annunciators is accomplished by pressing the TEST switch. This provides a lamp test of the annunciators and initiates a FDEP operational BITE check. Prior to pressing the TEST switch, the thumb-wheels are set to all common digits so that an internal comparison can be made. If the test is passed, the FDEP fault annunciator goes from on to off in approximately 4 seconds after the test button is released.

WJE 401-405, 407-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

- (11) Event Marker Function

WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (a) The INSERT button is a dual purpose pushbutton switch that is used to mark the data on tape so the ground processing system can recognize a special data recording request. When the switch is pressed, the following two functions are performed simultaneously:
 - 1) Transmit the thumbwheel data out to the FDAU.

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WJE 401-405, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893 (Continued)

- 2) Insert an event discrete into the FDAU data stream and cause recording of one frame.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (b) The EVNT INSR button is a dual purpose pushbutton switch that is used to mark the data on tape so the ground processing system can recognize a special data recording request. When the switch is pressed, the following two functions are performed simultaneously:
 - 1) Transmit the thumbwheel data out to the FDAU.
 - 2) Insert an event discrete into the FDAU data stream and cause recording of one frame.
- (12) The TRND pushbutton switch function marks the data as stable frame data for use in ground processing of engine performance with a fixed number of data frames that will be marked and recorded when the switch is pressed. In this mode the MCU will turn the DAR on for 4 frames (16 seconds).

WJE 406

- (13) The FDEP provides the two way communication link for the Flight Recorder. The FDEP transmits crew generated documentary data to the FDAU, the DFDR, and the PMR.
- (14) Data is entered on the FDEP by the thumbwheels and sent to the FDAU, and the PMR using the INSERT button. In addition, there is an EVENT button which provides an out signal to identify the beginning of an event.
- (15) There are nine thumbwheels on the FDEP which may be set from 0 to 9. Four thumbwheels are allocated to flight number, four to date and one for trip leg.
- (16) The fault indicators are amber when a fault is present on the respective line replaceable unit. These indicators are dimmed by opening the PULL TO DIM switch located on the overhead switch panel. The FDAU, DFDR, PMR, and TAPE LOW STATUS annunciator lamps are tested by pressing the ANNUN/DIGITAL LTS TEST switch located on the overhead switch panel. The lamps should come on.

NOTE: The FDEP status lights are inhibited when in the flight mode.
- (17) Test of the FDEP function is accomplished by setting the thumbwheel switches to a specific code. This code is entered via the INSERT button to provide a FDEP operational BITE check and transmits the thumbwheel data out to the FDAU and PMR.
- (18) The EVENT button is used to mark the data on tape so the ground processing system can recognize a special data recording request.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891

E. MCU

WJE 405, 409, 410, 881, 883, 884

- (1) The MCU, under software control, monitors the FDAU data inputs, performs trend analysis on selected parameters and stores any exceedance events in internal memory.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (2) The MCU, under software control, monitors the FDAU data inputs, and controls the output of information to the Digital Aids Recorder (DAR).

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WJE 405, 409, 410, 881, 883, 884

- (3) Stored data is retrieved with the use of a Read Data Unit (RDU), which may then be transferred to a ground based processing system.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (4) Integral in the digital data stream, input from the FDEP to the FDAU, are coded digital words which supply FDEP rotary selector (mode) switch position information. This information supplements that supplied to the MCU by the FDAU's aircraft data.
- (5) With the FDEP rotary switch in the STBY position, data is not output to the DAR except, if the EVNT INSR switch is pressed, four frames of data are output to the DAR. With the FDEP mode switch in AUTO, the recording control is based on flight mode, is continuous during certain flight modes and is on a timed snapshot basis during other flight modes. The EVNT INSR switch also initiates the recording of four frames of data with the mode switch in the AUTO position if the recording has not been initiated for some other reason. When the EVNT INSR switch has been actuated a flag is set in the DFDR record via the FDAU and consequently in the DAR data stream.
- (6) With the FDEP mode switch in FAST, the recording is continuous.
- (7) The output format from the MCU to the DAR is identical to that received by the MCU from the FDAU except:
 - (a) MCU generated words are interlaced by the MCU into the FDAUs data stream before output to the DAR.
 - (b) Several FDAU data words are displaced and output in different word slots from that received at the MCU.
- (8) The output data to the DAR is transmitted at a rate of 64 - 12 bit words per second, least significant bit first, in Harvard Bi Phase code.
- (9) The normal data source for the data output to the DAR is the FDAU. The MCU has an integral counter which counts and stores the number of flights. The counter increments on the FDEP rotary mode switch being positioned from STBY to AUTO or FAST with the aircraft on the ground.
- (10) On receipt, the flight count may be any number. Setting all seven FDEP code wheel digits to the digits "zero" will cause the flight count to reset to zero on receipt of the data by the MCU.
- (11) A second counter is also integral to the MCU and counts the number of flights during which the FDEPs TRND switch is pressed. This counter increments on the first actuation and only the first actuation of the TRND switch while in cruise. This count is not output to the DAR.
- (12) Each 128 Trend flights, when the FDEP TRND switch is actuated, the normal trend FDAU data is output to the DAR for four frames which is followed by playback data from the DFDR as received by the MCU. The recording period of the playback data is four frames. The counter that controls output of DFDR data to the DAR is then effectually reset such that playback DFDR data is recorded once approximately every 128 flight counts.
- (13) A playback discrete is output from the MCU to the FDAU when the DFDR recording is initiated which causes a flag to be set in the DFDR record and consequently the DAR record.

F. DAR

- (1) The DAR records data from the MCU. The recording time is controlled by the MCU and is turned on or off under the following conditions:
 - (a) A fixed recording cycle is operative due to a specific mode of operation being entered.
 - (b) The EVNT INSR switch on the FDEP is pressed to ensure the recording of a certain incident.

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891 (Continued)

- (c) A fixed or floating limit (parameter tolerance) is exceeded.
 - (d) The software program requires it.
 - (e) Track switching tape pulse is being received.
 - (f) The FDEP mode selection switch is set to the FAST position.
- (2) Fixed recording rates have been assigned for certain monitored parameters and are as follows: During engine start, take-off, climb, descent, approach, landing and fast mode (set on the FDEP) the recording is continuous. During taxi and cruise, one frame is recorded every 400 seconds.
- (3) The DAR records a frame of data when a limit in the MCU is exceeded. A maximum of 100 parameters have either fixed or floating limits assigned. The fixed limit parameters have assigned upper and lower limits. When either limit is exceeded the MCU transmits the signal (logic 1) to the DAR to record. If the limit signal remains out of tolerance for a specific time a signal is transmitted to the FDEP for annunciation. A floating limit can be assigned to replace the fixed limit during the limit exceedance time to determine the maximum delta (change) limit exceedance. If this limit is exceeded, a signal is transmitted to the DAR for recording.

WJE 406

G. PMR

- (1) The PMR records the return zero (RZ) coded data from the FDAU's auxiliary output. When powered (115 VAC), it is switched on or off in sync with the DFDR. Recording time can be 40 or 50 hours depending on the cassette used.

H. ULB

- (1) The ULB actuates immediately upon immersion and emits a signal for approximately 30 days at a 9 per second pulse rate.
- (2) Inadvertent actuation due to moisture condensation is precluded by switch design which prevents formation of a continuous leakage path across the insulator.

WJE 875-879

I. DFDAU

- (1) The DFDAU provides a means of data gathering, conditioning, and conversion of flight data parameters to digital data in serial binary form. The DFDAU accepts input in the following formats:
- Synchro signals
 - DC voltage amplitudes and ratios
 - AC voltage ratios
 - Discrete signals
 - Digital data
 - Variable resistances
- (2) The input signals to the DFDAU are time division multiplexed, converted into digital form and then into a serial output with the parameter identification established by means of position or time slot addresses in the data stream output. The DFDAU supplies three outputs of serial twelve-bit words with the most significant bit transmitted first. The three outputs differ in data content, data rate, and modulation as follows:

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WJE 875-879 (Continued)

- (a) The DFDR output is a continuously repeating four-second data frame utilizing the Harvard Bi-Phase Code. This consists of four subframes of 64 twelve bit words which, among other information, contains the mandatory flight data input to a crash-survivable digital flight data recorder.
- (3) The DFDAU also supplies the CLOCK/SYNC signals for timing control.
- J. MCDU
 - (1) The MCDU provides the two way communication link for the Flight Recorder. This is a menu driven software link. Some system tests are input and retrieved through the MCDU.
- K. QAR
 - (1) The QAR records data the DFDAU's output. The DFDAU controls the output to the QAR. The QAR can record 128 words per second. Recording time can be up to 23 hours depending on the cassette used.

WJE ALL

- L. Calculating Actual Rudder Position from the DFDR Readout:

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891-893

- (1) Convert the 10 bit binary word value (bits 3-12) of the rudder surface position to a decimal value.
 - (a) If the decimal value from (1) is less than 512, the rudder surface position is a Trailing Edge Left (TEL) value. Proceed to Paragraph 3.L.(1)(d).
 - (b) If the decimal value from (1) is 512 or greater, the rudder position is Trailing Edge Right (TER) value. Proceed to Paragraph 3.L.(1)(c).
 - (c) Calculate the two's complement of the 10 bit binary value (bits 3-12) and convert it to decimal. Proceed to Paragraph 3.L.(1)(e).
 - (d) Multiply the decimal value by 0.352. This will result in rudder synchro angle for TEL. Proceed to Paragraph 3.L.(1)(f).
 - (e) Multiply the decimal value by -0.352. This will result in the rudder sensor synchro angle for TER. Proceed to Paragraph 3.L.(1)(f).
 - (f) Use the table below to convert rudder sensor synchro angle into actual rudder position.

WJE 401-404, 406, 412, 414, 873, 874

- (2) Calculation of actual rudder surface position for a 12 bit word.
 - (a) Calculate the Rudder Synchro Angle using the following formula. The decimal value of the 3 most significant bits is the "OCTANT". The decimal value of the 9 least significant bits is the "DATA".
 - (b) Determine if the rudder position is a Trailing Edge Left (TEL) or Trailing Edge Right (TER) value. For OCTANT values of 4, 5, 6 and 7, the rudder position is a TER value. For OCTANT values of 0, 1, 2, and 3, the rudder position is a TEL value.
 - (c) Determine whether the OCTANT value is even (0, 2, 4 or 6) or odd (1, 3, 5 or 7)
 - (d) Calculate rudder synchro angle using one of the formulas below:
 - 1) For TEL rudder position with EVEN OCTANT values (0, 2), the synchro formula is:
$$\text{Synchro} = 45 \cdot \text{OCTANT} + (\text{TAN}^{-1} (\text{DATA} / 512))$$
 - 2) For TEL rudder position with ODD OCTANT values (1, 3), the synchro formula is:

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$$\text{Synchro} = 45 \cdot \text{OCTANT} + (45 - \text{TAN}^{-1} (1 - \text{DATA}/512))$$

- 3) For TER rudder position with EVEN OCTANT values (4, 6), the synchro formula is:

$$\text{Synchro} = -1 \cdot [360 - (45 \cdot \text{OCTANT} + (\text{TAN}^{-1} (\text{DATA} / 512)))]$$
 - 4) For TER rudder position with ODD OCTANT values (5, 7), the synchro formula is:

$$\text{Synchro} = -1 \cdot [360 - (45 \cdot \text{OCTANT} + (45 - \text{TAN}^{-1} (1 - \text{DATA} / 512)))]$$
 - (e) Use the table below to convert rudder sensor synchro angle into actual rudder position.
- (3) Calculation of actual rudder surface position for a 10 bit word.
- (a) Calculate the Rudder Synchro Angle using the following formula. The decimal value of the 3 most significant bits is the "OCTANT". The decimal value of the 7 least significant bits is the "DATA".
 - (b) Determine if the rudder position is a Trailing Edge Left (TEL) or Trailing Edge Right (TER) value. For OCTANT values of 4, 5, 6 and 7, the rudder position is a TER value. For OCTANT values of 0, 1, 2, and 3, the rudder position is a TEL value.
 - (c) Determine whether the OCTANT value is even (0, 2, 4 or 6) or odd (1, 3, 5 or 7).
 - (d) Calculate rudder synchro angle using one of the formulas below:
 - 1) For TEL rudder position with EVEN OCTANT values (0, 2), the synchro formula is:

$$\text{Synchro} = 45 \cdot \text{OCTANT} + (\text{TAN}^{-1} (\text{DATA} / 128))$$
 - 2) For TEL rudder position with ODD OCTANT values (1, 3), the synchro formula is:

$$\text{Synchro} = 45 \cdot \text{OCTANT} + (45 - \text{TAN}^{-1} (1 - \text{DATA}/128))$$
 - 3) For TER rudder position with EVEN OCTANT values (4, 6), the synchro formula is:

$$\text{Synchro} = -1 \cdot [360 - (45 \cdot \text{OCTANT} + (\text{TAN}^{-1} (\text{DATA} / 128)))]$$
 - 4) For TER rudder position with ODD OCTANT values (5, 7), the synchro formula is:

$$\text{Synchro} = -1 \cdot [360 - (45 \cdot \text{OCTANT} + (45 - \text{TAN}^{-1} (1 - \text{DATA} / 128)))]$$
 - (e) Use the table below to convert rudder sensor synchro angle into actual rudder position.

WJE ALL

- (4) Interpolate where necessary.

Table 1

SYNCHRO ANGLE	ACTUAL RUDDER POSITION	ORIENTATION TRAILING EDGE LEFT (TEL) TRAILING EDGE RIGHT (TER)
63	22.25	AT STOP
58	21	TEL
52	20	TEL
49	19	TEL
45	18	TEL
42	17	TEL
39	16	TEL
36	15	TEL
34	14	TEL

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Table 1 (Continued)

SYNCHRO ANGLE	ACTUAL RUDDER POSITION	ORIENTATION	
		TRAILING EDGE LEFT (TEL)	TRAILING EDGE RIGHT (TER)
31	13	TEL	
28	12	TEL	
25	11	TEL	
23	10	TEL	
20	9	TEL	
18	8	TEL	
16	7	TEL	
14	6	TEL	
11	5	TEL	
9	4	TEL	
7	3	TEL	
5	2	TEL	
2	1	TEL	
0	0	NULL	
-2	-1	TER	
-5	-2	TER	
-6	-3	TER	
-8	-4	TER	
-10	-5	TER	
-13	-6	TER	
-15	-7	TER	
-17	-8	TER	
-19	-9	TER	
-21	-10	TER	
-24	-11	TER	
-26	-12	TER	
-28	-13	TER	
-30	-14	TER	
-33	-15	TER	
-35	-16	TER	
-38	-17	TER	
-40	-18	TER	
-43	-19	TER	

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Table 1 (Continued)

SYNCHRO ANGLE	ACTUAL RUDDER POSITION	ORIENTATION
		TRAILING EDGE LEFT (TEL) TRAILING EDGE RIGHT (TER)
-45	-20	TER
-48	-21	TER
-50	-22.25	AT STOP

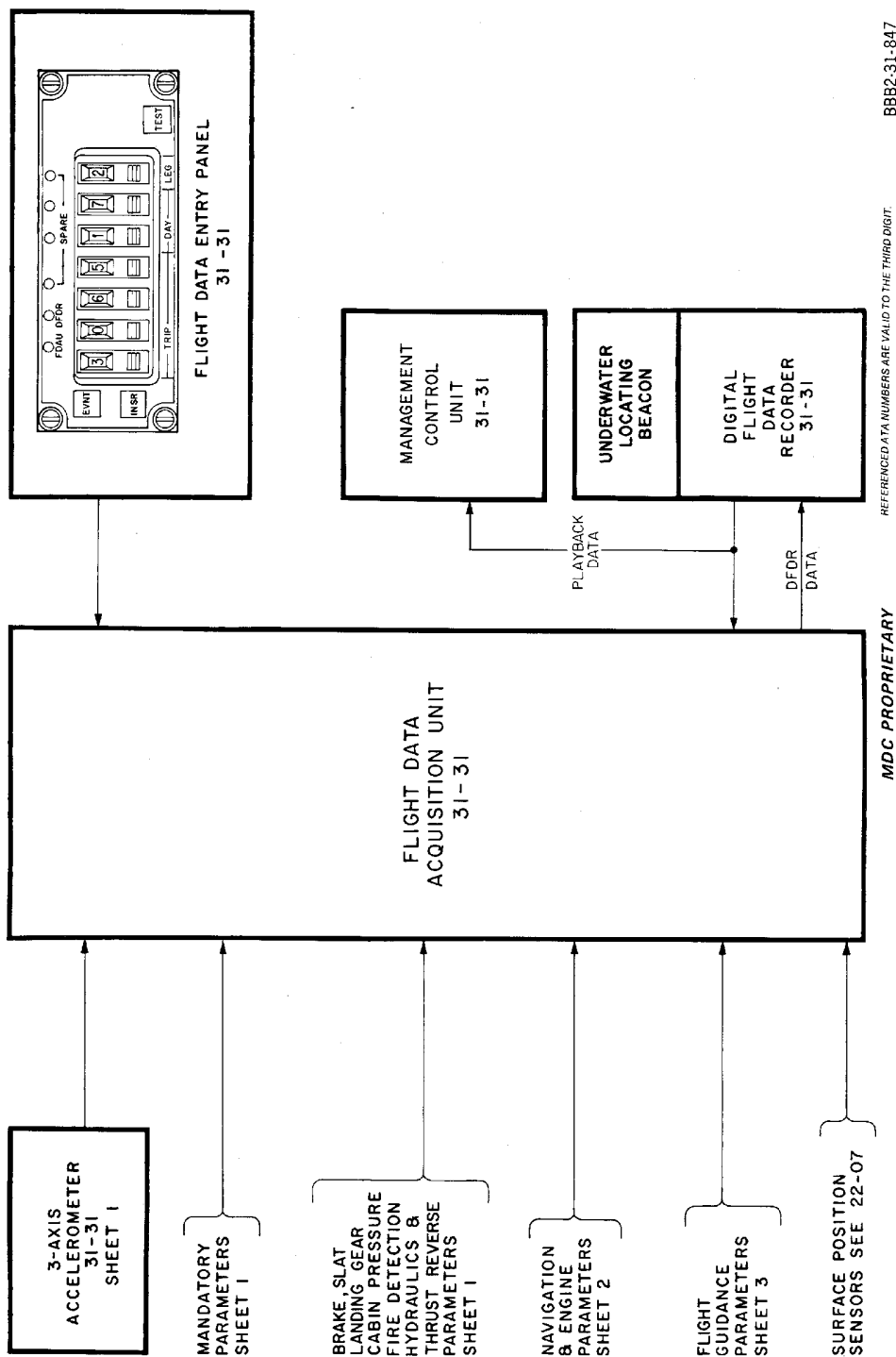
EFFECTIVITY
WJE ALL

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BBB2,31-847

AIDS System Block Diagram
Figure 1/31-31-00-990-801 (Sheet 1 of 7)

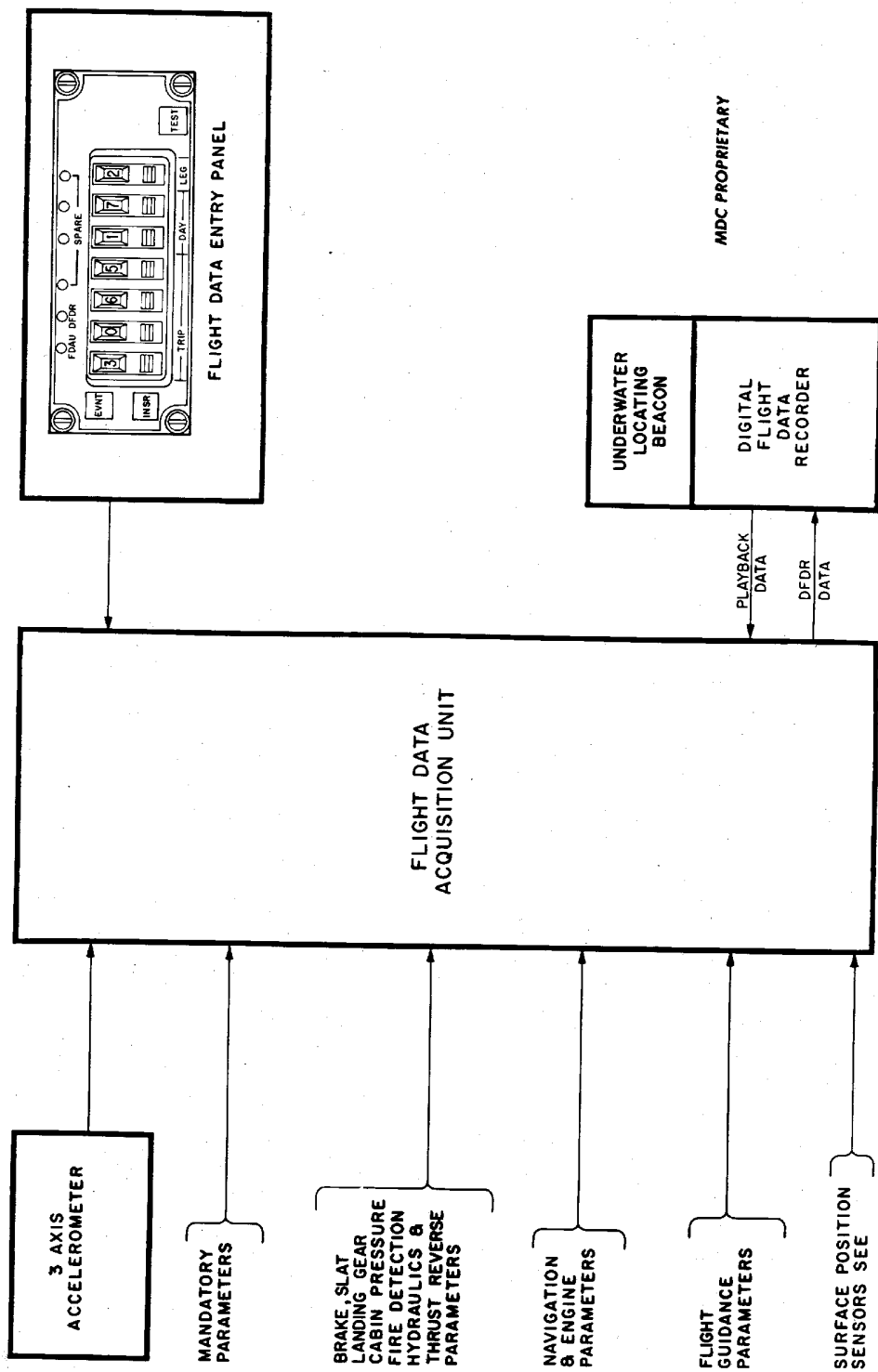
EFFECTIVITY
WJE 405, 409, 881, 883, 884

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AIDS System Block Diagram
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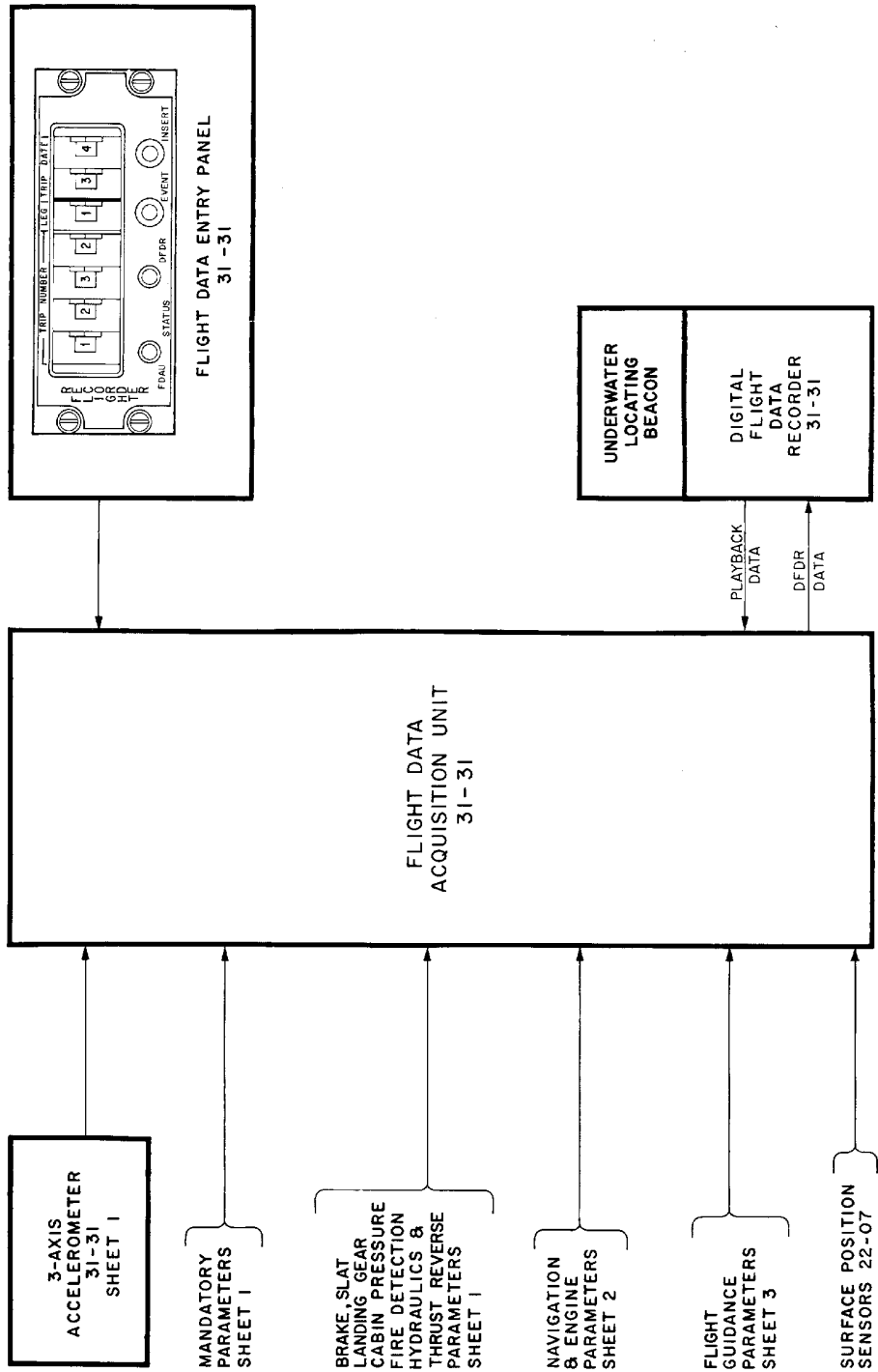
EFFECTIVITY
WJE 886, 887

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BBB2-31-693A
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

AIDS System Block Diagram
Figure 1/31-31-00-990-801 (Sheet 3 of 7)

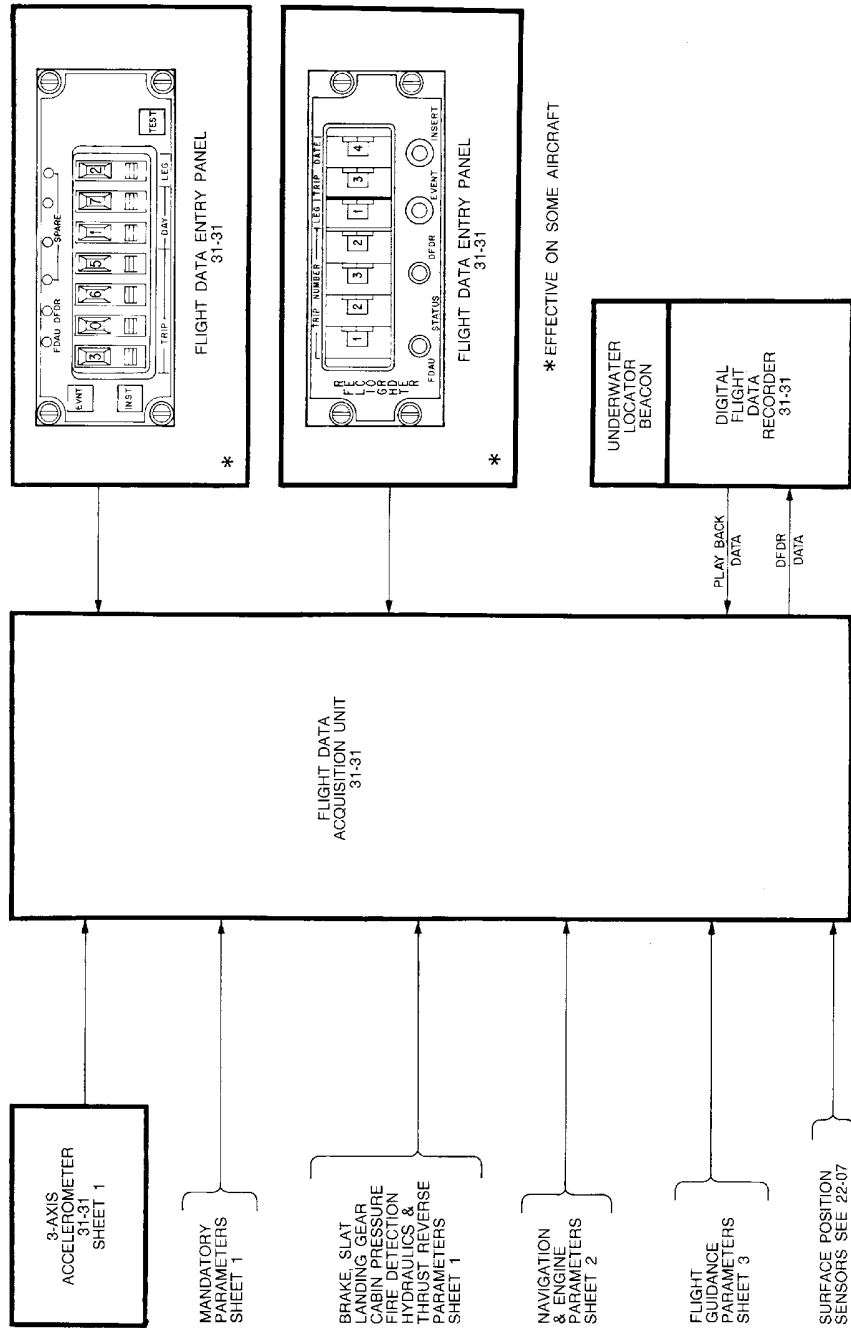
EFFECTIVITY
WJE 401-404, 412, 414

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* EFFECTIVE ON SOME AIRCRAFT

BBB2-31-1078

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

AIDS System Block Diagram
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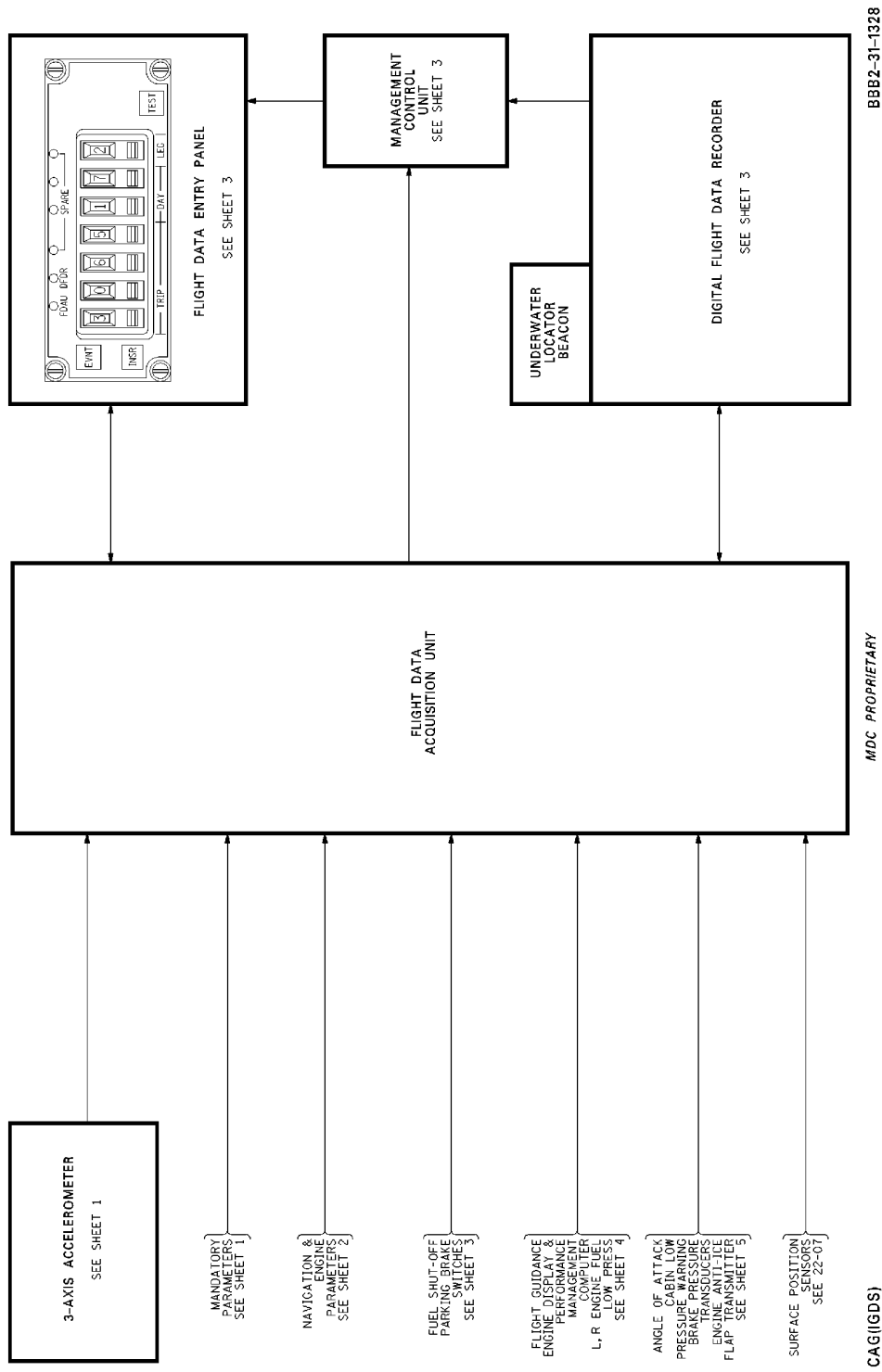
EFFECTIVITY
WJE 873, 874, 892, 893

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AIDS System Block Diagram
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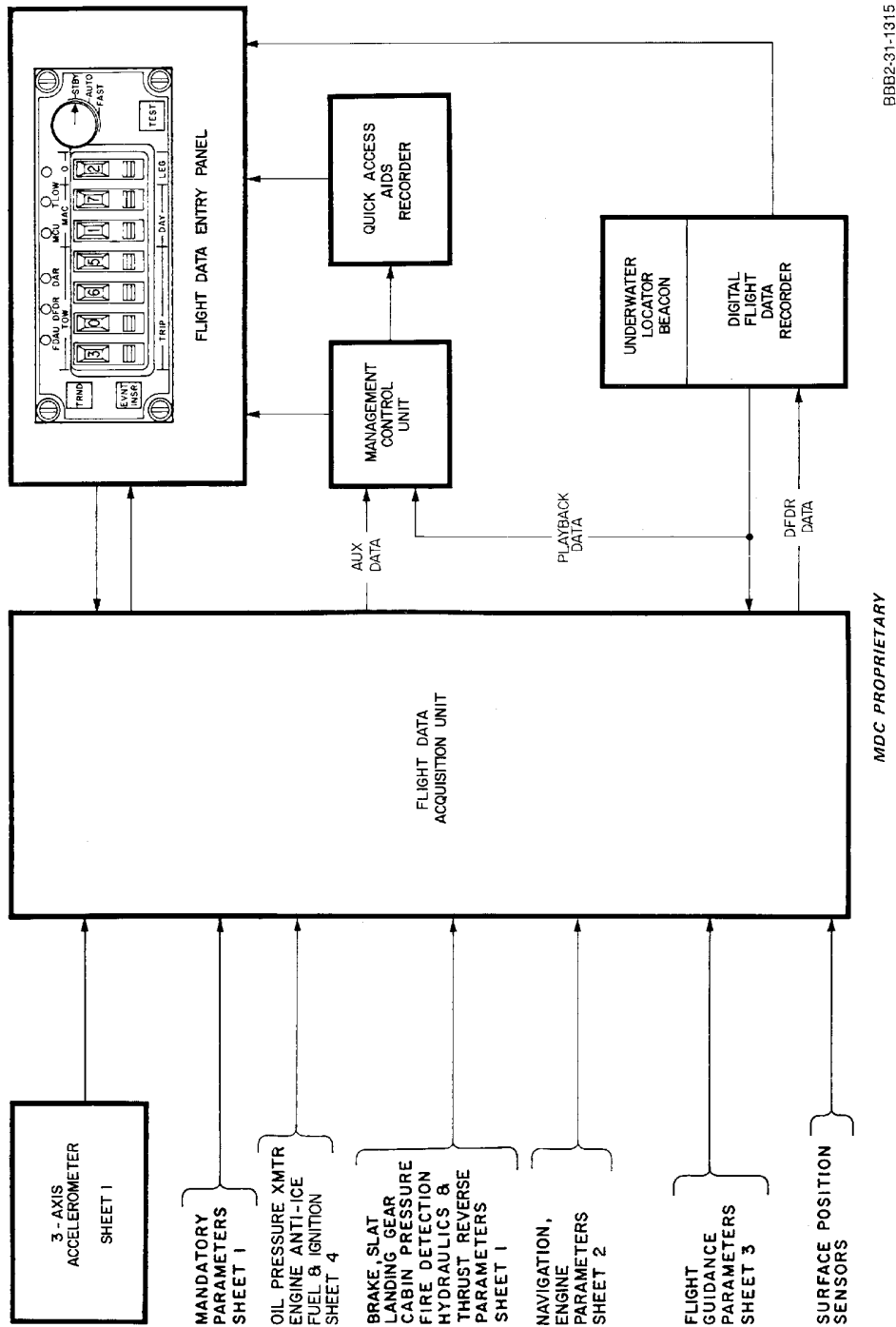
EFFECTIVITY
WJE 410

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MDC PROPRIETARY

AIDS System Block Diagram
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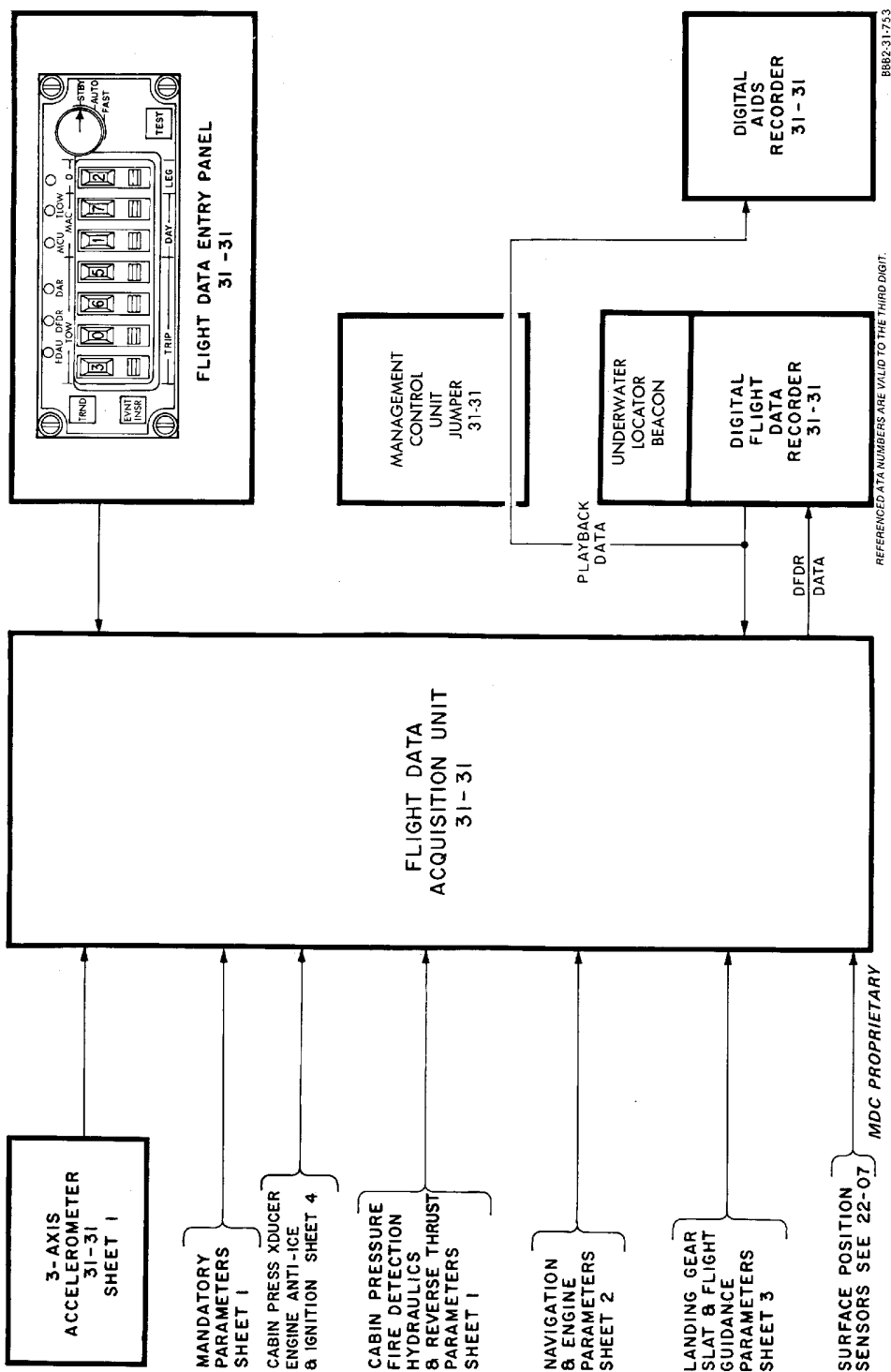
EFFECTIVITY
WJE 407, 408, 411, 880

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AIDS System Block Diagram
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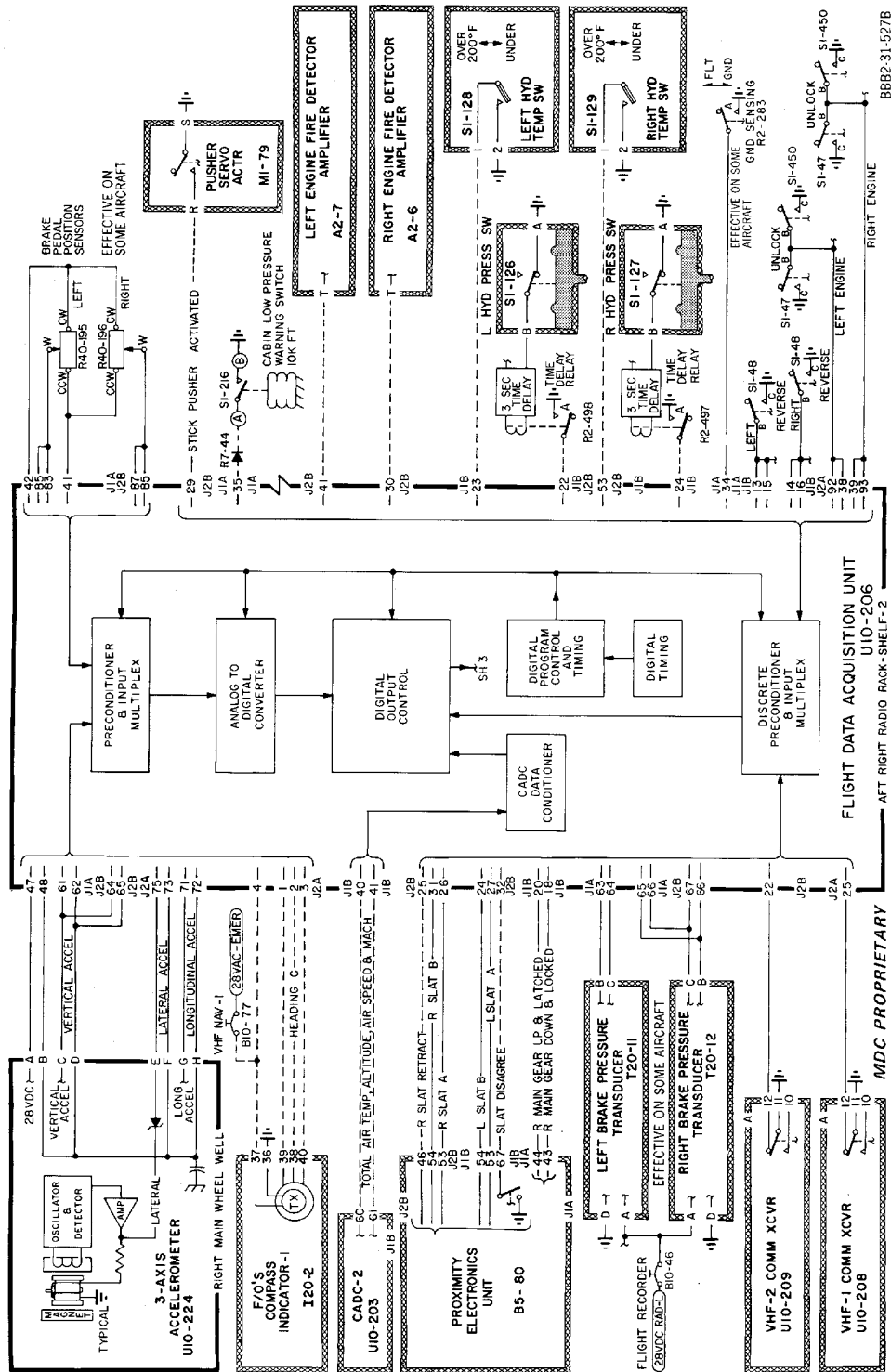
EFFECTIVITY
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AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 1 of 34)

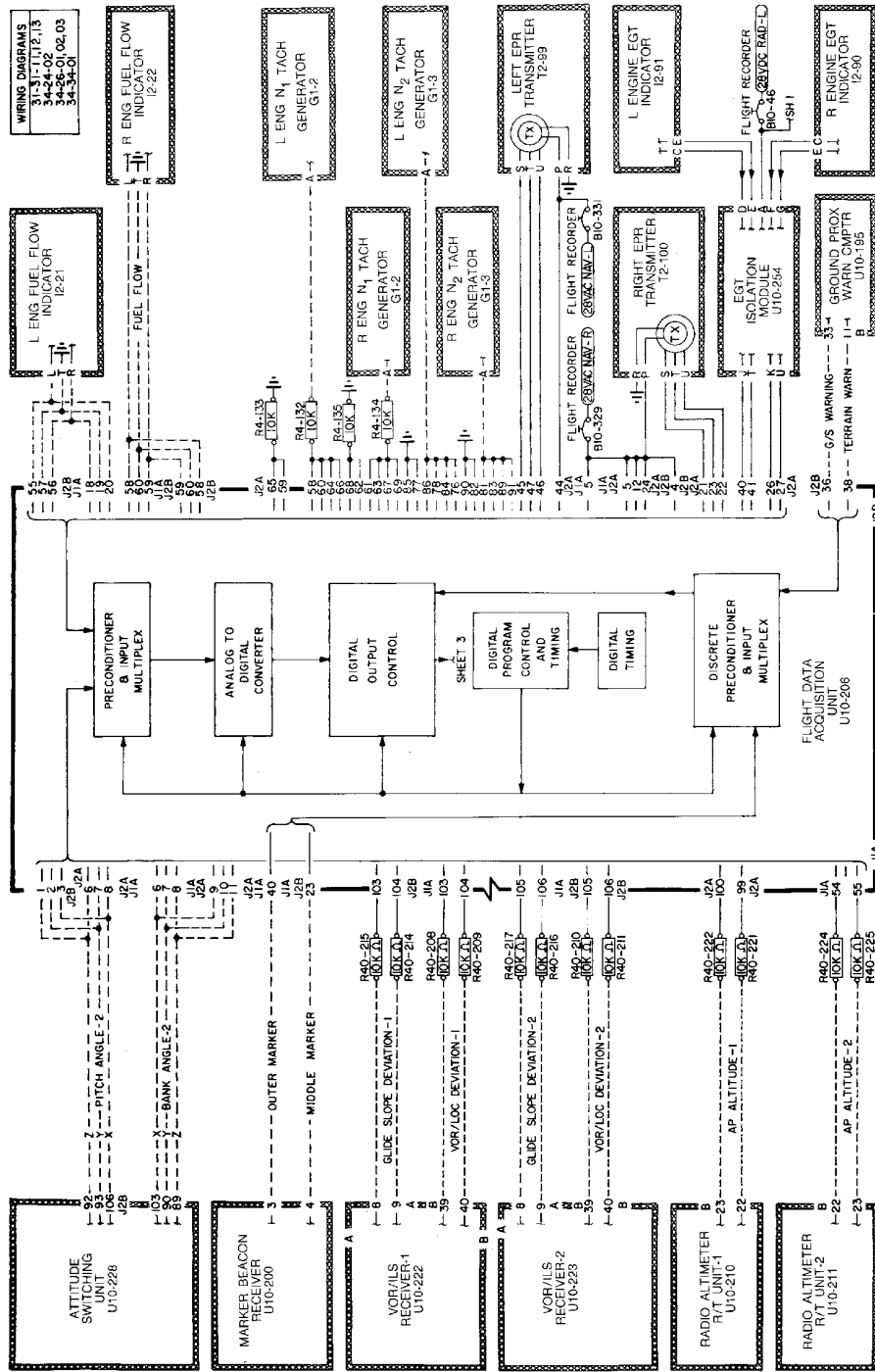
EFFECTIVITY
WJE 405, 409, 881, 883, 884

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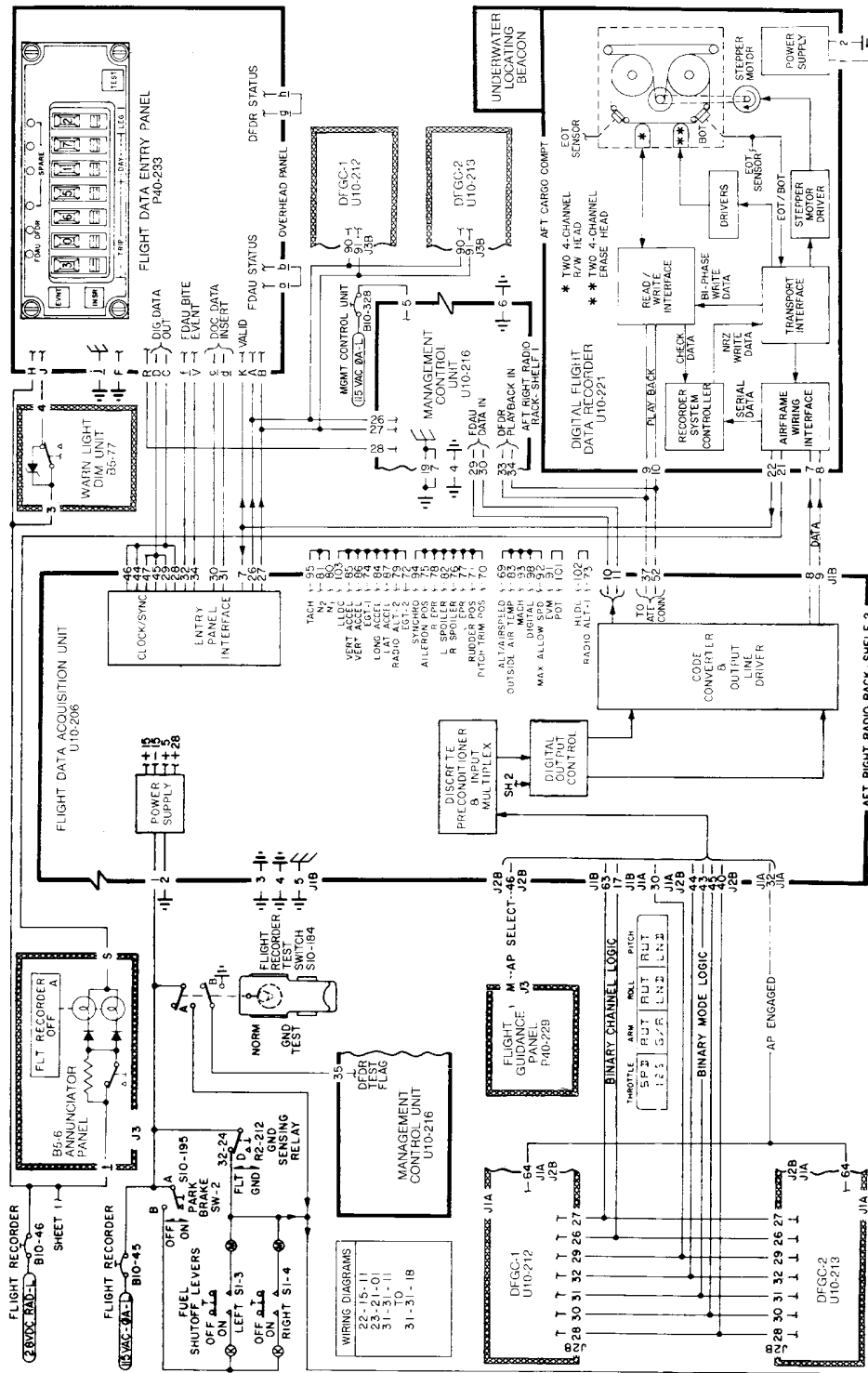
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 2 of 34)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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BBB2-31-1007A
MDC PROPRIETARY

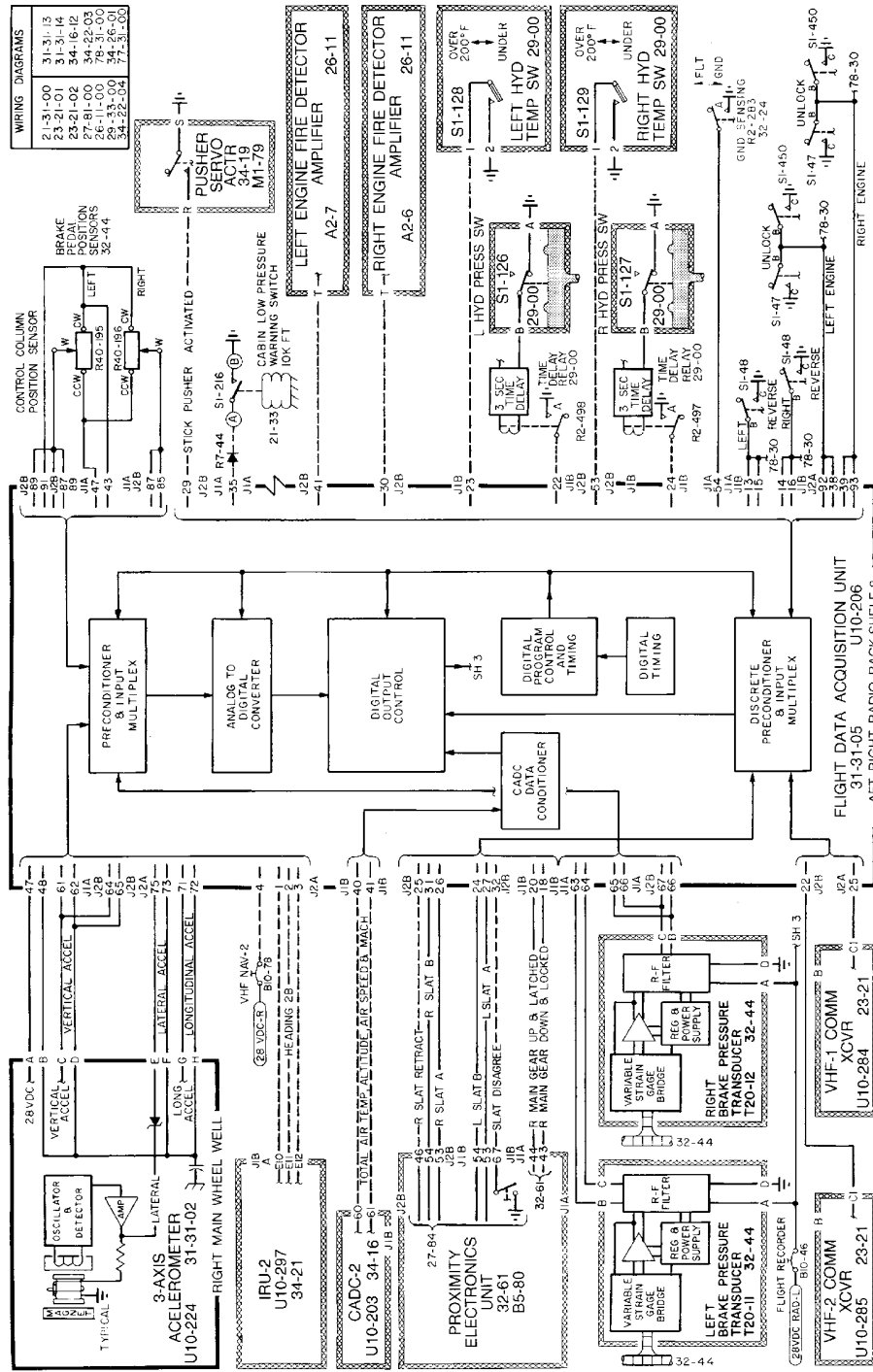
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 3 of 34)

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 4 of 34)

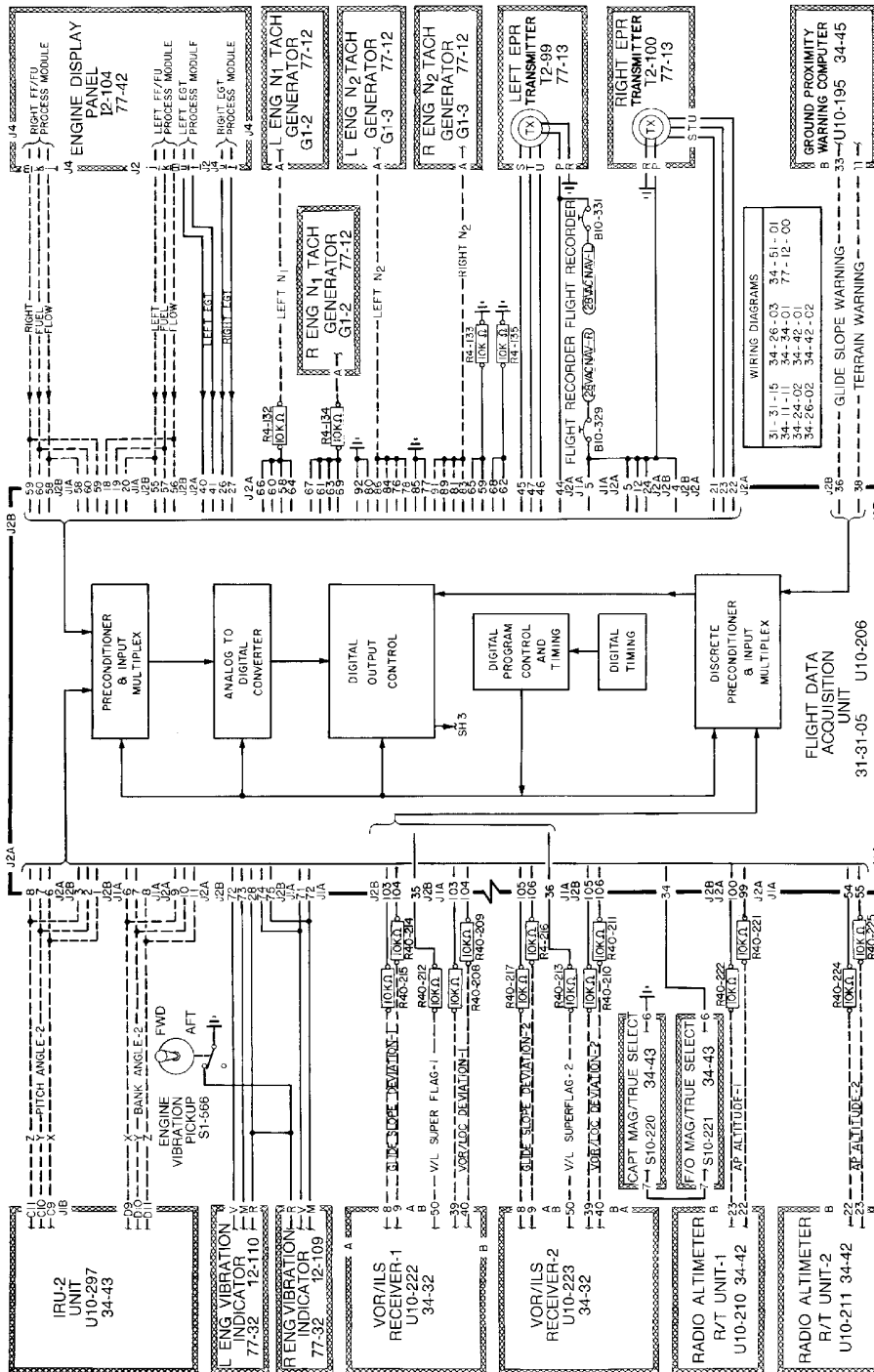
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.
MDC PROPRIETARY
BBB2-31-1117

EFFECTIVITY
WJE 401-404, 412, 414

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT. BBB2-31-1118

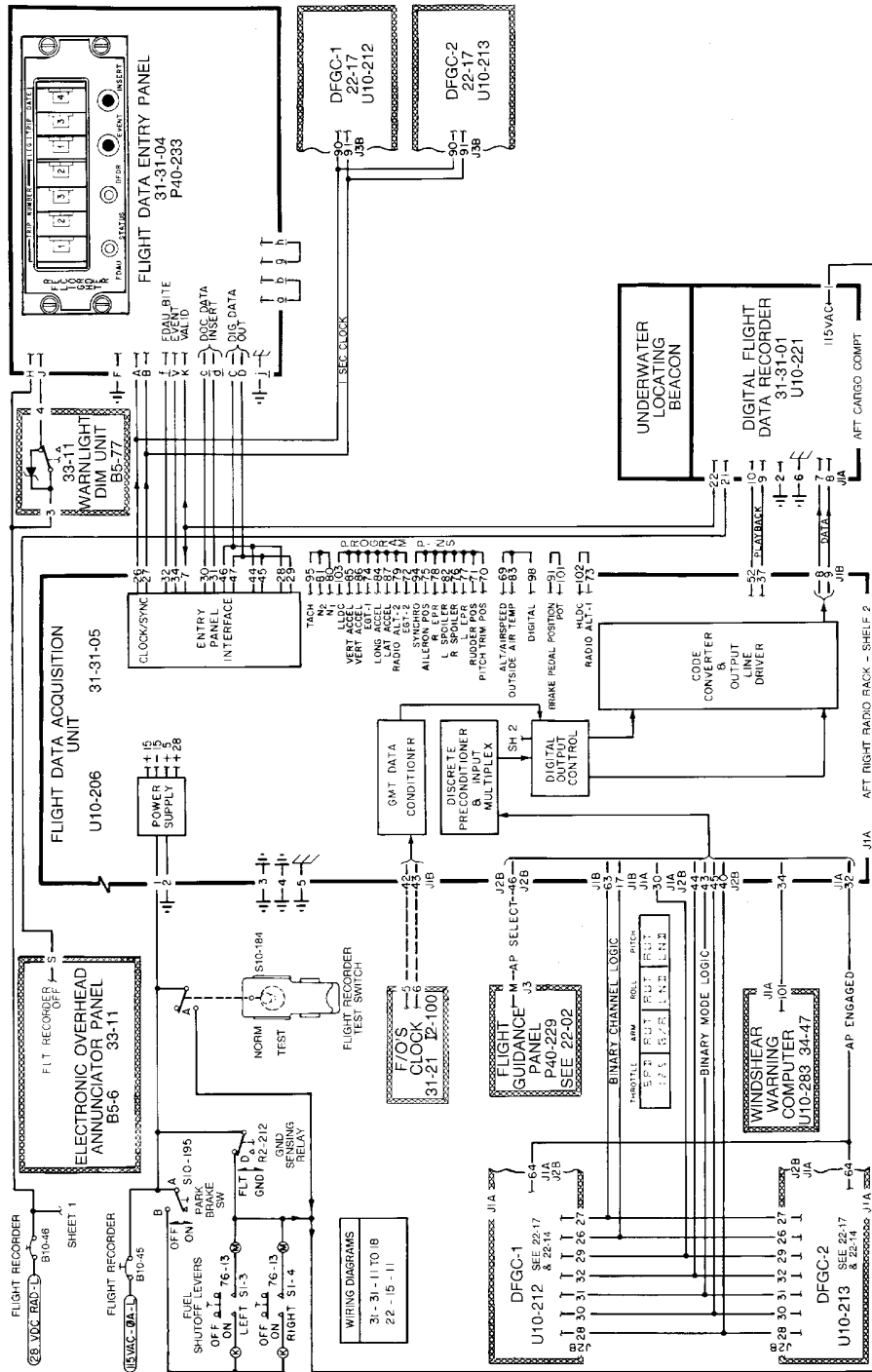
MDC PROPRIETARY

AIDS Parameters System Schematic
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EFFECTIVITY
WJE 401-404, 412, 414

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BBB2-31-1119

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

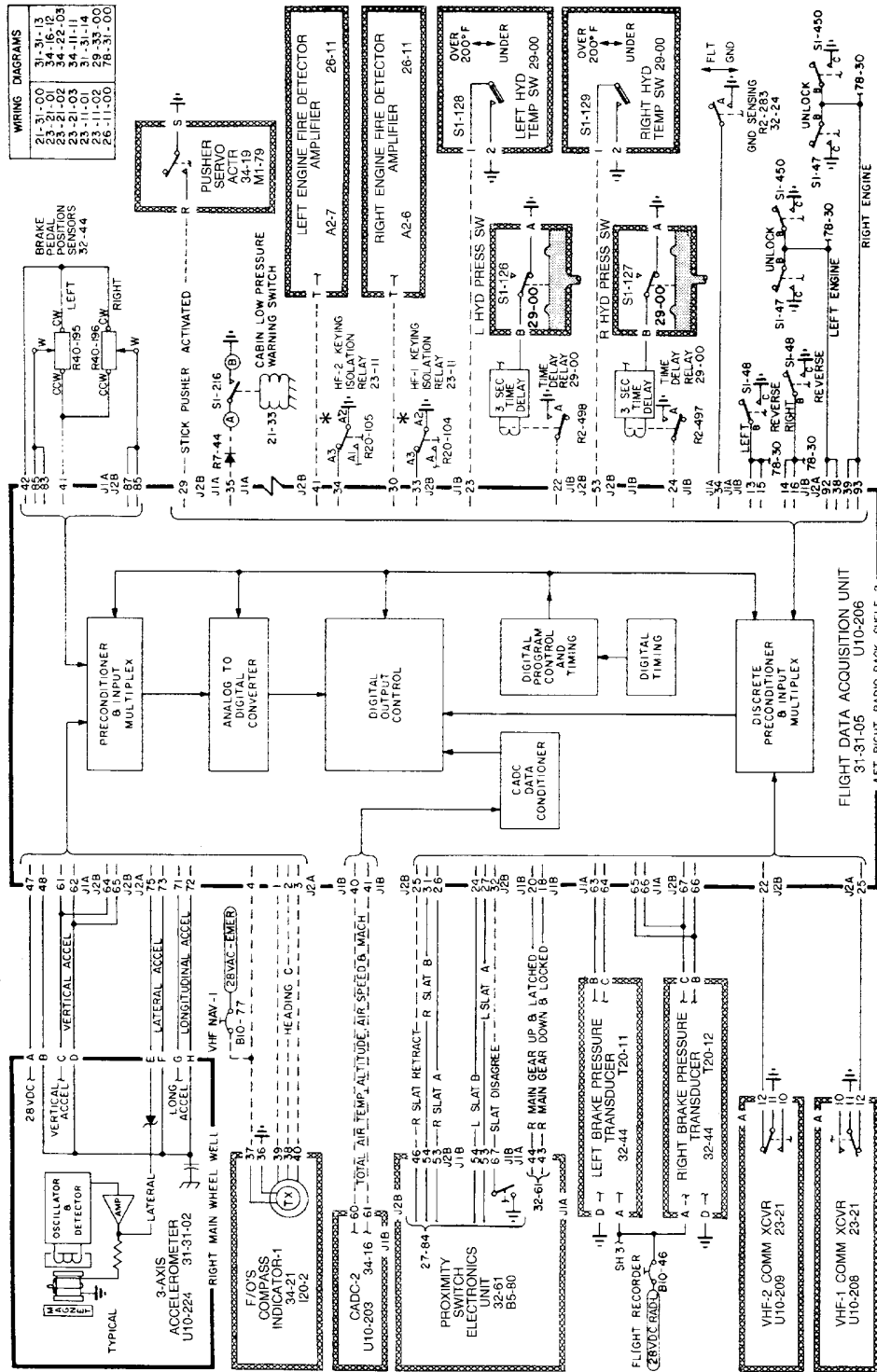
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 6 of 34)

EFFECTIVITY
WJE 401-404, 412, 414

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AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 7 of 34)

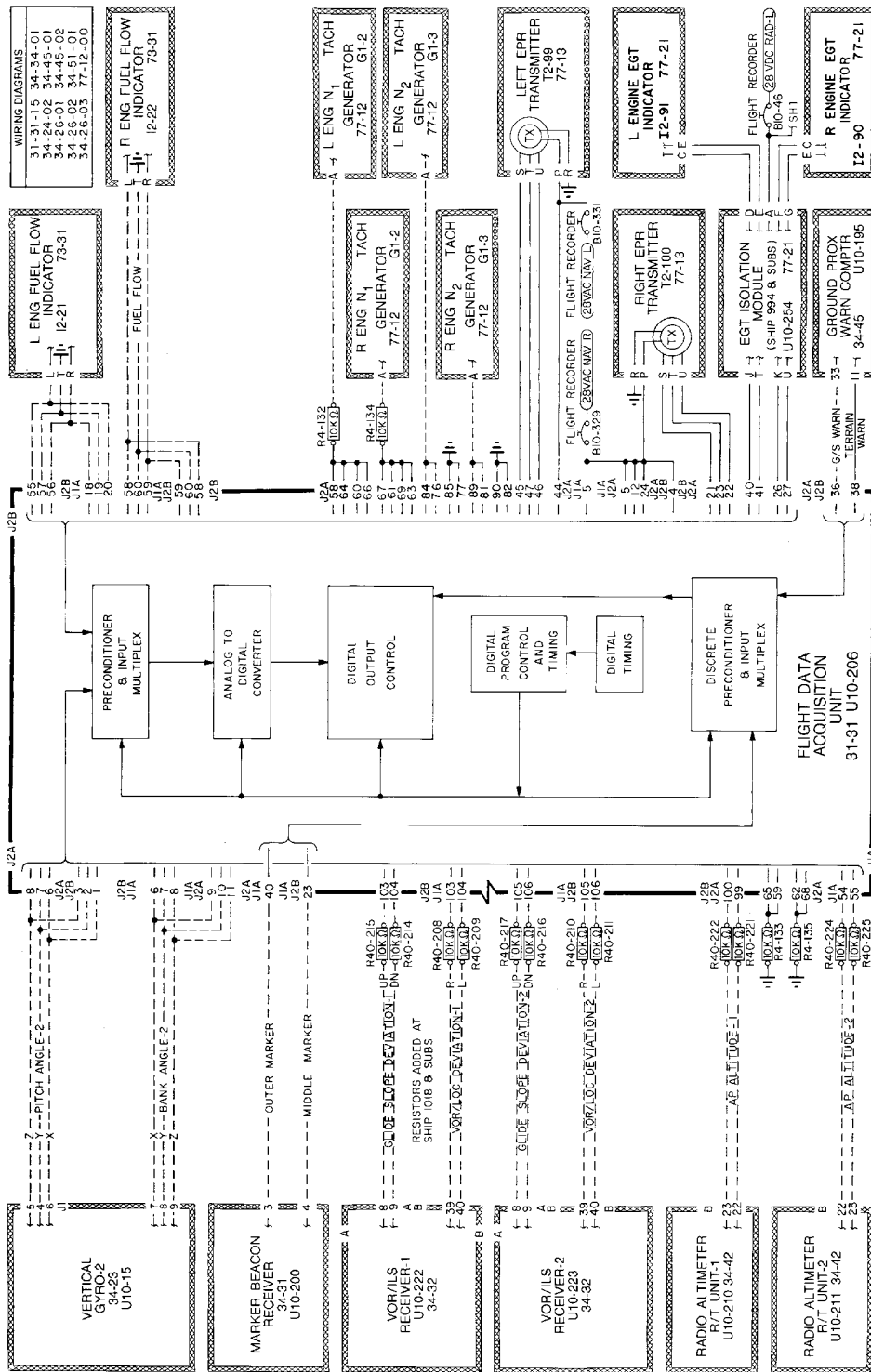
* EFFECTIVE ON SOME AIRCRAFT
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.
MDC PROPRIETARY
BBB2-31-459A

EFFECTIVITY
WJE 873, 874, 892, 893

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AIDS Parameters System Schematic
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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

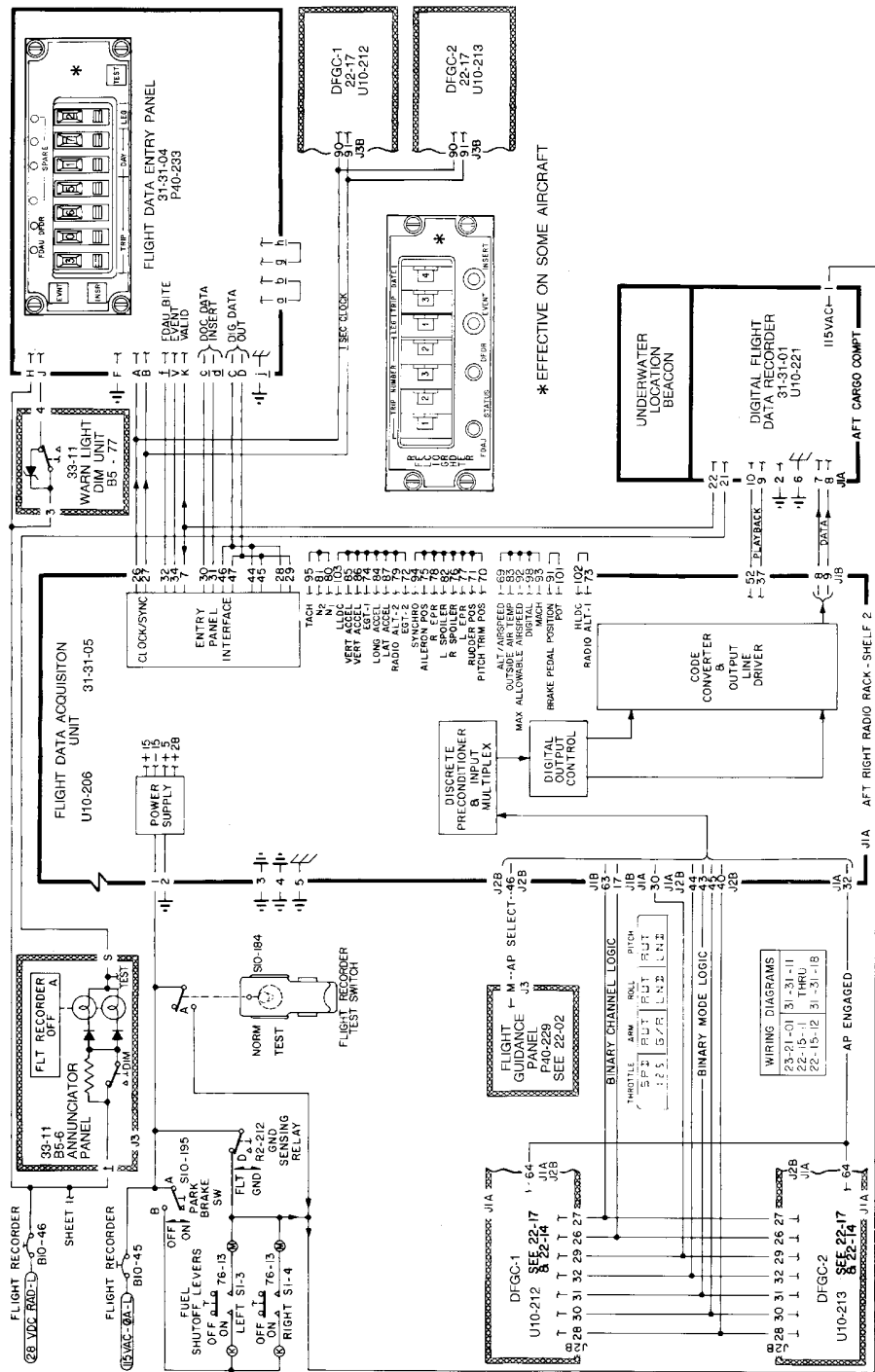
BBB2-31-572B

EFFECTIVITY
WJE 873, 874, 892, 893

TP-80MM-WJE

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AIDS Parameters System Schematic
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BBB2-31-1079

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

AFT RIGHT RADIO RACK-SHELF 2

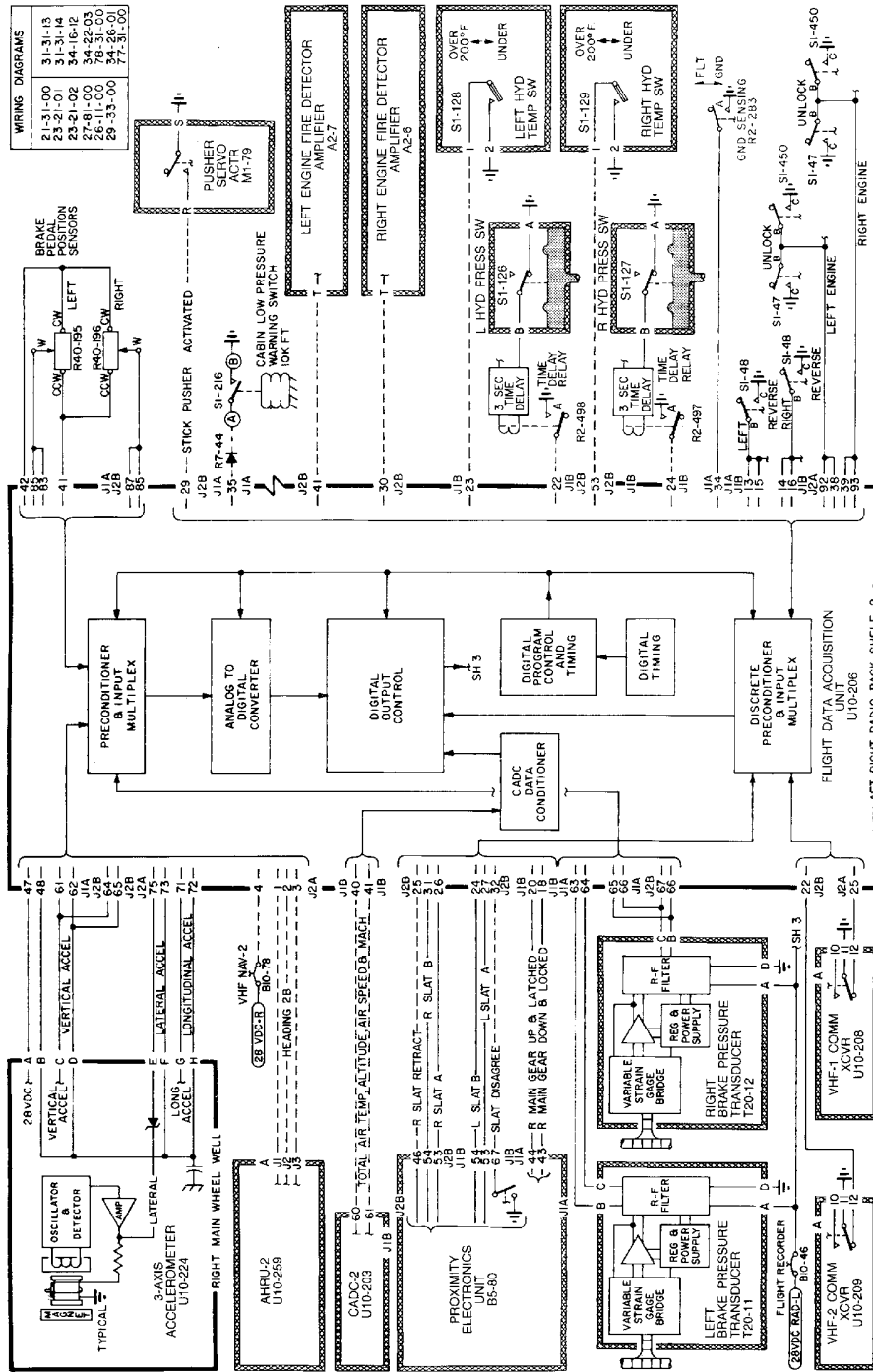
EFFECTIVITY
WJE 873, 874, 892, 893

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TP-80MM-WJE

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BBB2-31-1318

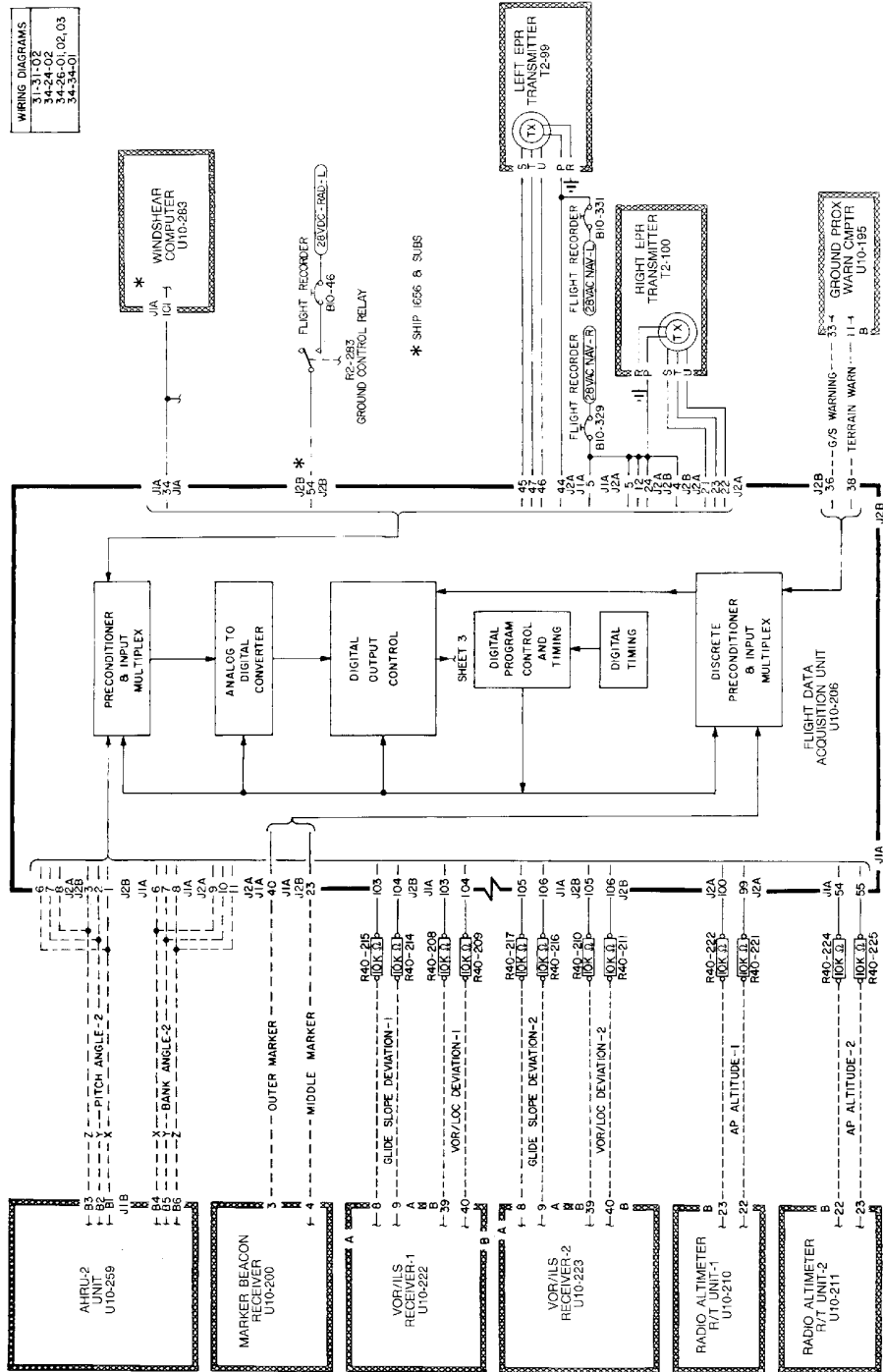
MDC PROPRIETARY

AIDS Parameters System Schematic
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EFFECTIVITY
WJE 886, 887

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MDC PROPRIETARY

BBB2-31-1319

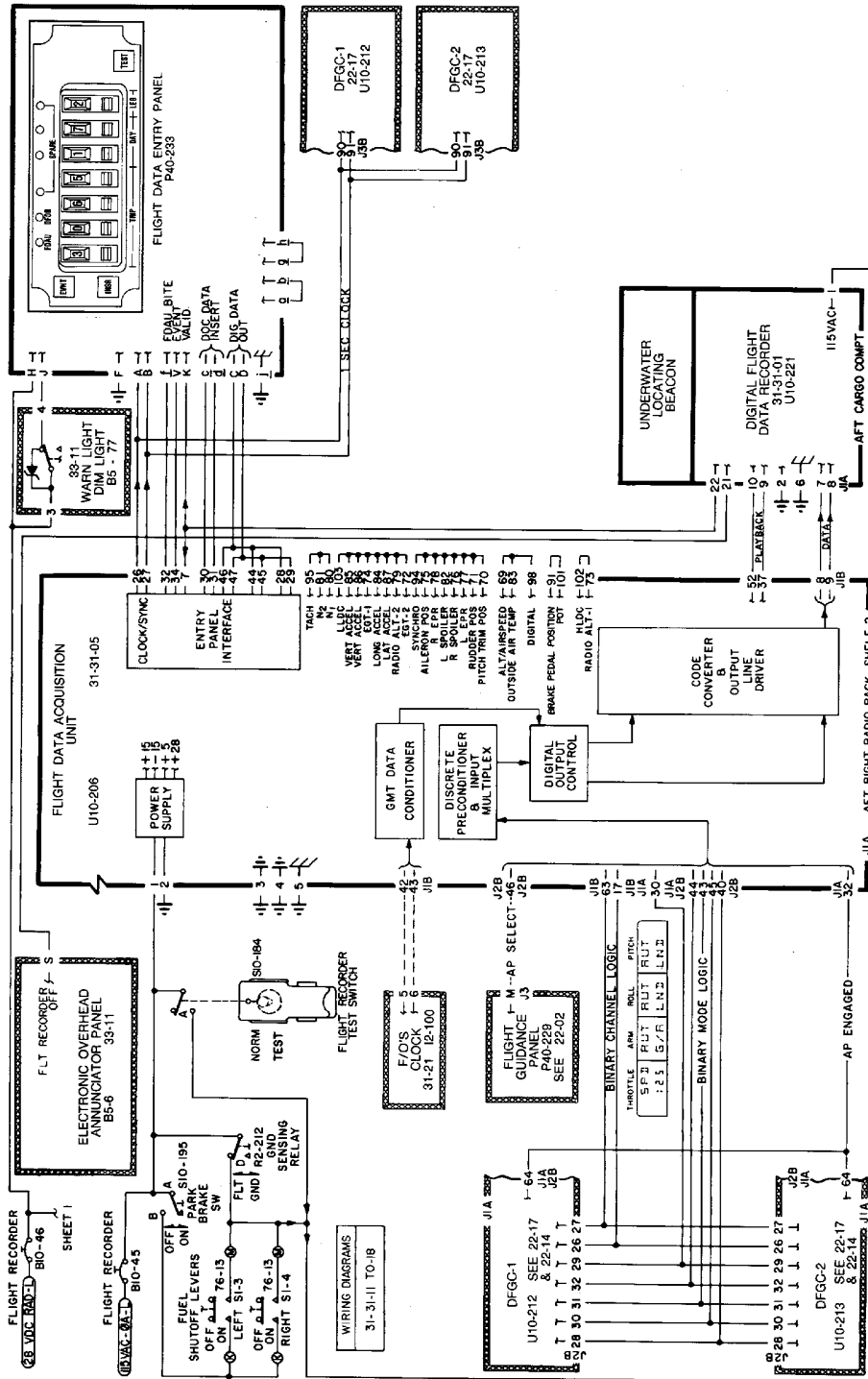
**AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 11 of 34)**

EFFECTIVITY
WJE 886, 887

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BBB2-31-1037

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

AIDS Parameters System Schematic
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EFFECTIVITY
WJE 886, 887

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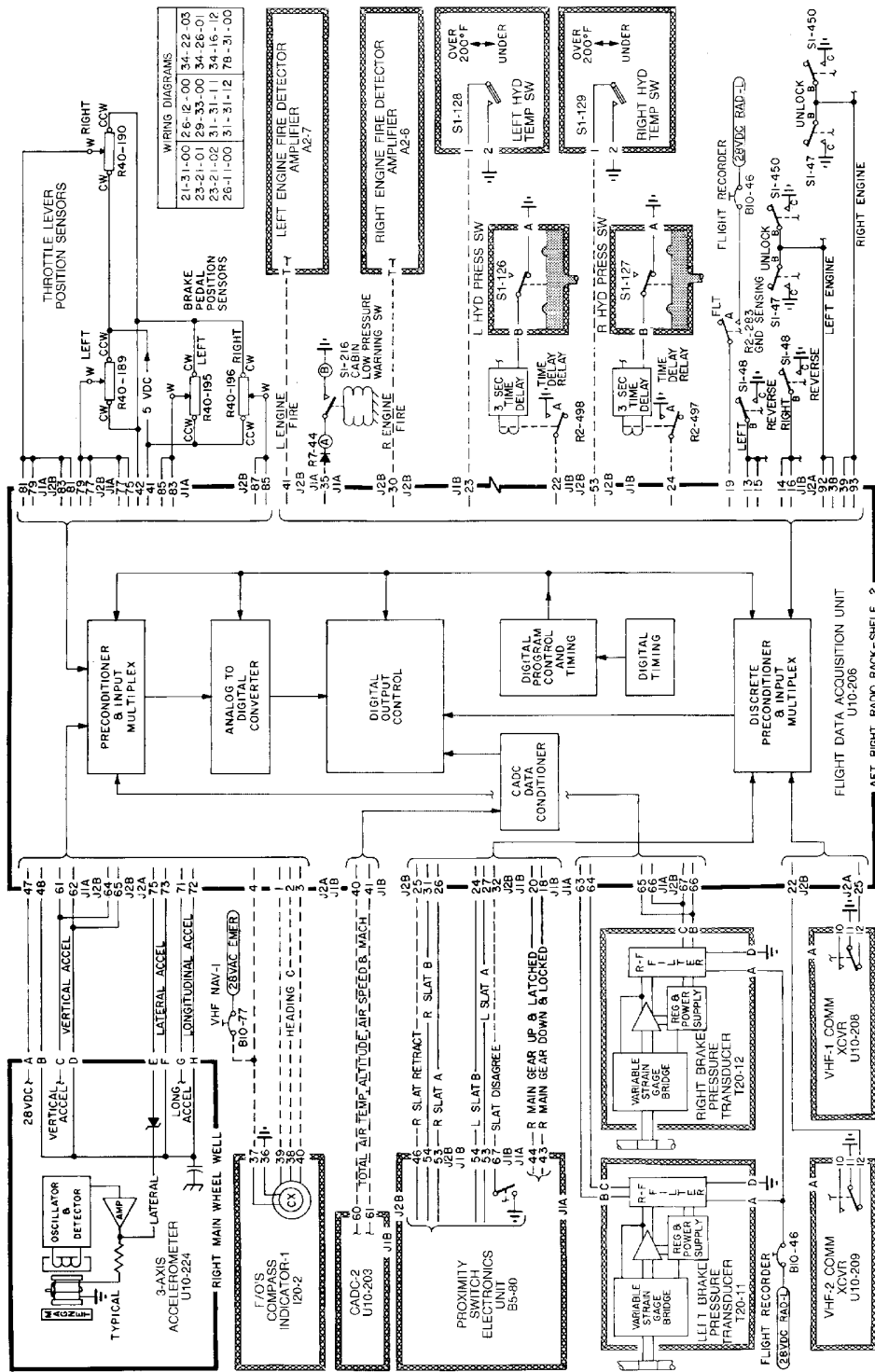
For Instructional Use Only

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AIDS Parameters System Schematic
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BBB2-31-754B

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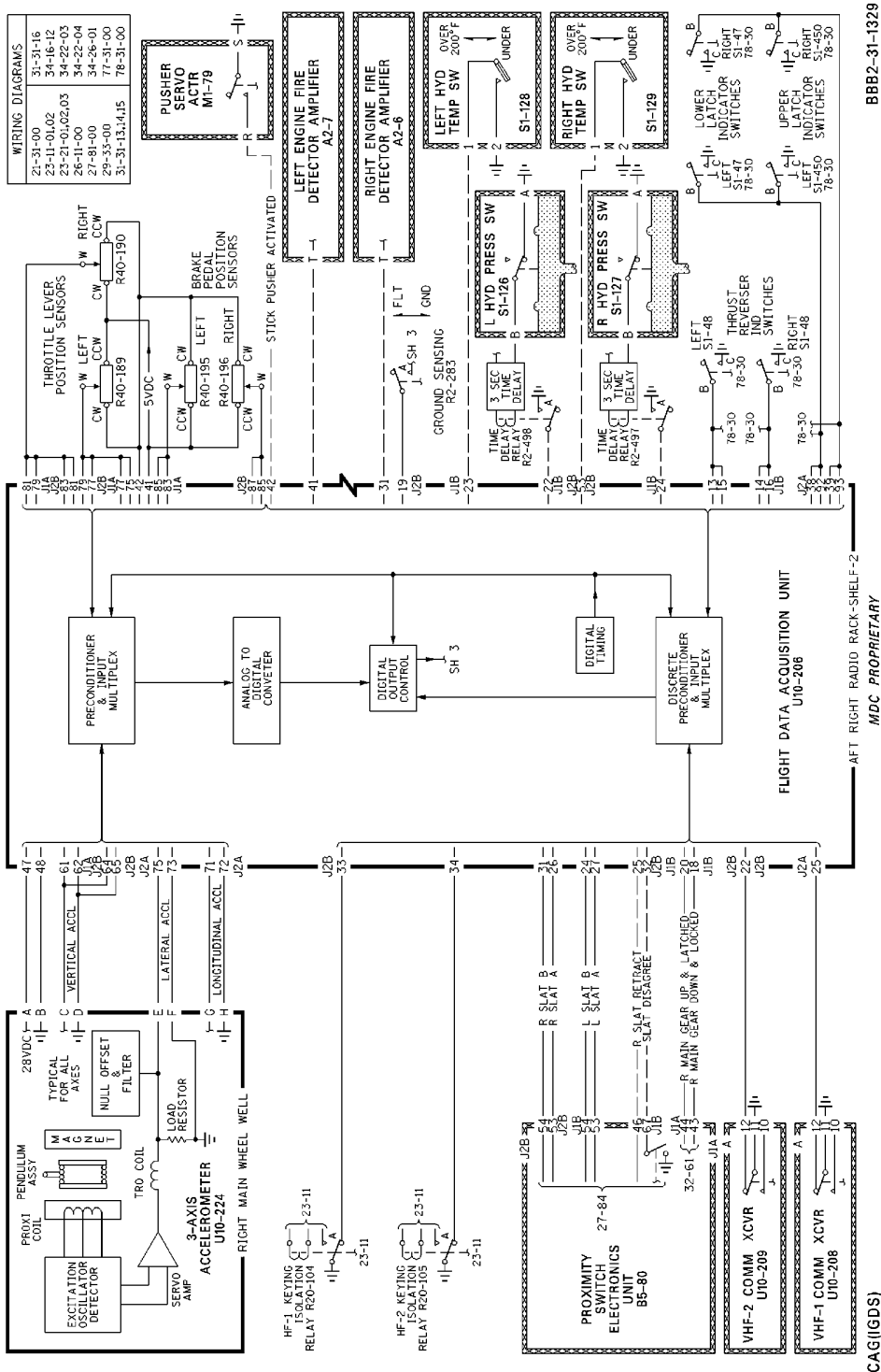
EFFECTIVITY
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

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EFFECTIVITY
WJE 410

TP-80MM-WJE

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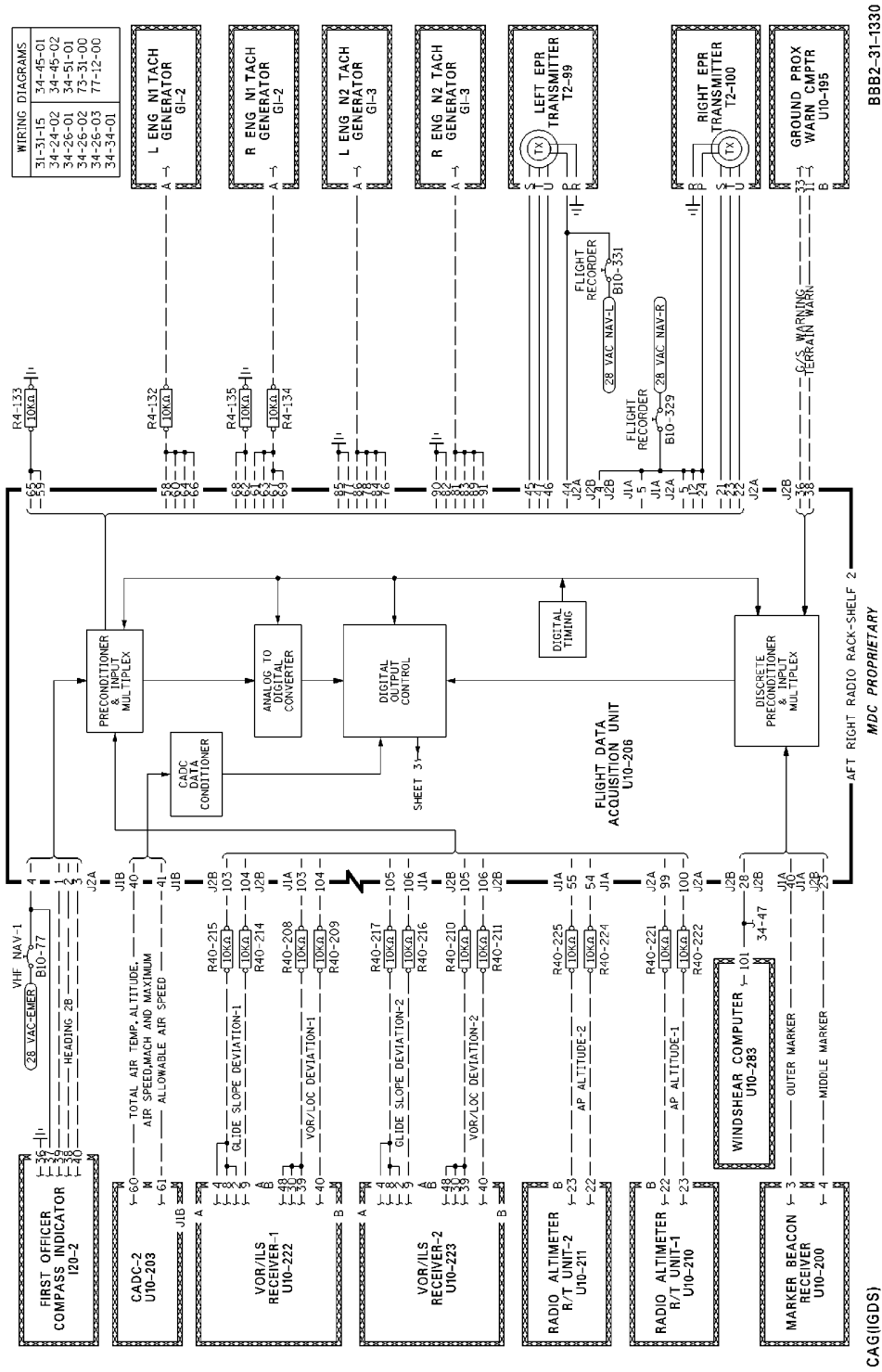
For Instructional Use Only

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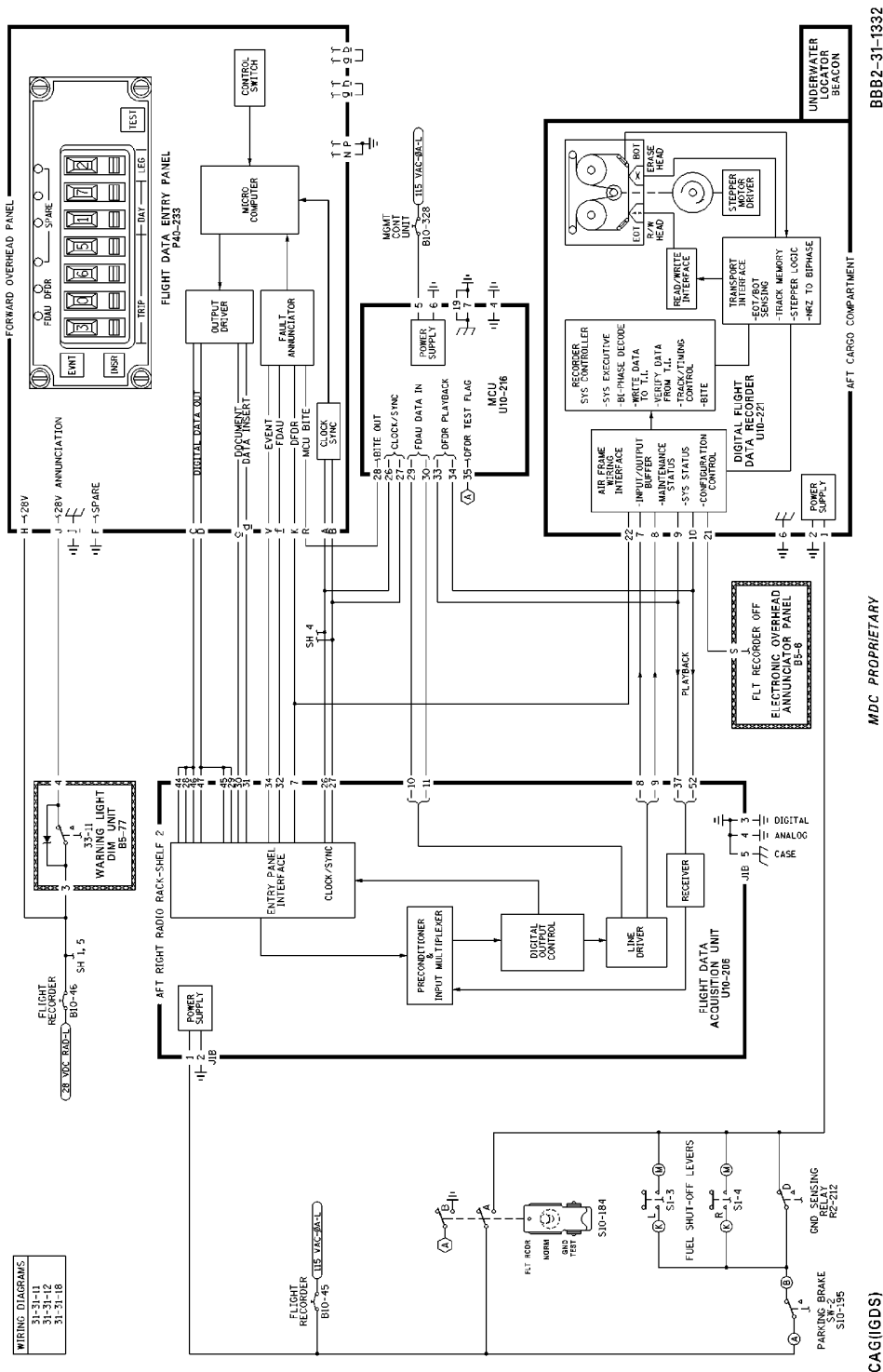


AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 15 of 34)

EFFECTIVITY
WJE 410

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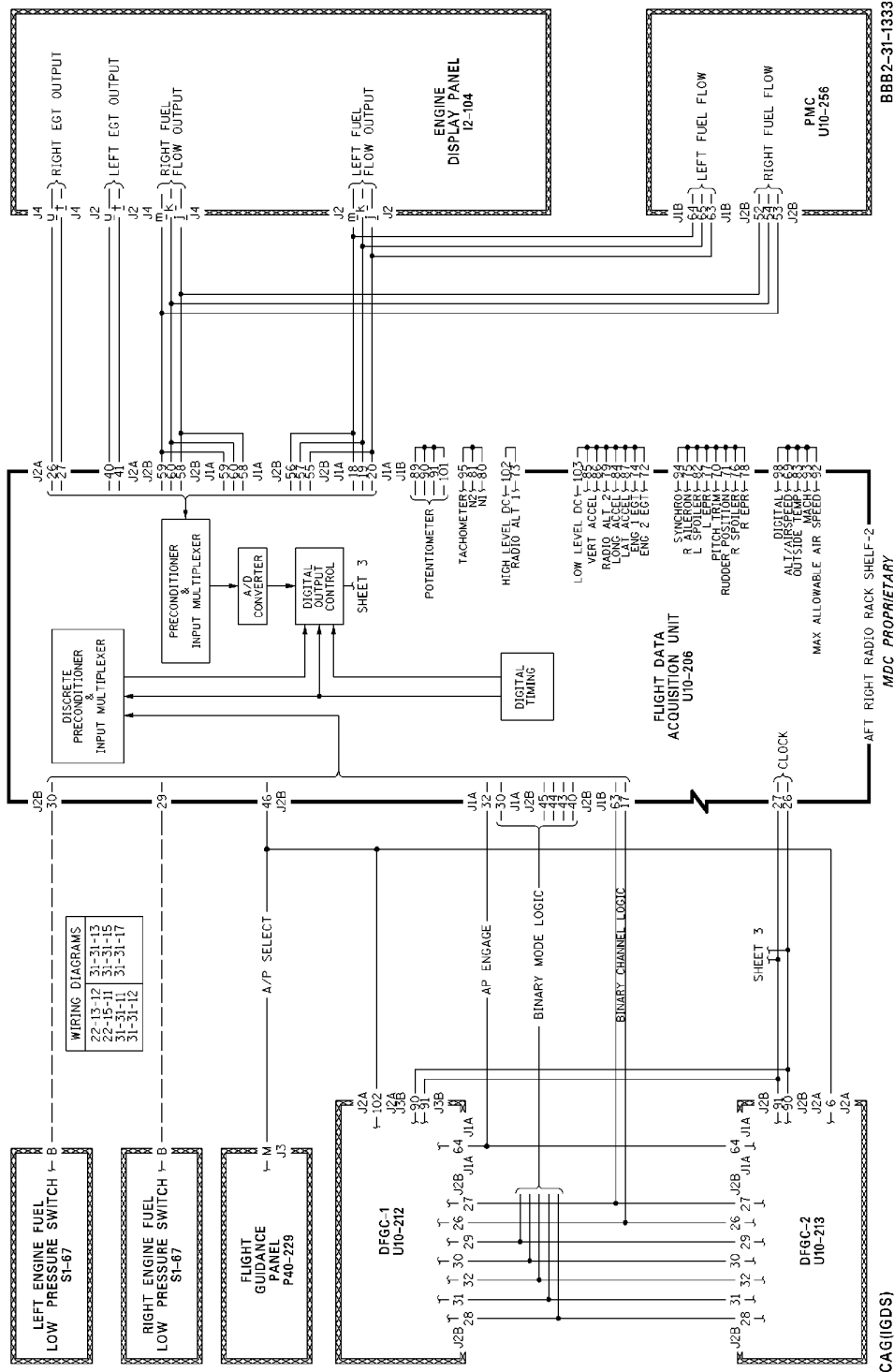


AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 16 of 34)

EFFECTIVITY
WJE 410

31-31-00
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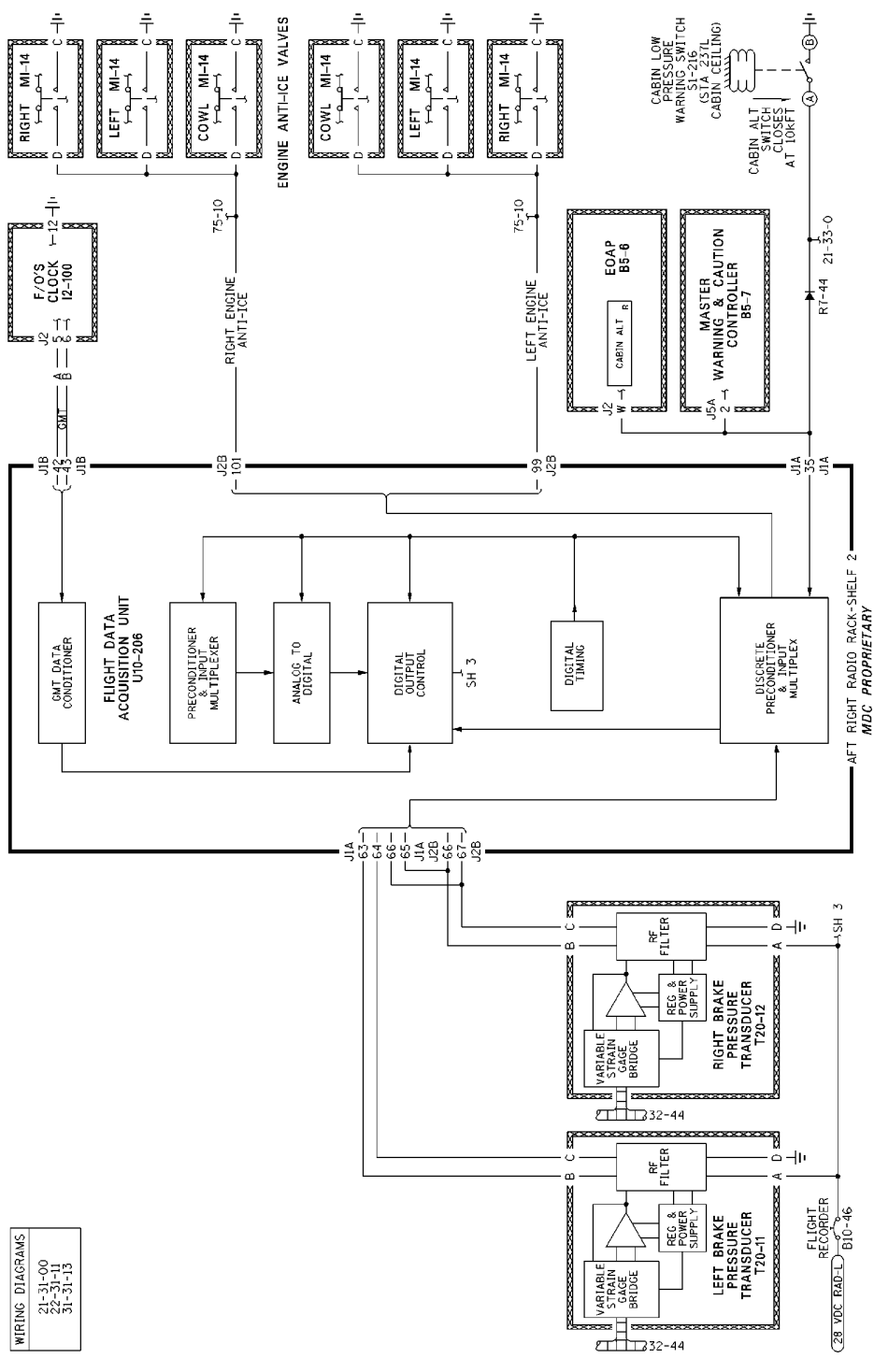


AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 17 of 34)

EFFECTIVITY
WJE 410

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WIRING DIAGRAMS
21-31-00
22-31-11
31-31-13

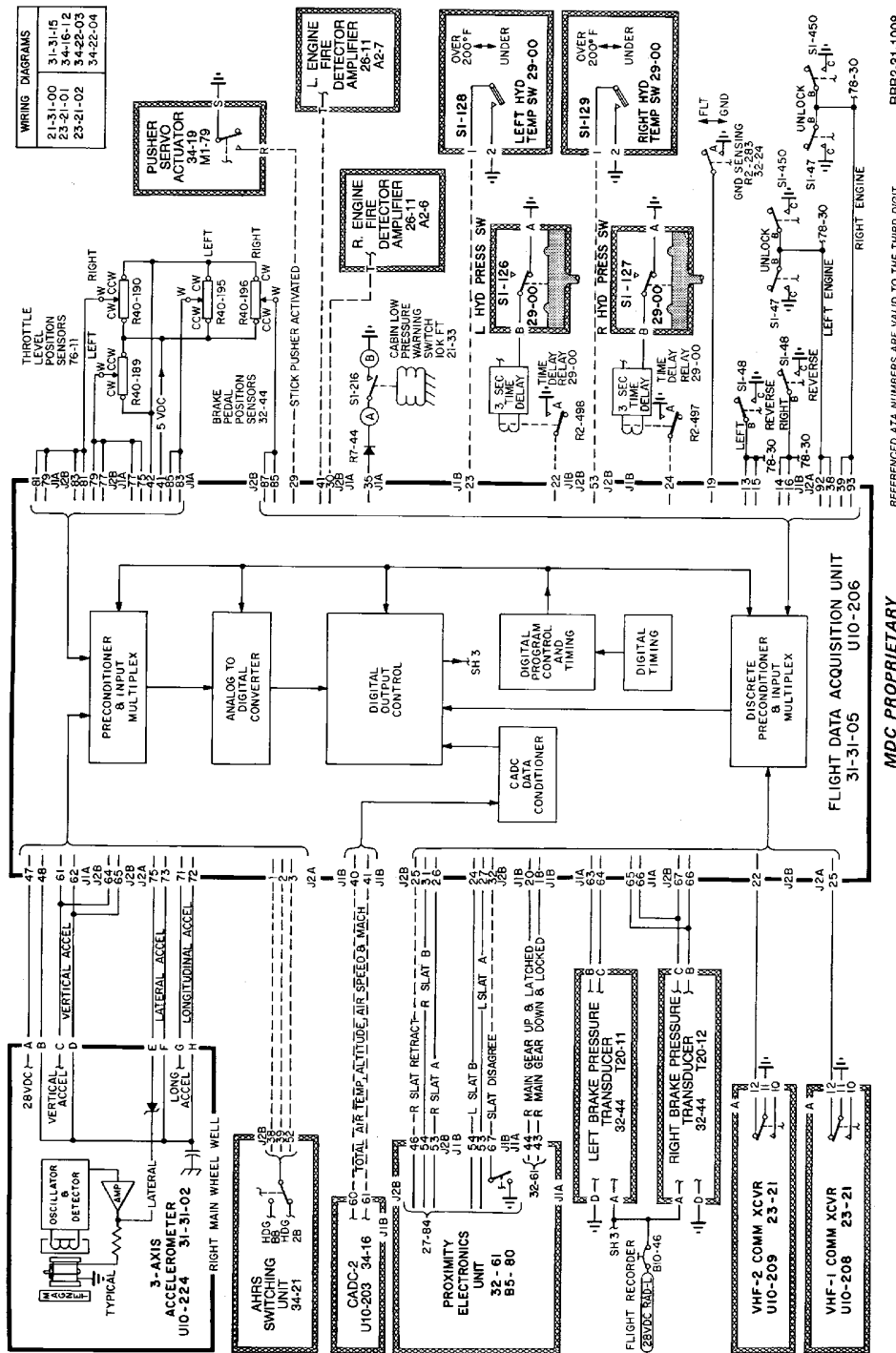
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 18 of 34)

EFFECTIVITY
WJE 410

31-31-00
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AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 19 of 34)

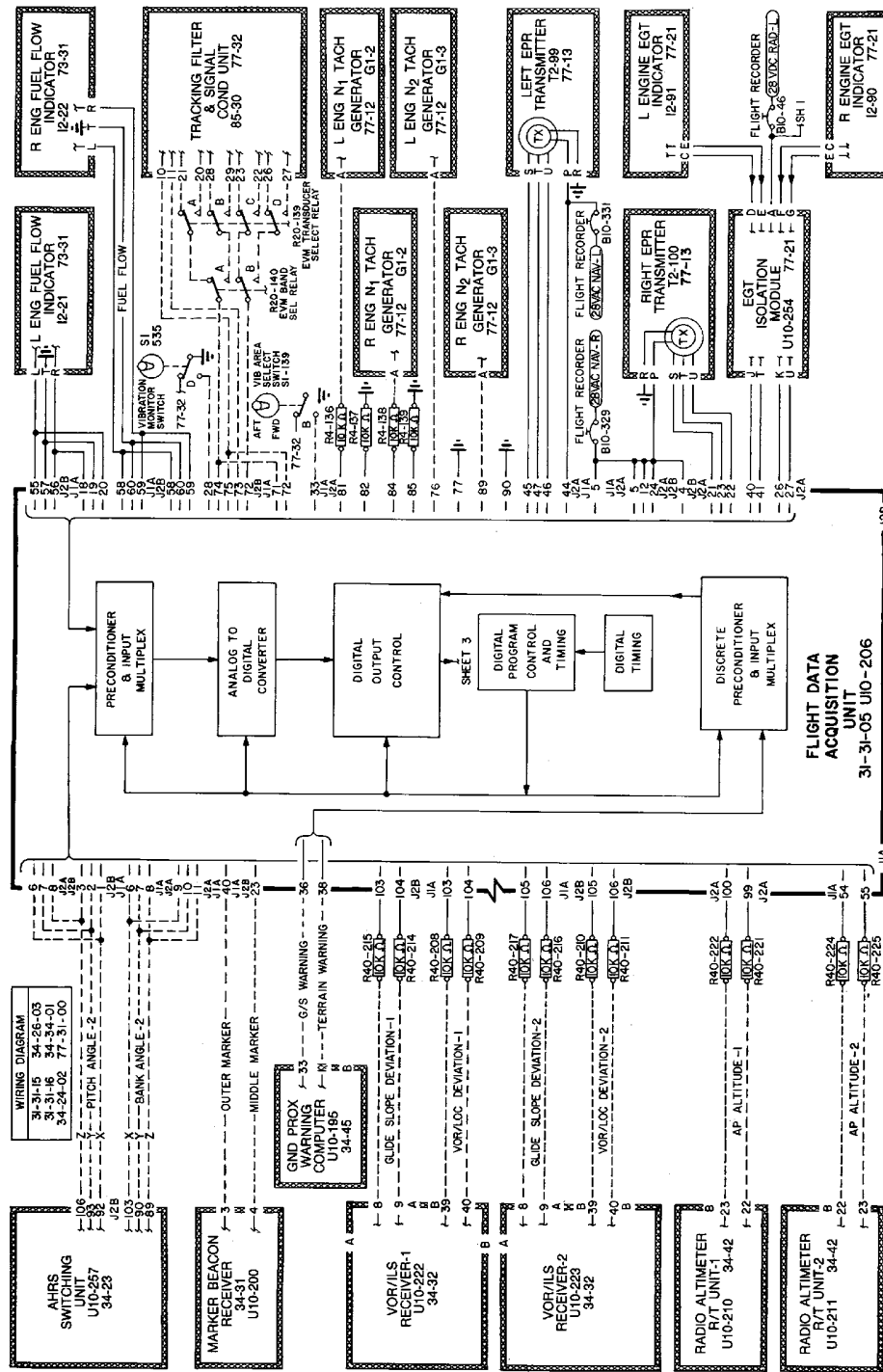
EFFECTIVITY
WJE 407, 408, 411, 880

TP-80MM-WJE

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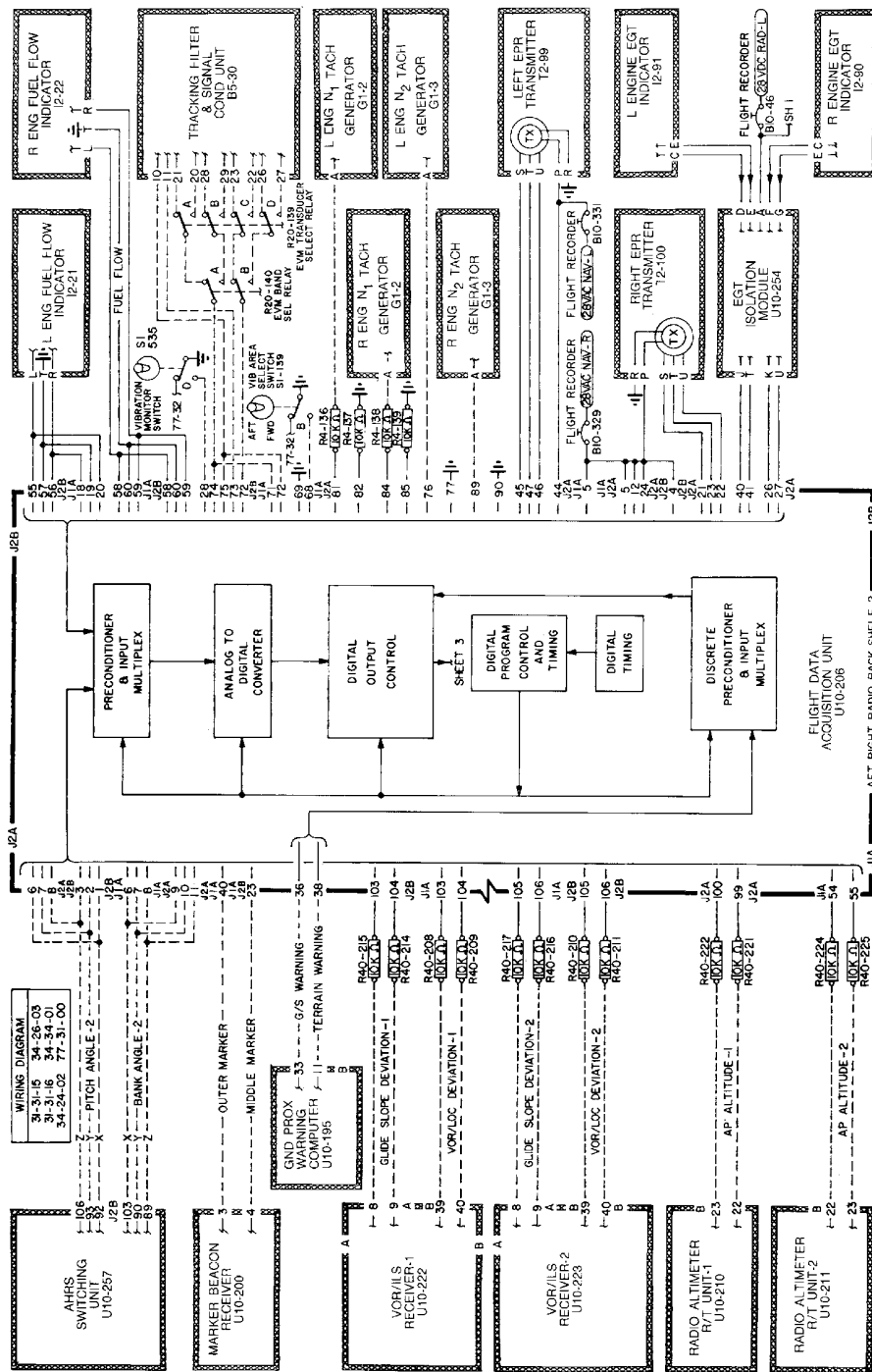
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 20 of 34)

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT. **MDC PROPRIETARY** BBB2-31-1009

EFFECTIVITY
WJE 880

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MDC PROPRIETARY

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EFFECTIVITY
WJE 407, 408, 411

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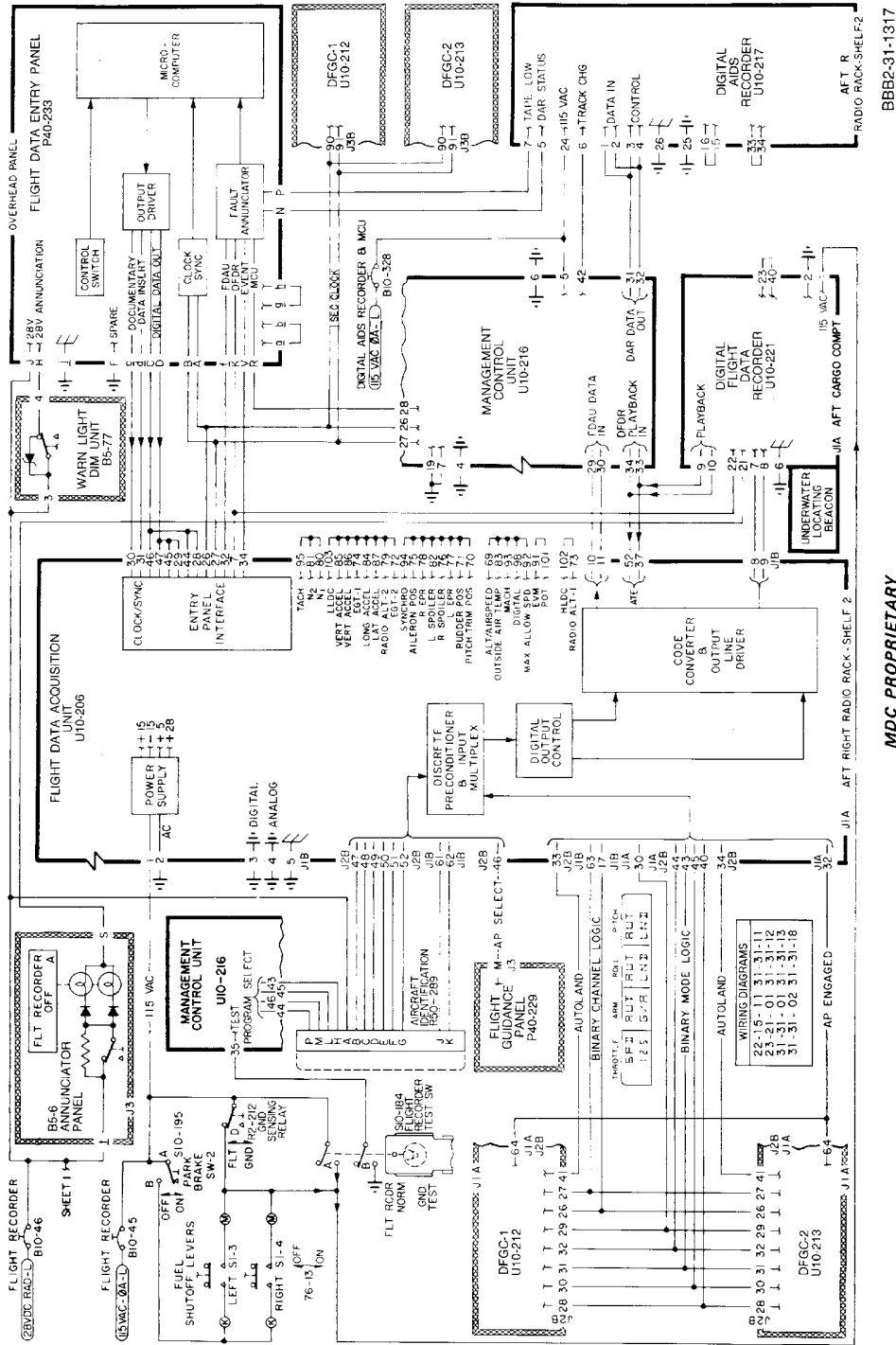
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BBB2-31-1317

MDC PROPRIETARY

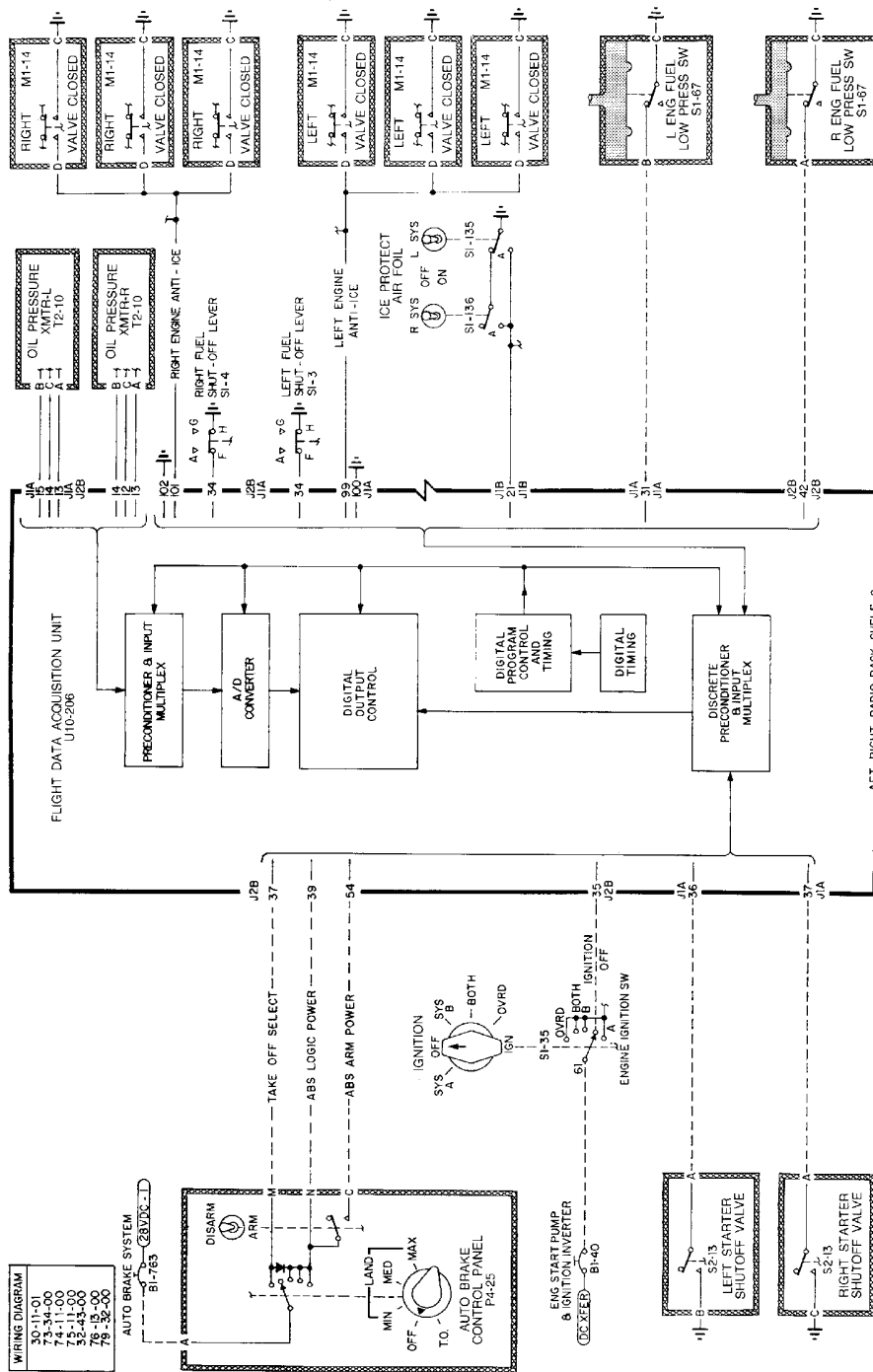
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 22 of 34)

EFFECTIVITY
WJE 407, 408, 411, 880

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BBB2-31-1011A

MDC PROPRIETARY

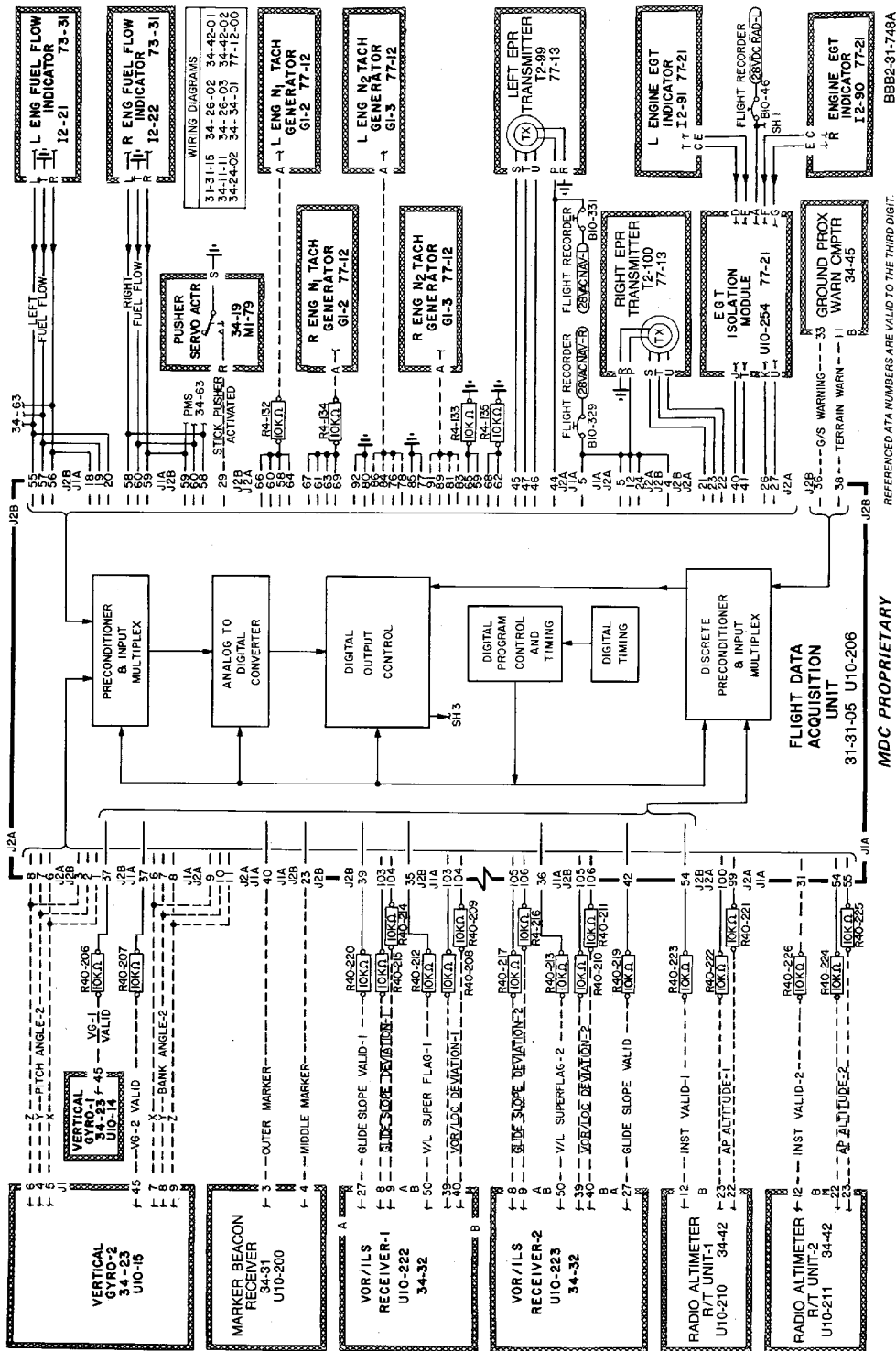
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 23 of 34)

EFFECTIVITY
WJE 407, 408, 411, 880

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AIDS Parameters System Schematic
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EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

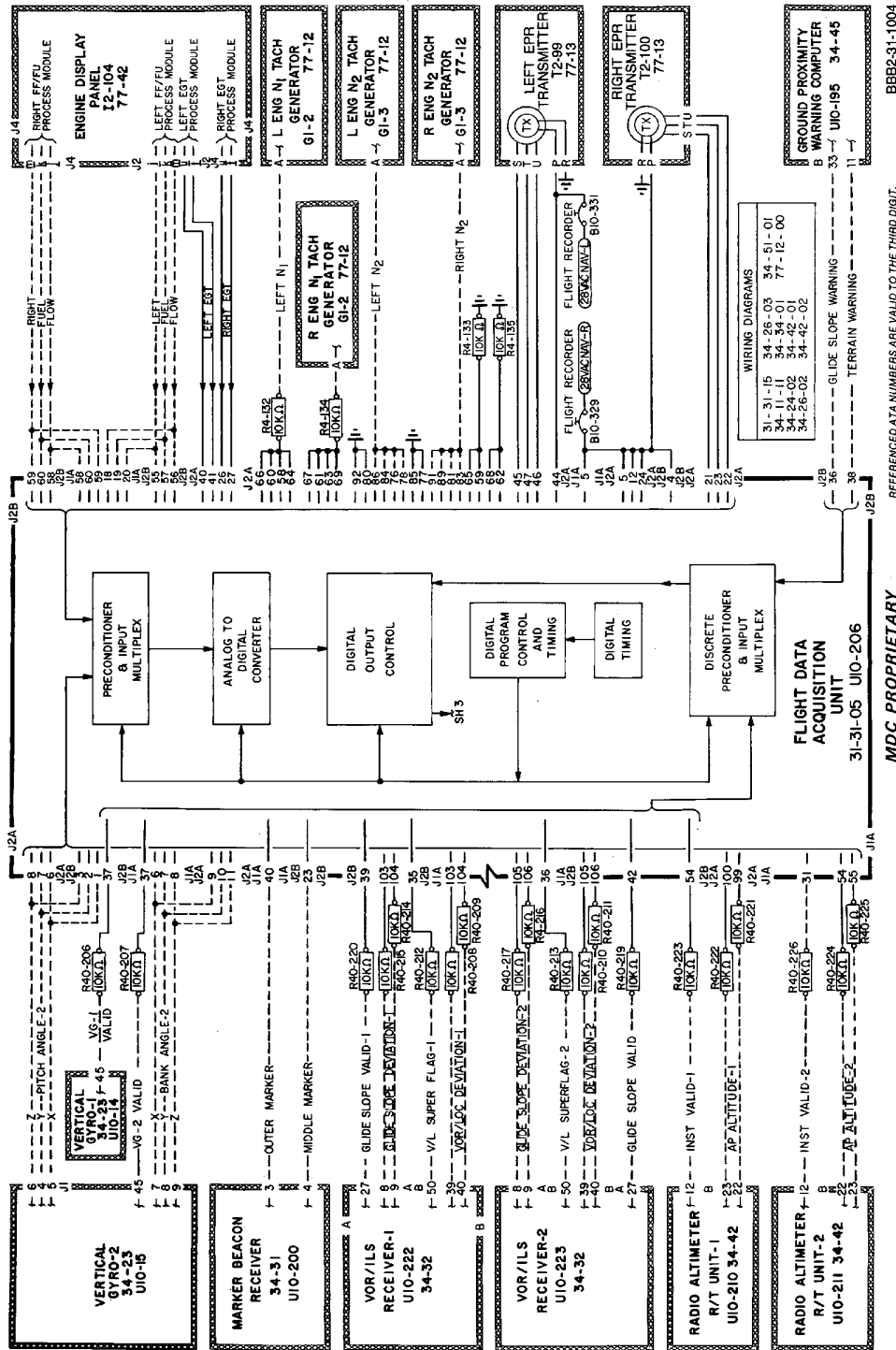
TP-80MM-WJE

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**AIDS Parameters System Schematic
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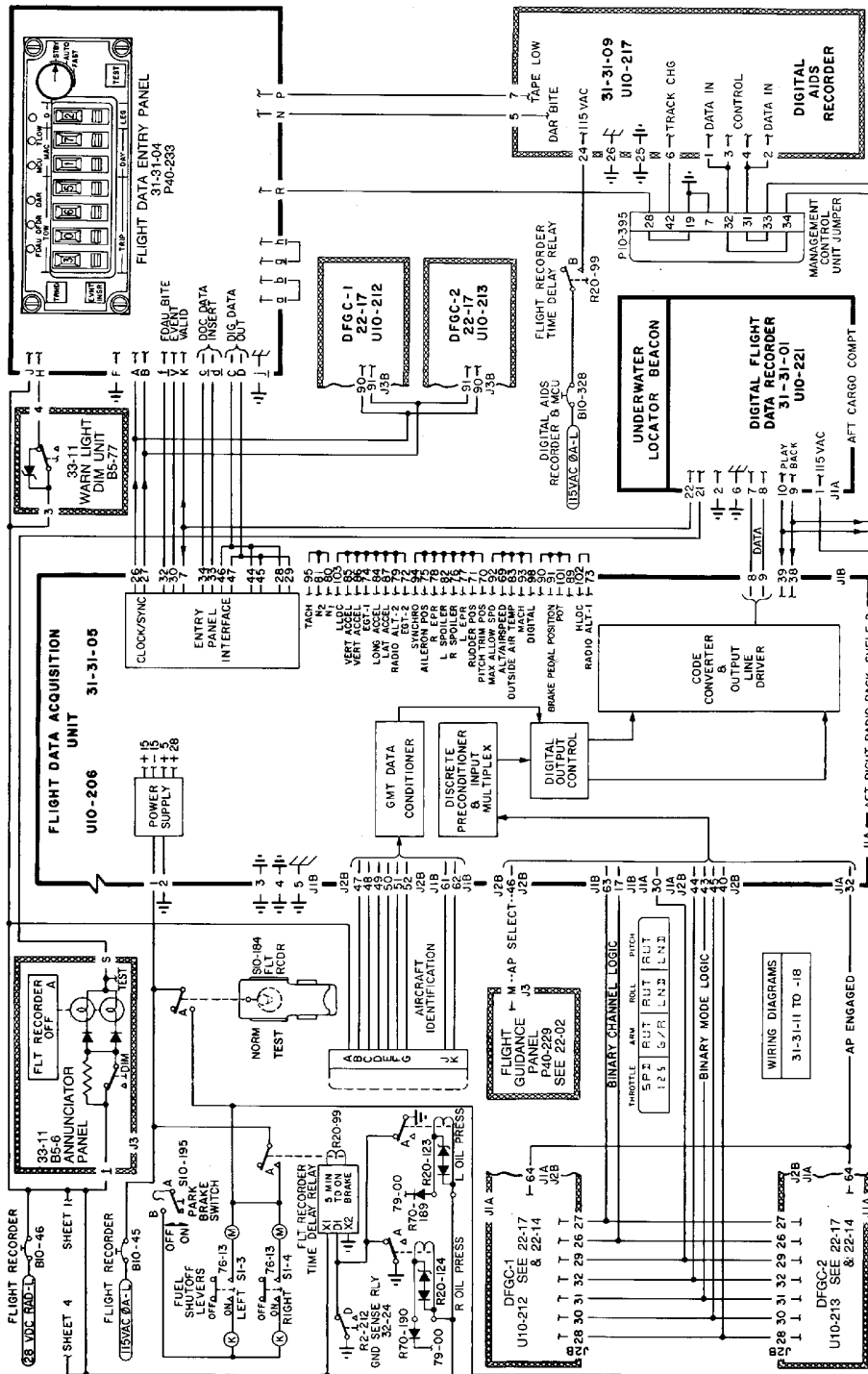
EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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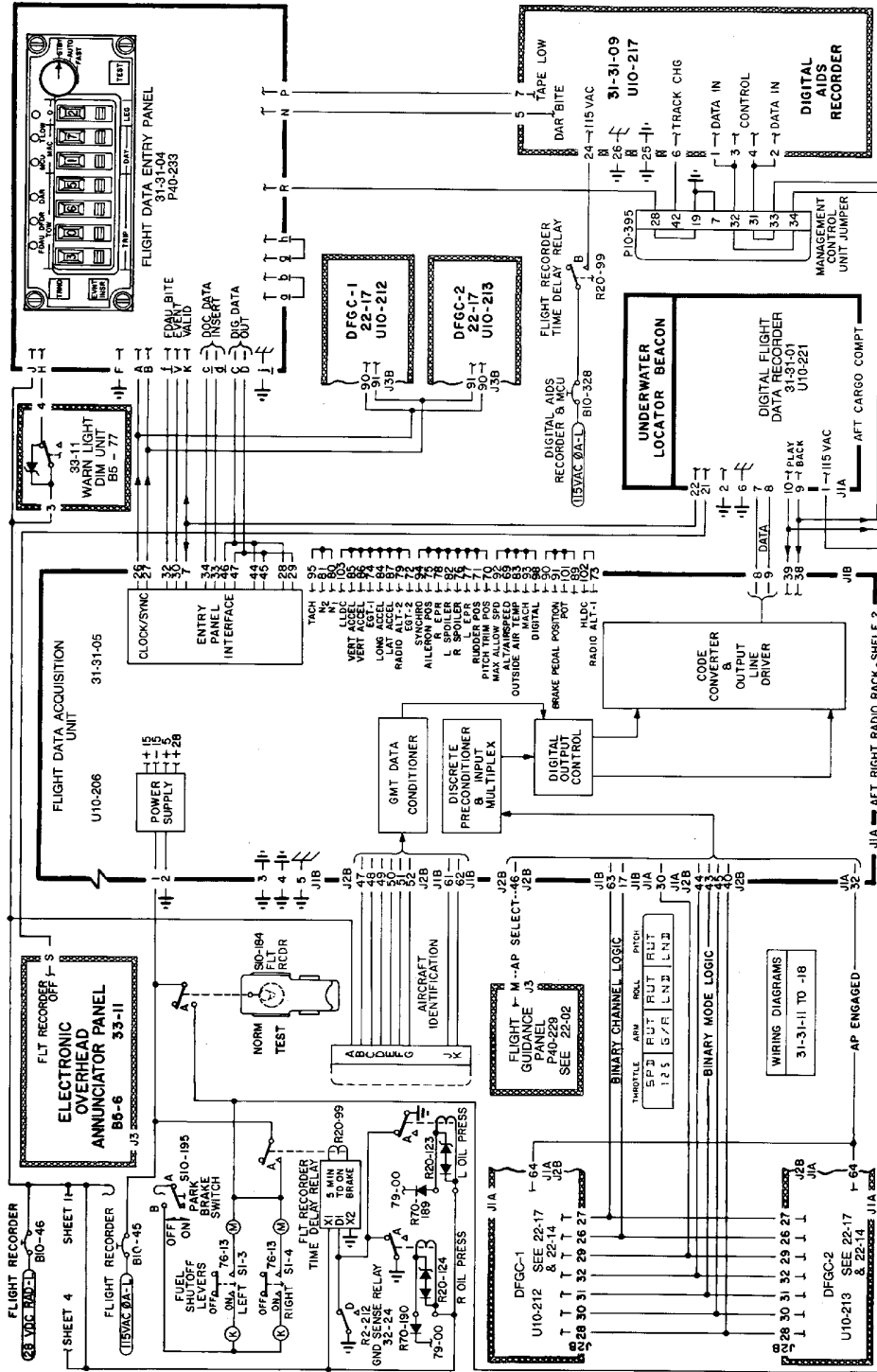
AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 26 of 34)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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AIDS Parameters System Schematic
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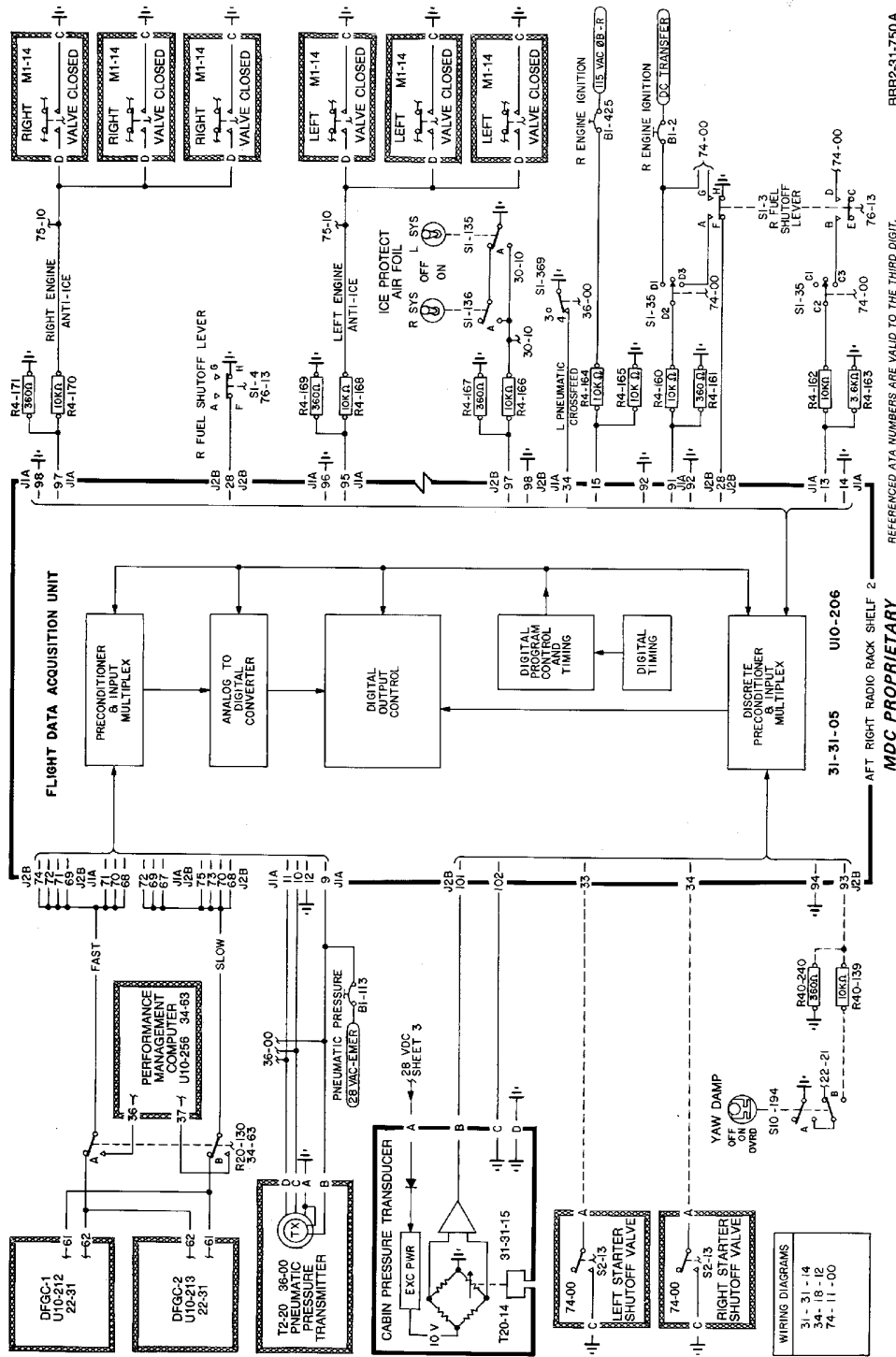
BBB2-31-1005
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.
MDC PROPRIETARY
JIA - AFT RIGHT RADIO RACK - SHELF 2
AP ENGAGED

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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BBB2-31-750A
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

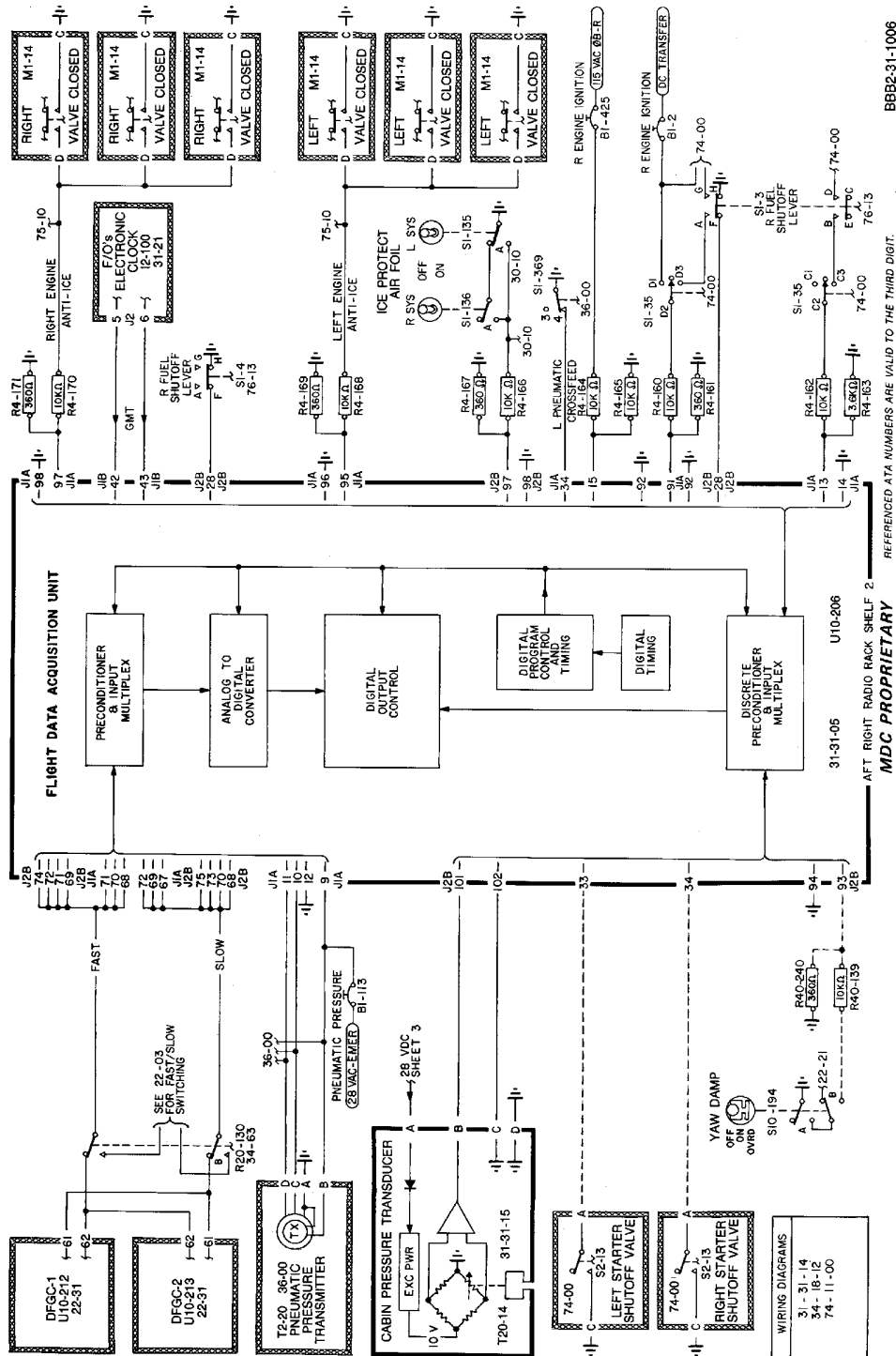
MDC PROPRIETARY
AFT RIGHT RADIO RACK SHELF 2

AIDS Parameters System Schematic
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EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

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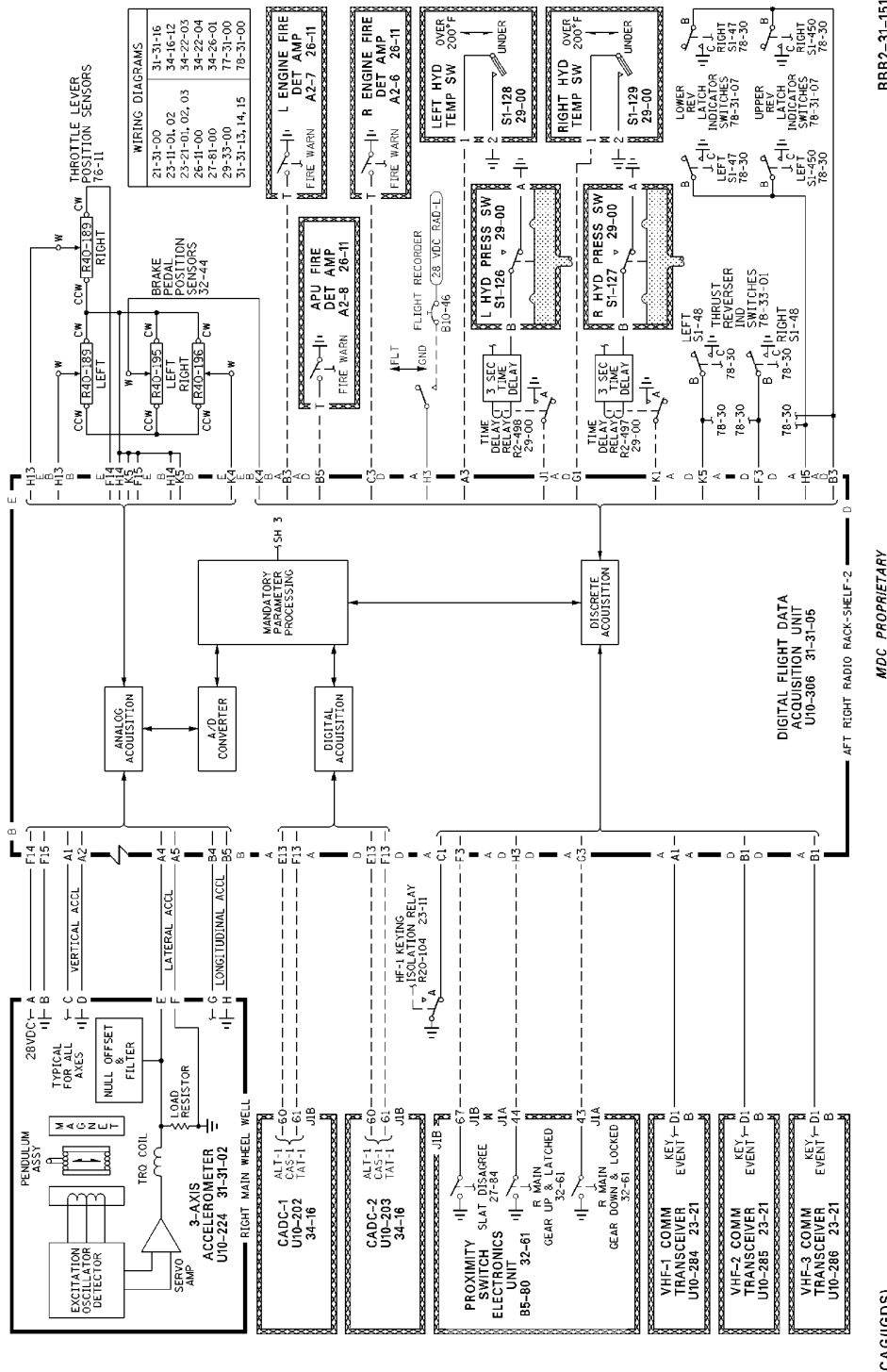


AIDS Parameters System Schematic
Figure 2/31-31-00-990-803 (Sheet 29 of 34)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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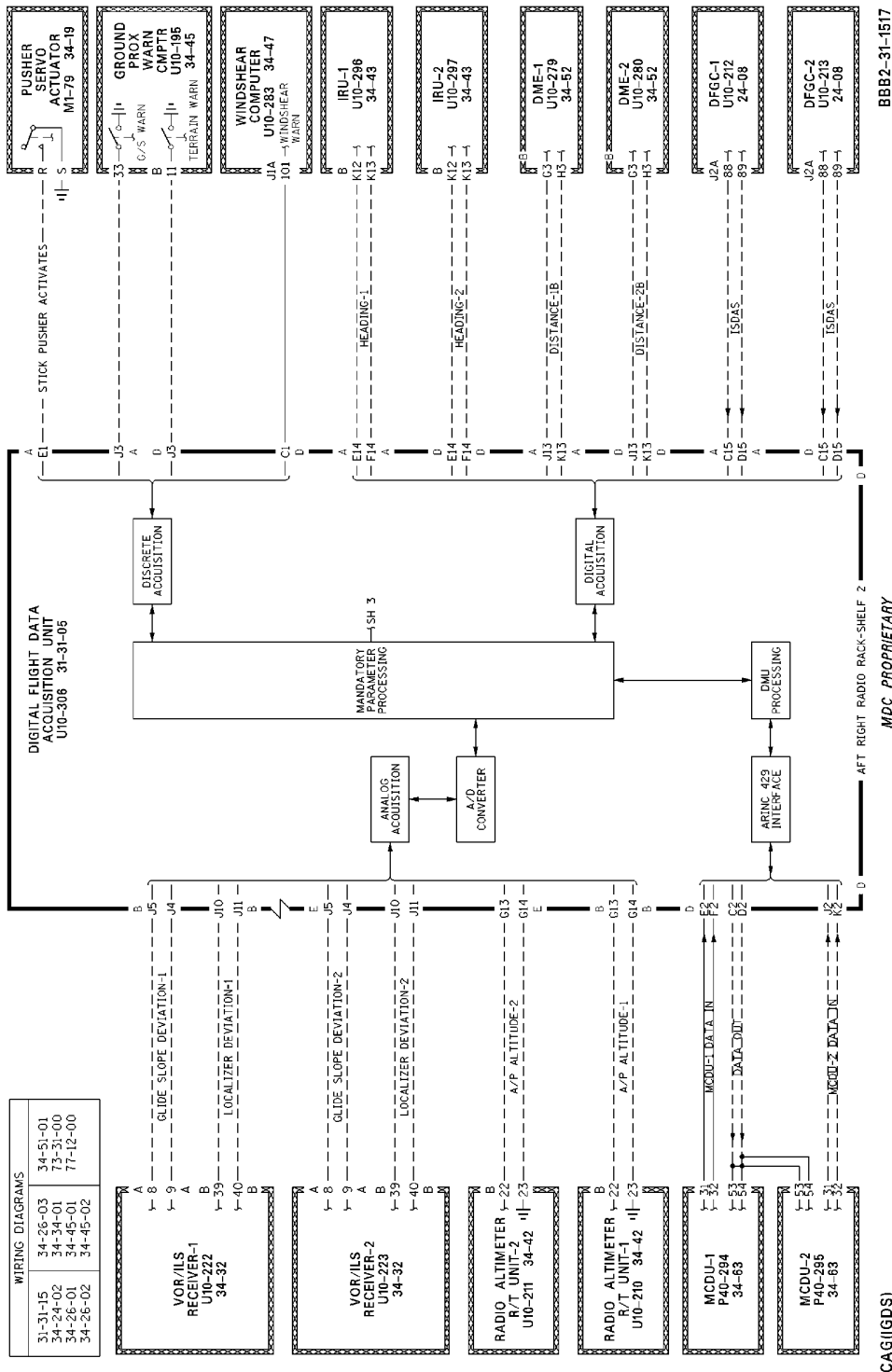
AIDS Parameters System Schematic
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EFFECTIVITY
WJE 875, 876

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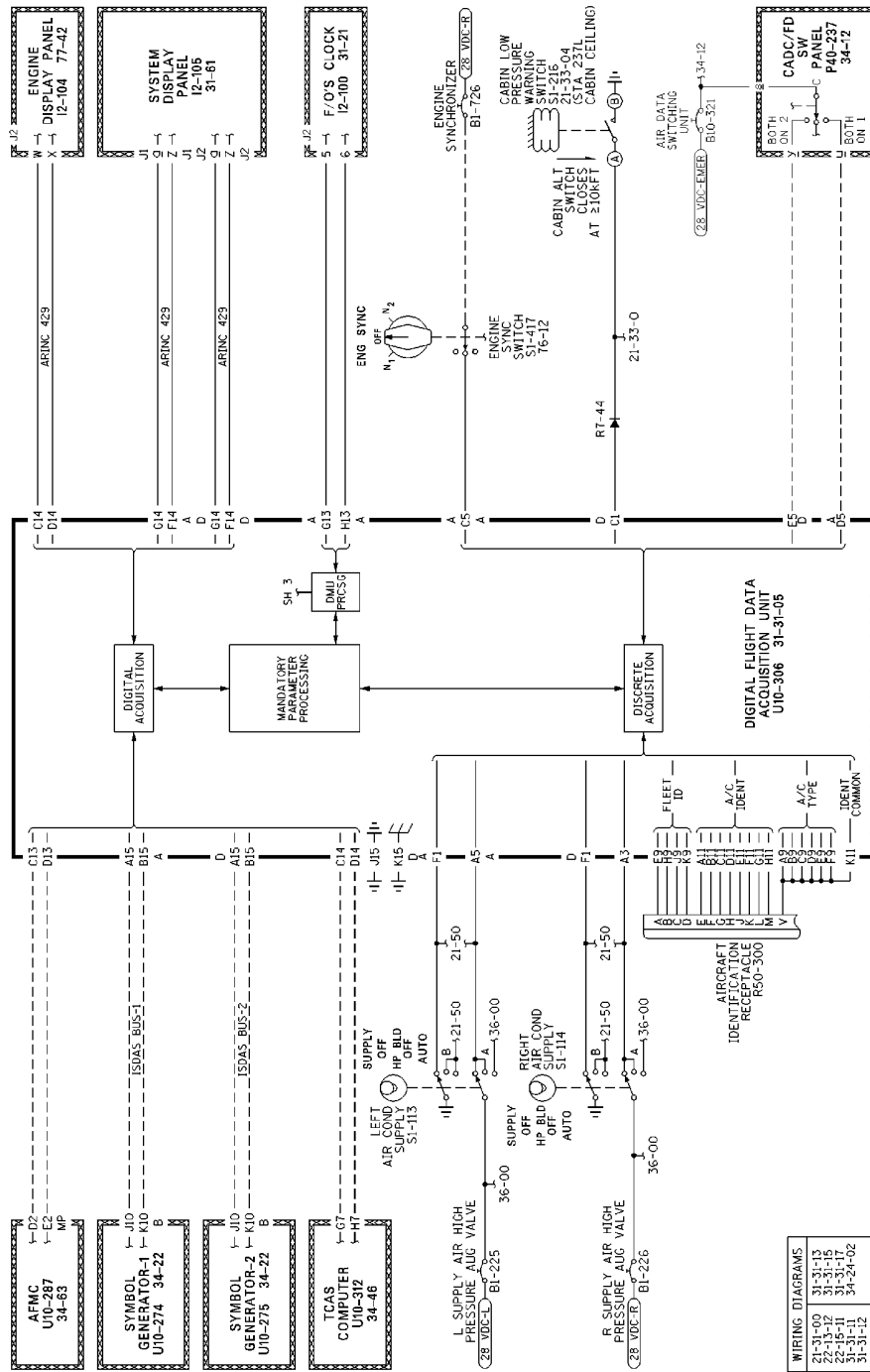
EFFECTIVITY
WJE 875, 876

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AIDS Parameters System Schematic
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BBB2-31-1519

MDC PROPRIETARY

CAG(I)GDS

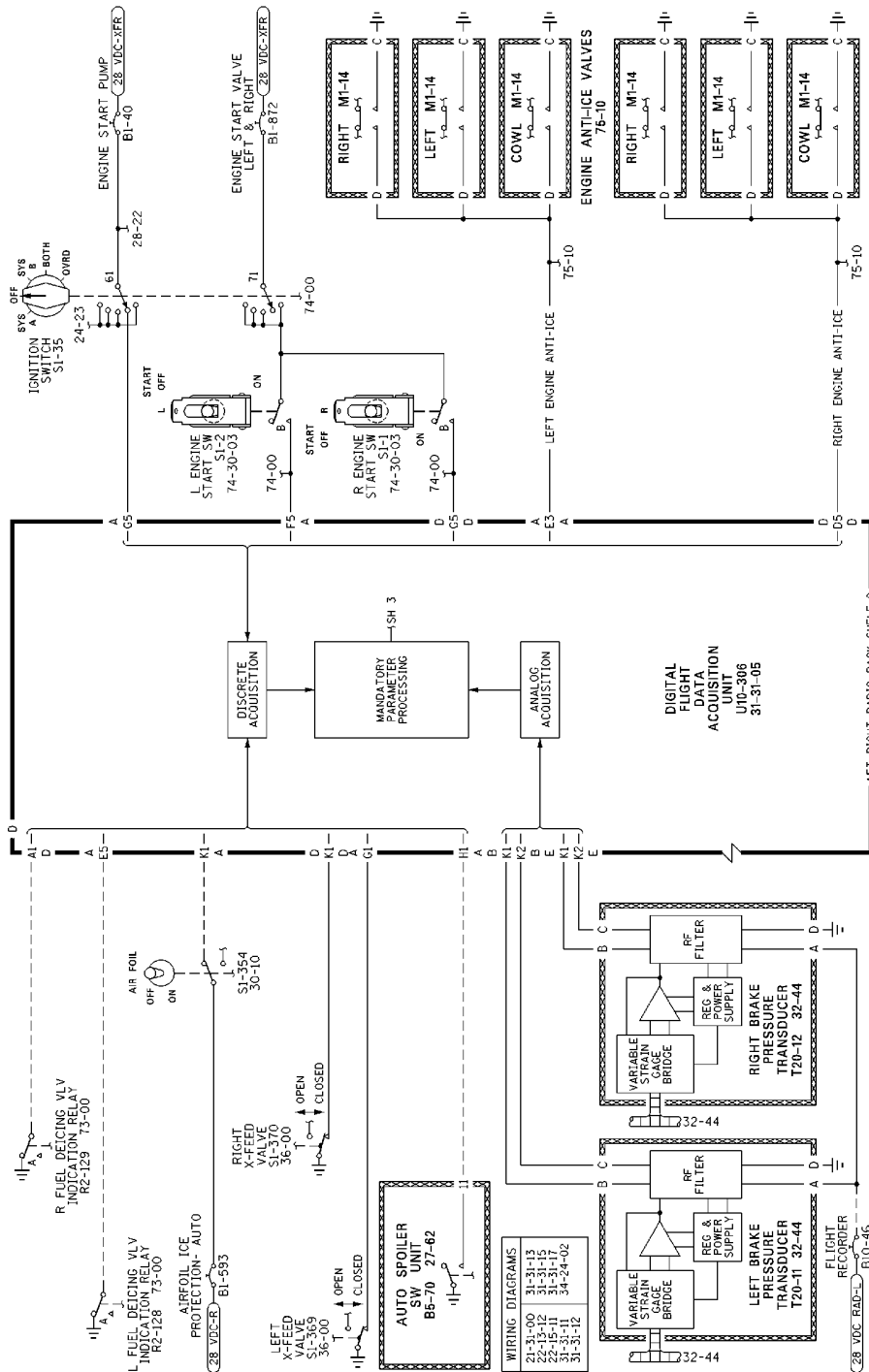
EFFECTIVITY
WJE 875, 876

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BBB2-31-1520

MDC PROPRIETARY

CAG(IIGDS)

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EFFECTIVITY
WJE 875, 876

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FLIGHT RECORDER - ADJUSTMENT/TEST

1. General

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- A. The digital flight data recorder system consists of a digital flight data recorder (DFDR), a flight data entry panel (FDEP), an accelerometer, a flight data acquisition unit (FDAU), a management control unit (MCU) and a digital aids (quick access) recorder (DAR).

WJE 405, 409, 410, 880, 881, 883, 884, 892, 893

- B. The digital flight data recorder system consists of a digital flight data recorder (DFDR), a flight data entry panel (FDEP), an accelerometer, a flight data acquisition unit (FDAU), and a management control unit (MCU).

WJE 405, 409, 410, 880, 881, 883, 884

NOTE: On some aircraft, a digital AIDS recorder is used.

WJE 886, 887

- C. The digital flight data recorder system consists of a digital flight data recorder (DFDR), a flight data entry panel (FDEP), an accelerometer, and a flight data acquisition unit (FDAU).

WJE 407, 408, 410, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- D. The following procedures consist of an operational check and a system test. These tests provide a complete test of the entire recording system including all the input parameters. The systems or sensors that provide these parameters must be operational and will provide all the required signals for the recording system except the acceleration signals and the FDEP inputs. Every parameter monitored by the recording system is processed and recorded on the DFDR. The POWER LEVER ANGLE - left and - right potentiometers are used in the flight recorder system only and are discussed in POWER LEVER ANGLE POTENTIOMETER - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-08/201.

WJE 405, 409, 410, 880, 881, 883, 884, 886, 887, 892, 893

- E. The following procedures consist of an operational check and a system test. These tests provide a complete test of the entire recording system including all the input parameters. The systems or sensors that provide these parameters must be operational and will provide all the required signals for the recording system except the acceleration signals and the FDEP inputs. Every parameter monitored by the recording system is processed and recorded on the DFDR.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- F. When performing any of the following system tests, the data signal display unit (DSDU) tester must be installed. Check that all BITE indicators are black, reset if necessary.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used in the place of the following items.

Table 501

Name and Number	Manufacturer
Display Unit, Data Signal (981-6301-002)	Sundstrand Data Control

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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Table 501 (Continued)

Name and Number	Manufacturer
Simulator, Attitude (AS-80)	J.C. Air
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891	
Simulator, Auto-throttle Deviation (5963442-1)	The Boeing Company
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893	
Simulator, Fuel Flow (4753880)	The Boeing Company
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893	
Simulator, ILS (TIC-30A)	Tel-Instruments
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893	
Simulator, Speed Sensor P/N 77-M80-1230	Aero Info, Inc.
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893	
Test Adapter, CADC Remote (5963440-1)	The Boeing Company
Test Set, Radio Altimeter (980N-1)	Collins Radio
Test Tool, Temperature Potentiometer (8692)	Leeds & Northrup

3. Adjustment/Test

A. Operational Check

- (1) Set parking brake.
- (2) Place FLT RCDR switch, located on aft overhead panel, in GND TEST then in NORM positions. Check that FLT RECORDER OFF annunciator light goes off when switch is in GND TEST and comes on when switch is returned to NORM.

NOTE: On aircraft with electronic overhead annunciator panel (EOAP), it may be necessary to use slew arrows to scroll to the FLT RECORDER OFF message.

NOTE: Aircraft must be in ground mode for this check.

- (3) Release parking brake.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

- (4) Open and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

Check that FLT RECORDER OFF annunciator light goes off when circuit breaker is open and comes on when circuit breaker is closed.

- (5) Move left fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (6) Move right fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (7) Reset parking brake.

WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (8) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893 (Continued)

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891			
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

F	21	B10-45	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (9) Install interconnecting cable between connector harness in data signal display unit (DSDU) box and playback connector near digital flight data recorder (DFDR).

NOTE: Two men are required for the following steps. One has to work the cockpit controls, the other observes the test tool in the aft cargo compartment. Communication between the two is required.

- (10) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891			
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

F	21	B10-45	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 405, 409, 410, 880, 881, 883, 884, 892, 893

- (11) Place FLT RCDR switch in GND TEST position. Flight recorder OFF lamp goes off.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891

- (12) Place FLT RCDR switch in GND TEST position.

WJE 405, 409, 410, 880, 881, 883, 884, 892, 893

- (13) Set following switches to indicated positions:
- FORMAT - ARINC 573
 - SYNC BITS - REVERSED
 - DISK BLANK - OFF
 - DATA SOURCE - SELF TEST

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (14) Place POWER switch to ON. Press LAMP TEST button. Check that all lights on test set come on and that octal display value is 8888.

WJE 886, 887

- (15) Place POWER switch on DSDU to ON. Press LAMP TEST button. Check that all lights on test set come on and that octal display value is 8888.

WJE 405, 409, 410, 880, 881, 883, 884, 892, 893

- (16) Set DATA SOURCE switch to DFDR.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (17) Place SYNC switch on DSDU tester to position A, and INPUT switch to ARINC OUTPUT DATA.

NOTE: The following steps check the synchronization word on the digital line from the FDAU after recording. Allow up to 4 seconds time delay for data to appear on the DSDU tester as follows:

- 1 = Specifies light ON
- 0 = Specifies lights OFF
- * = Not applicable (ignore)

- (18) Rotate thumbwheel switches on DSDU tester and select following subframe and word numbers and check that octal display or binary word value is same as shown in following table:

Table 502

Subframe Number	Word Number	Octal Display/Binary Word Value
#1	#1	7044/111000100100

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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Table 502 (Continued)

Subframe Number	Word Number	Octal Display/Binary Word Value
#2	#1	0732/000111011010
#3	#1	7045/111000100101
#4	#1	0733/000111011011

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (19) Press and hold TEST switch located on FDEP. Check that all annunciator lights come on and light in TEST switch on FDEP comes on.

NOTE: Do not hold FDEP TEST switch for more than 8 seconds. If TEST switch is held for more than 8 seconds, FDAU synchronization test will be initiated.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (20) Pull PULL TO DIM switch located on overhead switch panel, while pressing TEST button located on FDEP. Check that both status lights dim.
- (21) Press PULL TO DIM switch while pressing TEST button. Check that both status lights increase in brightness.

WJE 880

- (22) Pull PULL TO DIM switch, located on FDEP while pressing TEST switch. Check that all annunciator lights dim.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (23) Pull PULL TO DIM switch, located on overhead switch panel, while pressing TEST switch, located on FDEP. Check that all annunciator lights dim.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (24) Press PULL TO DIM switch. Check that all annunciator lights increase in brightness.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (25) Release TEST button on FDEP. Check that both status lights go off.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (26) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

WJE 405, 409, 410, 881, 883, 884, 886, 887

Check that FDAU and DFDR status lights on FDEP come on.

WJE 892, 893

Check that FDAU status light on FDEP comes on.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (27) Release TEST switch on FDEP. If test is satisfactory, fault indicator lights go off immediately and TEST switch light remains on for 4 seconds and then goes off.

NOTE: If light remains on past 4 second interval, an internal fault in the FDEP is indicated.

- (28) Press and hold TEST switch on FDEP for more than 8 seconds. Check that annunciator lights and TEST switch light stay on while switch is pressed.

WJE 892, 893

- (29) Remove DFDR from mounting rack. (PAGEBLOCK 31-31-01/201) Check that DFDR STATUS light on FDEP comes on.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (30) Remove DFDR from mounting rack. (PAGEBLOCK 31-31-01/201)

- (31) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

Check that FDAU STATUS light goes off.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (32) Release TEST switch on FDEP. Check that annunciator lights go off and that TEST switch light flashes 4 times in synchronization with FDAU.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (33) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FDAU and MCU lights on FDEP come on.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (34) Reinstall DFDR into mounting rack. (PAGEBLOCK 31-31-01/201) Check that DFDR STATUS light on FDEP goes off.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (35) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FDAU and MCU lights go off.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (36) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

Check that DAR and MCU annunciator lights on the FDEP come on.

- (37) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

Check that DAR and MCU annunciator lights go off.

- (38) Remove cassette from digital aids recorder (DAR). Check that DAR light on FDEP comes on.
 (39) Insert cassette in DAR. Check that DAR light goes off.
 (40) Remove DFDR from connector. Check that DFDR light on FDEP comes on.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (41) Insert DFDR into connector. Check that DFDR light on FDEP goes off.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (42) Rotate code wheel switches on FDEP display to read from left to right 7, 6, 5, 4, 3, 2, 1.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

NOTE: Complete transmittal of FDEP code wheel data takes 16 seconds for 4 complete frames.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 409, 881, 883, 884

- (43) Rotate thumbwheel switches, select subframe #1 word #37 on DSDU tester.

WJE 410

- (44) Select subframe #2 word #37 on DSDU tester.

WJE 892, 893

- (45) Rotate thumbwheel switches, select subframe #2 word #37 on DSDU tester.

WJE 886, 887

- (46) Rotate thumbwheel switches, select subframe #1 word #5 on DSDU tester.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (47) Press 12 BIT OCTAL display switch and place DATA switch on DSDU tester to DOCUMENTARY position.

NOTE: Display will be in order specified, but may start within any sequence.

- (48) Press INSERT switch on FDEP. Check that octal word value is 3554, 2511, 1446, and 0023.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (49) Rotate thumbwheel switches on DSDU tester to subframe #2 word #37 and press 12 BIT OCTAL display switch. Check that sequence cycles every 4 seconds and that octal word values displayed at 4 second intervals are 3554, 2511, 1446, 0023.

- (50) Rotate FDEP mode switch to AUTO.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

B. System Test

NOTE: After each of following tests, restore system under test to normal or off position as required.

(1) Test Acceleration

- (a) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as in following table:

Table 503

Subframe Number	Word Number	Octal Display
1) Vertical Acceleration		
#1	#2	3441 to 3717
#1	#10	3441 to 3717
2) Lateral Acceleration		
#1	#15	3760 to 4264
3) Longitudinal Acceleration		
#1	#13	3760 to 4264

WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

- (2) Test Attitude

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893
(Continued)

- (a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893			
B	05	B10-19	VERTICAL GYRO-1
WJE 410			
B	06	B10-19	VERTICAL GYRO-1

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 880, 884			
F	15	B10-364	VERTICAL GYRO-1
WJE 410			
F	16	B10-364	VERTICAL GYRO-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893			
F	2	B10-20	VERTICAL GYRO-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

- (b) Disconnect plugs from vertical gyro-2 unit located on forward accessory compartment shelf.
- (c) Install attitude simulator to vertical gyro-2 connector.
- (d) Place attitude simulator control switches as follows:

Table 504

Switch	Position
PITCH	0°
ROLL	0°
POWER	OFF

- (e) Place attitude simulator POWER switch in ON position and VALIDITY switch in VALID position. On non-EFIS aircraft, check that ADI on first officer's panel indicates 0(±2)° pitch and 0(±2)° roll. On EFIS aircraft, check that PFD on first officer's panel indicates 0(±2)° pitch and 0(±2)° roll.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893
(Continued)

- (f) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 505

Subframe Number	Word Number	Octal Display
#1	#17	7750 to 7777 or 0000 to 0024
#1	#48	7750 to 7777 or 0000 to 0024
#1	#51	7750 to 7777 or 0000 to 0024
#1	#20	7750 to 7777 or 0000 to 0024

- (g) Rotate PITCH knob on attitude simulator counterclockwise to 30° pitch up. On non-EFIS aircraft, check that ADI on first officer's panel indicates 30° pitch up. On EFIS aircraft, check that the PFD on first officer's panel indicates 30° pitch up.
- (h) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 506

Subframe Number	Word Number	Octal Display
#1	#20	0475 to 0555
#1	#51	0475 to 0555

- (i) Rotate PITCH knob on attitude simulator to 0°. Rotate ROLL knob on attitude simulator counterclockwise to 30° roll (RWD).
- (j) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 507

Subframe Number	Word Number	Octal Display
#1	#48	0475 to 0555
#1	#17	0475 to 0555

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891

- (k) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that binary word value display is *****1.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (l) Open this circuit breaker and install safety tag:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	05	B10-19	VERTICAL GYRO-1

- (m) Check that binary word value display is *****0 and that attitude flag is displayed in captain's panel vertical gyro indicator.
- (n) Rotate thumbwheel switches, select subframe #1 word #51 on DSDU tester. Check that binary word value display is *****1*.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (o) Open this circuit breaker and install safety tag:

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-20	VERTICAL GYRO-2

- (p) Check that binary word value display is *****0* and that attitude flag is displayed in first officer's panel vertical gyro indicator.
- (q) Rotate ROLL knob on simulator to 0°.

WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (r) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893			
B	05	B10-19	VERTICAL GYRO-1

WJE 410

B	06	B10-19	VERTICAL GYRO-1
---	----	--------	-----------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893			
F	2	B10-20	VERTICAL GYRO-2

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893
(Continued)

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893

C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY
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WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

- (s) Remove attitude simulator from vertical gyro-2 connector.
- (t) Connect plugs on vertical gyro-2 unit.
- (u) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 405, 409, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

B	05	B10-19	VERTICAL GYRO-1
---	----	--------	-----------------

WJE 410

B	06	B10-19	VERTICAL GYRO-1
---	----	--------	-----------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

F	2	B10-20	VERTICAL GYRO-2
---	---	--------	-----------------

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893

C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY
---	---	---------	---------------------------------

WJE 405, 409, 410, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 891-893

- (3) Test Heading Input
 - (a) Rotate thumbwheel switches, select subframe #1 word #3 on DSDU tester.
 - (b) Press and rotate sync knob on first officer's indicator to a compass card heading of 60°. Check that octal display on DSDU tester is between 1223 and 1303.
 - (c) Press and rotate sync knob to a compass card heading of 240°. Check that octal display on DSDU tester is between 5223 and 5303.

WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887

- (4) Test Attitude And Heading

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
C	11	B10-418	AHRS BASIC ANN
WJE 407, 408			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2
WJE 417, 419, 421, 423, 865, 869, 871, 872			
F	1	B10-438	IRU-2
WJE 407, 408, 411, 886, 887			
F	2	B10-396	AHRS-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
E	4	B10-441	IRS-2 BATTERY
G	4	B10-444	IRS-2 ANN
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
G	12	B10-444	MACH TRIM-2

WJE 407, 408, 411, 886, 887

- (b) Remove AHRS-2 unit. (ATTITUDE AND HEADING REFERENCE UNIT - MAINTENANCE PRACTICES, PAGEBLOCK 34-21-10/201 Config 2)

WJE 417, 419, 421, 423, 865, 869, 871, 872

- (c) Remove IRU-2 from rack.
(d) Install adapter cable of attitude simulator to IRU-2 aircraft receptacle.

WJE 407, 408, 411, 886, 887

- (e) Install adapter cable of attitude simulator to AHRS-2 aircraft receptacle.

WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887

- (f) Place POWER switch on simulator to ON position.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887 (Continued)

- (g) Place VALIDITY switch on simulator to VALID position.
- (h) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
C	11	B10-418	AHRS BASIC ANN
WJE 407, 408			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2
WJE 417, 419, 421, 423, 865, 869, 871, 872			
F	1	B10-438	IRU-2
WJE 407, 408, 411, 886, 887			
F	2	B10-396	AHRS-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
E	4	B10-441	IRS-2 BATTERY
G	4	B10-444	IRS-2 ANN
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
G	12	B10-444	MACH TRIM-2

- (i) Rotate PITCH knob counterclockwise to 5° nose up setting. Check that pitch is 5° up.
- (j) Rotate ROLL knob counterclockwise to 45° RWD setting. Check that roll is 45° RWD.
- (k) Rotate HEADING knob counterclockwise to 15° setting. Check that heading is 15°.
- (l) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 508

Subframe Number	Word Number	Octal Display
#1	#17	0750 to 1027
#1	#48	0750 to 1027
#1	#51	0040 to 0123
#1	#20	0040 to 0123

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887 (Continued)

Table 508 (Continued)

Subframe Number	Word Number	Octal Display
#1	#3	0224 to 0303

WJE 407, 408, 411

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (m) Open this circuit breaker and install safety tag:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 407, 408

B	5	B10-394	AHRS-1
---	---	---------	--------

WJE 407, 408, 411

- (n) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that binary word value reads *****0.
- (o) Remove the safety tag and close this circuit breaker:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 407, 408

B	5	B10-394	AHRS-1
---	---	---------	--------

Check that binary word value reads *****1.

WJE 407, 408, 411

- (p) Rotate thumbwheel switches, select subframe #1 word #51 on DSDU tester. Check that binary word value reads *****1*.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (q) Open this circuit breaker and install safety tag:

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	2	B10-396	AHRS-2
---	---	---------	--------

Check that binary word value reads *****0*.

WJE 407, 408, 411, 886, 887

- (r) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 886, 887

C	11	B10-418	AHRS BASIC ANN
---	----	---------	----------------

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 886, 887 (Continued)

(Continued)

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 886, 887			
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2
F	2	B10-396	AHRS-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 886, 887			
G	12	B10-444	MACH TRIM-2

- (s) Remove AHRS simulator cable.
- (t) Install AHRS-2 unit.

WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (u) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
C	11	B10-418	AHRS BASIC ANN
WJE 407, 408			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2
WJE 417, 419, 421, 423, 865, 869, 871, 872			
F	1	B10-438	IRU-2
WJE 407, 408, 411, 886, 887			
F	2	B10-396	AHRS-2

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 886, 887 (Continued)

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
E	4	B10-441	IRS-2 BATTERY
G	4	B10-444	IRS-2 ANN
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
G	12	B10-444	MACH TRIM-2

WJE 417, 419, 421, 423, 865, 869, 871, 872

- (v) Remove adapter cable from IRU receptacle.
- (w) Install the IRU-2.

WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887

- (x) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
C	11	B10-418	AHRS BASIC ANN
WJE 407, 408			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2
WJE 417, 419, 421, 423, 865, 869, 871, 872			
F	1	B10-438	IRU-2
WJE 407, 408, 411, 886, 887			
F	2	B10-396	AHRS-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
E	4	B10-441	IRS-2 BATTERY
G	4	B10-444	IRS-2 ANN

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 417, 419, 421, 423, 865, 869, 871, 872 (Continued)

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UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 407, 408, 411, 417, 419, 421, 423, 865, 869, 871, 872, 886, 887			
G	12	B10-444	MACH TRIM-2

WJE 417, 419, 421, 423, 865, 869, 871, 872

- (5) Test Mag/True Heading Switch
- Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester.
 - Push MAG/TRUE switch, located on First Officer's instrument panel, so that MAG lamp comes on. Check that binary word value is *****1*.
 - Push MAG/TRUE switch, located on First Officer's instrument panel, so that TRUE lamp comes on. Check that binary word value is *****0*.
 - Push MAG/TRUE switch, located on Captain's instrument panel, so that MAG lamp comes on. Check that binary word value is *****1*.
 - Push MAG/TRUE switch, located on Captain's instrument panel, so that TRUE lamp comes on. Check that binary word value is *****0*.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893

- (6) Test Engine Thrust

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891			
U	41	B1-2	ENGINE IGNITION RIGHT
U	42	B1-1	ENGINE IGNITION LEFT

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893			
K	26	B1-424	LEFT ENGINE IGNITION

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	B1-425	RIGHT ENGINE IGNITION

- Disconnect plug from left engine N₁ tachometer transmitter.
- Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- Adjust simulator to simulate 90% rpm. Check that left engine N₁ indicator on center instrument panel is at 90% rpm.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891-893

- (e) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 509

Subframe Number	Word Number	Octal Display
#1	#33	1373 to 1436
#3	#33	1373 to 1436

WJE 880

- (f) Rotate thumbwheel switches, select subframe #2 word #53 on DSDU tester. Check that octal display on DSDU tester is between 1373 and 1436.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893

- (g) Remove simulator from wire harness and reconnect connector to N₁ tachometer transmitter plug.
- (h) Disconnect plug from left engine N₂ tachometer transmitter.
- (i) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (j) Adjust simulator to simulate 90% rpm. Check that left engine N₂ indicator on center instrument panel is at 90% rpm.
- (k) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is as shown in following table:

Table 510

Subframe Number	Word Number	Octal Display
#1	#53	1373 to 1436
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891-893		
#3	#53	1373 to 1436
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893		

- (l) Remove simulator from wire harness and reconnect connector to left engine N₂ tachometer transmitter plug.
- (m) Disconnect plug from right engine N₁ tachometer transmitter.
- (n) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (o) Adjust simulator to simulate 90% rpm. Check that right engine N₁ indicator on center instrument panel is at 90% rpm.
- (p) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 511

Subframe Number	Word Number	Octal Display
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891-893		
#2	#33	1373 to 1436
#4	#33	1373 to 1436

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891-893 (Continued)

Table 511 (Continued)

Subframe Number	Word Number	Octal Display
WJE 880		
#3	#53	1373 to 1436

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893

- (q) Remove simulator from wire harness and reconnect connector to right engine N₁ tachometer transmitter plug.
- (r) Disconnect plug from right engine N₂ tachometer transmitter.
- (s) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (t) Adjust simulator to simulate 90% rpm. Check that right engine N₂ indicator on center instrument panel is at 90% rpm.
- (u) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 512

Subframe Number	Word Number	Octal Display
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891-893		
#2	#53	1373 to 1436
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893		
#4	#53	1373 to 1436

- (v) Remove simulator from wire harness and install connector to right engine N₂ tachometer transmitter plug.
- (w) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891			
U	41	B1-2	ENGINE IGNITION RIGHT
U	42	B1-1	ENGINE IGNITION LEFT

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891-893			
K	26	B1-424	LEFT ENGINE IGNITION

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	B1-425	RIGHT ENGINE IGNITION

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

EFFECTIVITY
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

CAUTION: CLEAR RIGHT AILERON AREA OF ALL PERSONNEL AND EQUIPMENT.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

(7) Test Surface Position Input (Ailerons)

NOTE: To conduct this test, move ailerons manually.

- (a) Rotate thumbwheel switches, select subframe #1 word #40 on DSDU tester.
- (b) Move and hold left aileron to full down travel. Check that octal display on DSDU tester is between 0421 and 0541.
- (c) Return left aileron to neutral position. Check that octal display on DSDU tester is between 7725 and 7777 or 0000 and 0052.
- (d) Move left aileron to neutral position. Check that octal display on DSDU tester is between 7725 and 7777 or 0000 and 0052.
- (e) Move and hold left aileron to full up travel. Check that octal display on DSDU tester is between 7244 and 7364.

(8) Test Surface Position Input (Elevators)

NOTE: To conduct this test, move elevators manually.

- (a) Rotate thumbwheel switches, select subframe #1 word #32 on DSDU tester.
- (b) Move left elevator to down stop. Check that octal display on DSDU tester is between 0463 and 0616.
- (c) Move left elevator to 0° in alignment with rig mark on horizontal stabilizer. Check that octal display on DSDU tester is between 7721 and 7777 or 0000 and 0056.
- (d) Move left elevator to up stop. Check that octal display on DSDU tester is between 6631 and 6764.
- (e) Rotate thumbwheel switches, select subframe #1 word #64 on DSDU tester.
- (f) Move right elevator to down stop. Check that octal display on DSDU tester is between 0476 and 0645.
- (g) Move right elevator to 0° in alignment with rig mark on horizontal stabilizer. Check that octal display on DSDU tester is between 7721 and 7777 or 0000 and 0056.
- (h) Move right elevator to up stop. Check that octal display on DSDU tester is between 6644 and 7000.

(9) Test Surface Position Input (Rudder)

- (a) Make certain that rudder trim control, located on pedestal, is in NOSE 0° position.
- (b) Rotate thumbwheel switches, select subframe #1 word #27 on DSDU tester. Check that octal display on DSDU tester is between 0000-0073 and 7710-7777.
- (c) Push right rudder pedal to full forward position and hold. Check that octal display on DSDU tester is between 6330-6643.
- (d) Push left rudder pedal to full forward position and hold. Check that octal display on DSDU tester is between 1010-1137.
- (e) Return rudder pedals to neutral position.

(10) Test Surface Position Input (Spoiler)

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869,
871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED AND THAT SPOILERS AND RUDDER ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
- (b) Move spoiler control handle to ground spoiler position. Check that spoiler displays follow speedbrake handle motion. Ground spoiler position of speedbrake handle represents full scale deflection of spoiler displays.
- (c) Rotate thumbwheel switches, select subframe #1 word #25 on DSDU tester.
- (d) Check that right spoiler position and octal value display are as shown in following table:

Table 513

Actual Spoiler Position	Octal Display
56°	6553 to 6630
57°	6537 to 6615
58°	6524 to 6602
59°	6511 to 6566
60°	6475 to 6553
61°	6462 to 6537
62°	6447 to 6524
63°	6433 to 6511
64°	6420 to 6475

- (e) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester.
- (f) Check that left spoiler position and octal value display are as shown in following table:

Table 514

Actual Spoiler Position	Octal Display
56°	6471 to 6553
57°	6457 to 6537
58°	6441 to 6523
59°	6425 to 6506
60°	6410 to 6471
61°	6374 to 6457
62°	6360 to 6441
63°	6344 to 6425
64°	6327 to 6410

- (g) Move speedbrake control handle to RET position. Check that spoiler displays return to retracted position. Check that octal word value display on DSDU tester is between 7750 and 7777 or 0000 and 0027.
- (h) Rotate thumbwheel switches, select subframe #1 word #25 on DSDU tester to test right spoiler.
- (i) Check that octal display on DSDU tester is between 7750 and 7777 or 0000 and 0027.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869,
871, 872, 880, 881, 883, 884, 886, 887, 891-893

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- (11) Test Horizontal Stabilizer Position Input
- (a) Move horizontal stabilizer control handle to 0° position. Check that horizontal stabilizer indicator is at 0°.
 - (b) Rotate thumbwheel switches, select subframe #1 word #55 on DSDU tester. Check that octal display on DSDU tester is between 7721 and 7777 or 0000 and 0056.
 - (c) Pull both trim handles on pedestal aft to airplane nose up stop. Check that horizontal stabilizer indicator reads 12° nose up and octal display on DSDU tester is between 6673 and 7026.
- (12) Test Flap Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (b) Place FLAP/SLAT handle on pedestal in RET (up) position.
 - (c) Rotate thumbwheel switches, select subframe #1 word #39 on DSDU tester. Check that octal display on DSDU tester is between 7734 and 7777 or 0000 and 0043.
 - (d) Place FLAP/SLAT handle at 40°. Check that octal display on DSDU tester is between 0645 and 0751.
- (13) Test Air Data Parameter Input
- (a) Connect P2 of CADC remote test adapter to test connector on CADC-2.
 - (b) Place CADC-2 FUNCTION TEST switch on CADC remote test adapter in ON position and all other switches in OFF position. Press and hold PUSH TO TEST button.
Check that first officer's instruments indicate altitude of 9890(±50) feet and airspeed of 420(±20) knots.
 - (c) Rotate thumbwheel switches, select following subframe and word numbers on the DSDU tester. Check that octal display is same as shown in following table:

Table 515

Subframe Number	Word Number	Octal Display
#1	#5	3160 to 3324
#1	#19	3200 to 3240
#2	#55	0000 to 0013

- (d) Rotate thumbwheel switches, select subframe #1 word #23 on DSDU tester. Check that OCTAL DISPLAY switch is in 12 bit position and that 0002 is displayed in octal word value section on DSDU tester.
- (e) Rotate thumbwheel switches, select subframe #1 word #21 on DSDU tester. Check that octal word value is between 1272 and 1440.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (f) Rotate thumbwheel switches, select subframe #2 word #21 on DSDU tester. Check that octal display is between 2520 and 2550.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (g) Remove CADC remote test adapter from test connector on CADC-2.
- (14) Test Radio Altimeter Input
NOTE: Allow radio altimeter systems 2 minutes to warm up and check that captain's and first officer's radio altimeter indicators read 0(±5) feet.
 - (a) Connect radio altimeter test set to test connector on radio altimeter transmitter-1 located in center cargo compartment.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 886, 887, 891-893

- (b) Rotate thumbwheel switches, select subframe #1 word #44 on DSDU tester. Check that octal word value is between 0037 and 0076.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (c) Use test set to position aircraft symbol on captain's radio altimeter at 2500(±100) feet. Check that octal word value on DSDU tester is between 6166 and 6330.
- (d) Disconnect radio altimeter test set from radio altimeter transmitter-1 and connect test set to transmitter-2.
- (e) Rotate thumbwheel switches, select SUBFRAME #1 WORD #24 on DSDU tester. Check that aircraft symbol on first officer's radio altimeter indicator is at 0 feet and octal word value is between 0356 and 0614

WJE 886, 887

- (f) Use test set to position aircraft symbol on first officer's radio altimeter to 200(±10) feet. Check that octal word value on DSDU tester is between 6520 and 6756.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (g) Use test set to position aircraft symbol on first officer's radio altimeter at 200(±10) feet. Check that aircraft symbol on first officer's radio altimeter indicator is at 200 feet and octal word value is between 6520 and 6756.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (h) Adjust radio altimeter test set reading to 0 feet.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (i) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that binary word value on DSDU tester is *****1.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (j) Press SET/TEST switch on first officer's radio altimeter. Check that binary word value on DSDU tester is *****0 and that the first officer's altitude flag goes out of view and is replaced with R/A fail fault.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (k) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that binary word value on DSDU tester is *****1*.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (l) Press SET/TEST switch on captain's radio altimeter. Check that binary word value on DSDU tester is *****0* and that the captain's altitude flag goes out of view and is replaced with R/A fail fault.
- (m) Disconnect radio altimeter test set from radio transmitter-2.
- (15) Test ILS Input (Glideslope and Localizer Deviation)
 - (a) Rotate course selector knobs on both VHF NAV control panels so that course select bars on Horizontal Situation Indicator (HSI), on EFIS equipped aircraft Navigation Display (ND), point to heading index at top of indicator.
 - (b) Position ILS simulator in front of aircraft to align with VOR localizer antenna on vertical stabilizer.
 - (c) Adjust ILS simulator to move captain's and first officer's course deviation bar right one dot and glideslope pointer up one dot. Check that localizer and glideslope are +1 dot.
 - (d) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 516

Subframe Number	Word Number	Octal Display
#1	#6	4527 to 4650
#1	#54	4527 to 4650
#1	#22	4527 to 4650
#1	#38	4527 to 4650

- (e) Adjust ILS simulator to move captain's and first officer's course deviation bar left one dot and glideslope pointer down one dot. Check that localizer and glideslope are -1 dot.
- (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal or binary display is same as shown in following table:

Table 517

Subframe Number	Word Number	Octal Display
#1	#38	3127 to 3250
#1	#22	3124 to 3253
#1	#54	3127 to 3250
#1	#6	3127 to 3250
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891		
Binary Display		
#1	#51	*****1
#1	#43	*****1*

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (g) Open these circuit breakers and install safety tags:

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	B10-78	VHF NAV-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	7	B10-24	VHF NAV-2

Check that *****0* is displayed in binary word value on DSDU tester and that first officer's flag is displayed.

- (h) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that binary display is same as shown in following table:

Table 518

Subframe Number	Word Number	Binary Display
#1	#51	*****0
#1	#63	*****1
#1	#11	*****1

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (i) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	B10-77	VHF NAV-1 28 VAC

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	9	B10-22	VHF NAV-1

Check that *****0 is displayed as binary word value on DSDU tester and that captain's flag is displayed.

- (j) Rotate thumbwheel switches, select subframe #1 word #63 on DSDU tester. Check that *****0 is displayed as binary word value.
- (k) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	B10-77	VHF NAV-1 28 VAC

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	9	B10-22	VHF NAV-1

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	B10-78	VHF NAV-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	7	B10-24	VHF NAV-2

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

(16) Test Slat Position

(a) Check that slats are in retracted position.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(b) Open this circuit breaker and install safety tag:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

(c) Rotate thumbwheel switches, select subframe #1 word #41 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.

(d) Rotate thumbwheel switches, select subframe #1 word #29 on DSDU tester. Check that *****10 is displayed as binary word value on DSDU tester.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(e) Open this circuit breaker and install safety tag:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

Remove the safety tag and close this circuit breaker:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

(f) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.

(g) Rotate thumbwheel switches, select subframe #1 word #17 on DSDU tester. Check that *****0 is displayed as binary word value on DSDU tester.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (h) Extend slats to mid position. Check that *****1 is displayed as binary word value on DSDU tester.

NOTE: If the slats cannot be extended at the time of the test, the mid position extension may be simulated. The sensors are located on the slat drive wheel aft of the mid cargo compartment. Place a steel shim against the left "B" and the right "B" sensors. Place an aluminum shim against the left "A" and right "A" sensors.

- (i) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****0* is displayed as binary word value on DSDU tester.
- (j) Remove the safety tag and close this circuit breaker:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

NOTE: If slats are not in extended position, place steel shims on left and right slats "C" and "D" sensors.

- (k) Rotate thumbwheel switches, select subframe and word numbers on DSDU tester as follows and check that binary word value is same as shown in following table:

Table 519

Subframe Number	Word Number	Binary Display
#1	#41	*****0*
#1	#29	*****01

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (l) Retract slats.

NOTE: Remove shims, if used in (Paragraph 3.B.(16)(h)) and (Paragraph 3.B.(16)(j)).

- (m) Rotate thumbwheel switches, select subframe #1 word #17 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.

- (n) Turn off hydraulic power to slats.

NOTE: If hydraulic power cannot be turned off at this time, the handle/slat disagreement may be simulated by placing a steel shim under the left B proximity sensor.

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (o) Move slat handle to mid position. Check that *****0* is displayed as binary word value on DSDU tester.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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- (p) Retract slats.

NOTE: Remove shims, if used in (Paragraph 3.B.(16)(n)).

- (17) Test Thrust Reverser Position

- (a) Rotate thumbwheel switches, select subframe and word numbers on DSDU tester as follows and check that binary display is same as shown on following table:

Table 520

Subframe Number	Word Number	Binary Display
#1	#7	*****11
#2	#7	*****11
#3	#7	*****11
#4	#7	*****11

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (c) Install two jumper wires from a bonded ground to terminals 8 and 9, on module block S30-202 located in aft electrical electronic compartment.
- (d) Remove tags and close LEFT REVERSER UNLOCK ADVISORY and LEFT REVERSE THRUST ADVISORY circuit breakers.
- (e) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester and check that binary display is same as shown on following table:

Table 521

Subframe Number	Word Number	Binary Display
#1	#7	*****00
#3	#7	*****00

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (f) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

Remove two jumper wires from terminals 8 and 9.

- (g) Install two jumper wires from terminals 6 and 7 to bonded ground.
 (h) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (i) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester and check that binary display is same as shown on following table:

Table 522

Subframe Number	Word Number	Binary Display
#2	#7	*****00
#4	#7	*****00

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- (j) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (k) Remove two jumper wires from terminals 6 and 7 to ground.
 (l) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (18) Test VHF Communication Keying

EFFECTIVITY WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893
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- (a) Rotate dual frequency selectors, located on pedestal, to move all transceivers to unused frequencies.
- (b) Install microphone in MIC jack on VHF transceiver-1, located on forward right radio rack or use the cockpit microphone.
 - 1) If the cockpit microphone is used, select VHF-1 on the captain's audio control panel.

WJE 405, 407-411, 417, 419, 421, 423, 865, 869, 871, 872, 880, 881, 883, 884, 886, 887, 892, 893

- (c) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that *****11 is displayed as binary word value.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (d) Rotate thumbwheel switches, select subframe #1 word #3 on DSDU tester.

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891

Check that *****00 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (e) Press and hold press-to-talk button on microphone.

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

Check that *****01 is displayed as binary word value.

WJE 417, 419, 421, 423, 865, 869, 871, 872

Check that *****10 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (f) Release press-to-talk button, remove microphone from transceiver-1 and install in MIC jack on VHF transceiver-2.
 - 1) If the cockpit microphone is used, select VHF-2 on the first officer's audio control panel.
- (g) Press and hold press-to-talk button on microphone.

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

Check that *****10 is displayed as binary word value.

WJE 417, 419, 421, 423, 865, 869, 871, 872

Check that *****01 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (h) Release press-to-talk button, remove microphone from transceiver-2.

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

- (19) Test Cabin Pressure Warning

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-863, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

- (a) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****1* is displayed as binary word value.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 864

- (b) Rotate thumbwheel switches, select subframe #2 word #4 on DSDU tester. Check that *****1* is displayed as binary word value.

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

- (c) Install jumper wire across terminals of cabin low pressure warning switch. Check that *****0* is displayed as binary word value.
- (d) Remove jumper wire from cabin low pressure warning switch terminals.

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (e) Open this circuit breaker and install safety tag:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING

- (f) Rotate thumbwheel switches, select subframe #4 word #23 on DSDU tester. Check that octal word value is between 6640 and 7776.
- (g) Remove the safety tag and close this circuit breaker:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (20) Test Flight/Ground Sensing

WJE 410, 880, 892, 893

- (a) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****0 is displayed as binary word value.

WJE 405, 409, 881, 883, 884

- (b) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester. Check that *****1 is displayed as binary word value.

WJE 407, 408, 411

- (c) Rotate thumbwheel switches, select subframe #2 word #4 on DSDU tester. Check that *****1 is displayed as binary word value.

WJE 886, 887

- (d) Rotate thumbwheel switches, select subframe #1 word #22 on DSDU tester. Check that *****1 is displayed as binary word value.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (e) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
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WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
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WJE 410, 880, 892, 893

- (f) Check that *****1 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (g) Rotate thumbwheel switches, select subframe #1 word #30 on DSDU tester. Check that *****0 is displayed as binary word value.

WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 881, 883, 884, 886, 887, 891

- (h) Select subframe #2 word #4 on DSDU tester.
 (i) Check that *****0 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (j) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
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WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (21) Test Marker Beacon

WJE 405, 409, 410, 880, 881, 883, 884, 886, 887, 892, 893

- (a) Rotate thumbwheel switches, select subframe #0 word #3 on DSDU tester. Check that *****00 is displayed in binary word value section.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (b) Rotate thumbwheel switches, select subframe #0 word #9 on DSDU tester. Check that *****1 is displayed in binary word value section.
- (c) Press and hold self-test switch on marker beacon receiver. Check that *****0 is displayed in binary word value section momentarily. Release self-test switch.

NOTE: BIT 1 will change state when outer marker light comes on.

WJE 405, 409, 410, 880, 881, 883, 884, 886, 887, 892, 893

- (d) Press and hold self-test switch on marker beacon receiver. Check that *****11 is displayed in binary word value section momentarily. Release self-test switch.

NOTE: BIT 1 will change state when outer marker light comes on and BIT 2 will change when middle marker light comes on.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (e) Rotate thumbwheel switches, select subframe #0 word #22 on DSDU tester. Check that *****1 is displayed as binary word value.
- (f) Press and hold self-test switch on marker beacon receiver. Check that *****0 is displayed as binary word value section momentarily. Release self-test switch.

NOTE: BIT 1 will change state when outer marker light comes on.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

(22) Test Fire Warning

- (a) Place R ENG and L ENG LOOPS selector switches on aft overhead switch panel in A position.

WJE 405, 407-409, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

- (b) Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester. Check that *****1* is displayed as binary word value.

WJE 417, 419, 421, 423, 865, 869, 871, 872

- (c) Rotate thumbwheel switches, select subframe #1 word #43 on DSDU tester. Check that *****1 is displayed as binary word value.

WJE 410

- (d) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****1 is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (e) Press LOOPS A TEST switch located on center instrument panel. Check that *****0* is displayed as binary word value. Release switch.

WJE 417, 419, 421, 423, 865, 869, 871, 872

- (f) Rotate thumbwheel switches, select subframe #2 word #4 on DSDU tester. Check that *****1* is displayed as binary word value.

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

- (g) Rotate thumbwheel switches, select subframe #1 word #43 on DSDU tester. Check that *****1 is displayed as binary word value.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (h) Press LOOPS A TEST switch. Check that *****0 is displayed as binary word value. Release switch.
- (23) Test Hydraulic Systems Status
 - (a) Disconnect electrical connector from left hydraulic pressure switch (S1-126) and left hydraulic temperature switch (S1-128), located on forward outboard corner of left wheelwell. Rotate thumbwheel switches, select subframe #1 word #39 on DSDU tester. Check that *****11 is displayed as binary word value.
 - (b) Place an electrical ground to pin B of S1-126. Check that *****10 is displayed as binary word value.
 - (c) Move electrical ground to pin 1 of S1-128. Check that *****01 is displayed as binary word value.
 - (d) Disconnect electrical connector from right hydraulic pressure switch (S1-127) and right hydraulic temperature switch (S1-129), located on aft inboard corner of right wheelwell. Rotate thumbwheel switches, select subframe #2 word #39 on DSDU tester. Check that *****11 is displayed as binary word value.
 - (e) Place an electrical ground to pin B of S1-127. Check that *****10 is displayed as binary word value.
 - (f) Move electrical ground to pin 1 of S1-129. Check that *****01 is displayed as binary word value.
 - (g) Remove electrical ground and connect electrical connectors to left and right hydraulic pressure switches and temperature switches disconnected in previous steps.
- (24) Test Landing Gear
 - (a) Rotate thumbwheel switches, select subframe #1 word #4 on tester. Check that *****01 is displayed as binary word value on tester.
 - (b) Use an aluminum shim to cover landing gear down proximity sensor. Check that *****00 is displayed as binary word value on tester.
 - (c) Remove shim from landing gear down proximity sensor.
 - (d) Use a steel shim to cover landing gear up proximity sensor. Check that *****11 is displayed as binary word value on tester.
 - (e) Remove shim from landing gear down proximity sensor.
- (25) Test Engine Pressure Ratio
 - (a) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal or binary display is same as shown in following table:

Table 523

Subframe Number	Word Number	Octal Display
#1	#41	5102 to 5302
#1	#8	5102 to 5302

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (26) Test Fuel Flow

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (b) Put fuel line checker controls in the following positions.

Fuel Line Checker Controls

CONTROL	POSITION
0A - 0B Switch	OFF
FUEL FLOW SIMULATE Rotary Switch	ZERO (PPH), or ZERO (KGPH) as applicable
COUNTER Switch	OFF
INDICTOR MODEL Switch	EDP

- (c) Disconnect aircraft electrical cable connector from left engine fuel flow transmitter. Connect fuel flow simulator to electrical cable connector. Connect simulator grounding cable to airframe structure (ground).
- (d) Remove the safety tag and close this circuit breaker:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

WJE 405, 407-411, 880, 881, 883, 884, 892, 893

- (e) Put the line checker FUEL FLOW SIMULATE switch in VAR either in PPH or KGPH section as applicable.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (f) Rotate selector knob on fuel flow simulator to E (1955-2045 Kg/h) position.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (g) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 524

Subframe Number	Word Number	Octal Display
WJE 405, 407-411, 880, 881, 883, 884, 892, 893		
#1	#30	1310 to 1404
#3	#30	1310 to 1404

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 880, 881, 883, 884, 892, 893 (Continued)

Table 524 (Continued)

Subframe Number	Word Number	Octal Display
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891		
#1	#30	2100 to 2214
#3	#30	2100 to 2214
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893		

(h) Rotate slowly the VAR FLOW KNOB to zero.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(i) Open this circuit breaker and install safety tag:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

(j) Disconnect fuel flow simulator from electrical cable connector and connect aircraft electrical cable connector to left engine fuel flow transmitter. Disconnect simulator grounding cable from airframe structure.

(k) Disconnect aircraft electrical cable connector from right engine fuel flow transmitter. Connect fuel flow simulator to electrical cable connector. Connect simulator grounding cable to airframe structure (ground).

(l) Remove the safety tag and close this circuit breaker:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

WJE 405, 407-411, 880, 881, 883, 884, 892, 893

(m) Rotate slowly the VAR FLOW KNOB until indicator shows 1320 KGPH or 2910 PPH as applicable. If the indicator pointer does not follow smoothly, the fault is in the indicator.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

(n) Rotate selector knob on fuel flow simulator to E (1955-2045 Kg/h) position.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

(o) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 525

Subframe Number	Word Number	Octal Display
WJE 405, 407-411, 880, 881, 883, 884, 892, 893		
#2	#30	1310 to 1404
#4	#30	1310 to 1404

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 880, 881, 883, 884, 892, 893 (Continued)

Table 525 (Continued)

Subframe Number	Word Number	Octal Display
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891		
#2	#30	2100 to 2214
#4	#30	2100 to 2214
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893		

- (p) Put line checker FUEL FLOW SIMULATE switch to zero (PPH) or zero (KGPH) as applicable.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (q) Open this circuit breaker and install safety tag:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (r) Disconnect fuel flow simulator from electrical cable connector and connect aircraft electrical cable connector to right engine fuel flow transmitter. Disconnect simulator grounding cable from airframe structure.

- (s) Remove the safety tags and close these circuit breakers:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (27) Test EGT Input

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
B	15	B1-890	ENGINE EXHAUST TEMP LEFT
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (b) Disconnect electrical connector from R5-11 receptacle at left engine firewall, and connect Leeds and Northrup test tool to pins A and B of connector.

NOTE: Use Alumel wire between binding post (-) and pin A and Chromel wire between binding post (+) and pin B.

- (c) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
B	15	B1-890	ENGINE EXHAUST TEMP LEFT
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (d) Adjust Leeds and Northrup scale setter to 500°C and check that EGT indicator indicates 500°C(±7°C).

WJE 405, 407-410, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (e) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that octal display on DSDU tester is between 4703 and 5075.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (f) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
B	15	B1-890	ENGINE EXHAUST TEMP LEFT
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (g) Disconnect Leeds and Northrup test tool and connect electrical connector to R5-11 receptacle at left engine firewall.

- (h) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891 (Continued)

(Continued)

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
C	15	B1-891	ENGINE EXHAUST TEMP RIGHT

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (i) Disconnect electrical connector from R5-12 receptacle at right engine firewall, and connect Leeds and Northrup test tool to pins A and B of connector.

NOTE: Use Alumel wire between binding post (-) and pin A and Chromel wire between binding post (+) and pin B.

- (j) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
C	15	B1-891	ENGINE EXHAUST TEMP RIGHT

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (k) Adjust Leeds and Northrup scale setter to 500°C and check that EGT indicator indicates 500°C(±7°C).

WJE 405, 407-410, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (l) Rotate thumbwheel switches, select subframe #1 word #12 on DSDU tester. Check that octal display in DSDU tester is between 4703 and 5075.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (m) Open these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 410			
B	16	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893			
C	15	B1-891	ENGINE EXHAUST TEMP RIGHT

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 891-893

- (n) Disconnect Leeds and Northrup test tool and connect electrical connector to R5-12 receptacle at right engine firewall.
- (o) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

Row Col Number Name

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

B 15 B1-963 EGT, N1, N2 DISPLAY LEFT

WJE 410

B 16 B1-963 EGT, N1, N2 DISPLAY LEFT

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 881, 883, 884, 891-893

C 15 B1-891 ENGINE EXHAUST TEMP RIGHT

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

(28) Test Autopilot

- (a) Place following switches, located on glareshield flight guidance control panel, in following positions as indicated:
 - 1) AP ON switch in OFF
 - 2) Captain's FD switch in OFF
 - 3) First Officer's FD switch in OFF
 - 4) ALT switch adjusted to 5000 feet in altitude preselect window
- (b) Rotate thumbwheel switches, select subframe #0 word #28 on DSDU. Check that following binary word values appear in sequence at rate of one per second:

Table 526

Binary Word Value	Subframe	Channel
*****00	--	Roll
*****01	--	Pitch
*****10	--	Armed
*****11	--	Autothrottle

NOTE: (Paragraph 3.B.(28)(b)) must always be repeated anytime power is interrupted to the autopilot during testing. Subframe positions are not constant with respect to channels.

- (c) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(28)(b) for pitch word #27 on DSDU tester. Check that *****00 is displayed as binary word value.
- (d) Place captain's FD switch in ON position. Check that *****01 is displayed as binary word value on DSDU tester.
- (e) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(28)(b) for armed word #27 on DSDU tester. Check that *****00 is displayed as binary word value.
- (f) Pull ALT switch located on flight guidance control panel to out position. Check that *****11 is displayed as binary word value on DSDU tester.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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- (g) Rotate thumbwheel switches, select subframe # determined in (Paragraph 3.B.(28)(b)) for pitch word #59 on DSDU tester. Check that *****0 is displayed as binary word value.
- (h) Press and release IAS switch located on flight guidance control panel. Check that *****1 is displayed as binary word value on DSDU tester.
- (i) Rotate thumbwheel switches on DSDU tester to select subframe # determined in (Paragraph 3.B.(28)(b)) for armed word #13. Check that *****1* is displayed as binary word value.
- (j) Rotate ALT switch clockwise to detent. Check that *****0* is displayed as binary word value on DSDU tester.
- (k) Press and release ALT HOLD switch, located on flight guidance control panel.
- (l) Rotate thumbwheel switches, select subframe # determined in (Paragraph 3.B.(28)(b)) for pitch word #11 on DSDU tester. Check that *****0* is displayed as binary word value.
- (m) Rotate vertical speed wheel located on flight guidance control panel out of detent in ANU direction. Check that *****1* is displayed as binary word value on DSDU tester.
- (n) Rotate thumbwheel switches, select subframe #1 word #41 on DSDU tester. Check that *****0 is displayed as binary word value.
- (o) Place autopilot select switch, located on flight guidance control panel, in position 1.
- (p) Place AP ON switch in ON position. Check that *****1 is displayed as binary word value.
- (q) Rotate thumbwheel switches, select subframe #1 word #59 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.
- (r) Place autopilot select switch in position 2. Check that *****0* is displayed as binary word value on DSDU tester.

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- (s) Place YAW DAMP switch on overhead switch panel in OFF position.
- (t) Rotate thumbwheel switches, select subframe #2 word #7 on DSDU tester. Check that octal display on DSDU tester is between 7774 and 7777.
- (u) Place YAW DAMP switch to OVRD position. Check that octal display on DSDU tester is between 3700 and 4100.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (29) Test Glideslope Warning/Terrain Warning
 - (a) If installed, remove Ground Proximity Computer from aircraft connector. (ENHANCED GROUND PROXIMITY WARNING COMPUTER - MAINTENANCE PRACTICES, PAGEBLOCK 34-45-01/201 Config 2)
 - (b) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (c) Rotate thumbwheel switches, select subframe #1 word #63 on DSDU tester. Check that *****1* is displayed as binary word value.

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (d) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (e) Install jumper wire between pins B-33 and B-5 on GPWS computer wire harness connector.

- (f) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (g) Check that *****0* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (h) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (i) Remove jumper wire from pins B-33 and B-5.

- (j) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (k) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that *****1* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (l) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (m) Install jumper wire between pins B-11 and B-5 on GPWS computer wire harness connector.

- (n) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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Check that *****0* is displayed as binary word value on DSDU tester.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (o) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

Remove jumper wire from pins B-11 and B-5.

- (p) Install Ground Proximity Computer into aircraft connector. (ENHANCED GROUND PROXIMITY WARNING COMPUTER - MAINTENANCE PRACTICES, PAGEBLOCK 34-45-01/201 Config 2)

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (30) Test Power Lever Angle

- (a) Place left engine throttle to FLIGHT IDLE position.
 (b) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown:

Table 527

Subframe Number	Word Number	Octal Display
#1	#14	5120 to 5160
<u>NOTE:</u> If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 5140). Retighten the front band on potentiometer.		
#2	#14	5120 to 5160
#3	#14	5120 to 5160
#4	#14	5120 to 5160

- (c) Place left engine throttle to full forward position. Check that octal word value displayed on DSDU tester is between 6143 and 6327.
 (d) Place left engine throttle to flight idle position.
 (e) Place right engine throttle to flight idle position.
 (f) Rotate thumbwheel switches, select following subframe and word numbers in DSDU tester. Check that octal display is same as shown:

Table 528

Subframe Number	Word Number	Octal Display
#1	#16	5120 to 5160
<u>NOTE:</u> If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 5140). Retighten the front band on potentiometer.		
#2	#16	5120 to 5160
#3	#16	5120 to 5160
#4	#16	5120 to 5160

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

- (g) Place right engine throttle to full forward position. Check that octal word value displayed on DSDU tester is between 6143 and 6327.
- (h) Place right engine throttle to flight idle position.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (31) Test Autothrottle Speed Deviation

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	B10-332	AUTO THROTTLE-1

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	18	B10-365	AUTO THROTTLE-1
G	26	B10-343	MACH TRIM-1
G	27	B10-345	YAW DAMPER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	B10-333	AUTO THROTTLE-2
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	B10-346	YAW DAMPER-2

- (b) Remove digital flight guidance computers No. 1 and No. 2 from mounting trays.
- (c) Connect yellow lead of autothrottle speed deviation simulator to pin 22 of connector S30-218.
- (d) Connect orange lead of autothrottle speed deviation simulator to pin 20 of connector S30-218.
- (e) Place POLARITY switch on simulator to REV position.
- (f) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	B10-332	AUTO THROTTLE-1

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	18	B10-365	AUTO THROTTLE-1
G	26	B10-343	MACH TRIM-1

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	27	B10-345	YAW DAMPER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	B10-333	AUTO THROTTLE-2
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	B10-346	YAW DAMPER-2

- (g) Press and hold PUSH TO TEST switch on simulator.
NOTE: PUSH TO TEST switch must be pressed during test.
- (h) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 529

Subframe Number	Word Number	Octal Display
#1	#60	2000 to 2366
#2	#60	2000 to 2366
#3	#60	2000 to 2366
#4	#60	2000 to 2366

- (i) Place POLARITY switch on simulator to NORM position.
- (j) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 530

Subframe Number	Word Number	Octal Display
#1	#62	2000 to 2366
#2	#62	2000 to 2366
#4	#62	2000 to 2366

- (k) Release PUSH TO TEST switch on simulator.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (l) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	B10-332	AUTO THROTTLE-1

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	18	B10-365	AUTO THROTTLE-1
G	26	B10-343	MACH TRIM-1
G	27	B10-345	YAW DAMPER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	B10-333	AUTO THROTTLE-2
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	B10-346	YAW DAMPER-2

- (m) Disconnect autothrottle speed deviation simulator from pins 22 and 20 of connector S30-218.
- (n) Install digital flight guidance computers No. 1 and No. 2 in their respective mounting trays.
- (o) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	B10-332	AUTO THROTTLE-1

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	18	B10-365	AUTO THROTTLE-1
G	26	B10-343	MACH TRIM-1
G	27	B10-345	YAW DAMPER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	6	B10-333	AUTO THROTTLE-2
D	8	B10-352	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	13	B10-346	YAW DAMPER-2

- (p) Perform Return to Service (RTS) BIT (DFGS). (DFGS STATUS/TEST (STP) PANEL - MAINTENANCE PRACTICES, PAGEBLOCK 22-01-05/201 Config 3 or DFGS STATUS/TEST (STP) PANEL - MAINTENANCE PRACTICES, PAGEBLOCK 22-01-05/201 Config 5)

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 880, 881, 883, 884, 886, 887, 892, 893

(32) Test HF Communication Keying

NOTE: This test is to be performed in conjunction with maintenance procedures in HIGH FREQUENCY SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 23-10-00/201

- (a) Install microphone in MIC jack on HF transceiver-1 or use the cockpit microphone.
- (b) Rotate frequency selector, located on transceivers, to unused frequency.

WJE 407, 408, 411, 880

- (c) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****0 is displayed as binary word value on DSDU tester.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (d) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****00 is displayed as binary word value on DSDU tester.

WJE 407, 408, 411, 880

- (e) Press and hold press-to-talk button on microphone. Check that *****1 is displayed as binary word value on DSDU tester.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (f) Press and hold press-to-talk button on microphone. Check that *****01 is displayed as binary word value on DSDU tester.

WJE 407, 408, 411

- (g) Release press-to-talk button, remove microphone from transceiver-1.

WJE 405, 409, 410, 881, 883, 884, 886, 887, 892, 893

- (h) Release press-to-talk button, remove microphone from transceiver-1 and install on HF TRANSCEIVER-2.
- (i) Press and hold press-to-talk button on microphone. Check that *****10 is displayed as binary word value on DSDU tester.
- (j) Release press-to-talk button, remove microphone from transceiver-2.

WJE 886, 887

(33) Test GMT

- (a) Rotate thumbwheel switches, select subframe #1 word #37 on DSDU tester.
- (b) Turn GMT selector on first officer's clock to HOLD then switch to fast slew to set hours to 16.
- (c) Turn GMT selector to slow slew to set minutes to 49.
- (d) Turn selector to run. Check that **0100**1001 is displayed as binary value on DSDU tester.
- (e) Rotate thumbwheel switches, select subframe #3 word #37 on DSDU tester and check that **0001**0110 is displayed as binary value on DSDU tester.

WJE 410, 880, 892, 893

(34) Test Engine Vibration

- (a) Check that ENG VIB PICKUP switch is in FWD position.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869,
871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 410, 892, 893

- (b) Rotate thumbwheel switches, select subframe #1 word #62 on DSDU tester.

WJE 880

- (c) Rotate thumbwheel switches, select subframe #1 word #7 on DSDU tester.

WJE 410, 880, 892, 893

- (d) Press and hold vibration monitor test switch on first officer's instrument panel. Check that octal word value is between 4631 and 7777 on DSDU tester.
- (e) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 531

Subframe Number	Word Number	Octal Display
WJE 410, 892, 893		
#2	#62	5145 to 7462
#4	#62	4631 to 7777
WJE 880		
#2	#7	5145 to 7462
#4	#7	4631 to 777

WJE 410, 892, 893

- (f) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester.

WJE 880

- (g) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester.
- (h) Place vibration area selector switch, on first officer's instrument panel, in FWD position. Check that *****1 is displayed as binary word value on DSDU tester.
- (i) Place vibration area selector switch, on first officer's instrument panel in AFT position. Check that *****0 is displayed as binary word value on DSDU tester.

WJE 410, 892, 893

- (j) Place vibration area selector switch, on first officer's instrument panel, in AFT position. Check that *****1* is displayed as binary word value on DSDU tester.
- (k) Place vibration area selector switch, on first officer's instrument panel in FWD position. Check that *****0* is displayed as binary word value on DSDU tester.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (35) Test Brake Pressure Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
- (b) Fully depress left brake pedal and hold.
- (c) Rotate thumbwheel switches, select subframe #1 word #28 on DSDU tester. Check that octal display is between 4314 and 5146.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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- (d) Release left brake pedal. Check that 0000 to 0167 is displayed in octal word value section.
- (e) Fully depress right brake pedal and hold.
- (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 532

Subframe Number	Word Number	Octal Display
#1	#35	4314 to 5146
#3	#35	4314 to 5146

- (g) Release right brake pedal. Check that octal word value is between 0000 and 0167 on DSDU tester.
- (36) Test Brake Pedal Position Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
- (b) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 533

Subframe Number	Word Number	Octal Display
#1	#46	2716 to 3425
#3	#46	2716 to 3425

NOTE: If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 3162). Retighten the front band on potentiometer.

- (c) Fully depress left brake pedal and hold. Check that octal word value is between 4533 and 5243 on DSDU tester.
- (d) Release left brake pedal.
- (e) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 534

Subframe Number	Word Number	Octal Display
#2	#46	5444 to 6153
#4	#46	5444 to 6153

NOTE: If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 5710). Retighten the front band on potentiometer.

- (f) Fully depress right brake pedal and hold. Check that octal word value is between 3682 and 4335 on DSDU tester.
- (g) Release right brake pedal.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884, 886, 887

(37) Test Windshear Warning

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Open these circuit breakers and install safety tags:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	35	B1-26	STALL WARNING AND AUTO SLAT-2

UPPER EPC, POWER - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
L	7	B10-436	WINDSHEAR COMPUTER
WJE 405, 407-411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884			
L	10	B10-436	WINDSHEAR COMPUTER

WJE 405, 407-411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884, 886, 887

- (b) Remove Windshear Computer located in aft left radio rack, shelf 1.
- (c) Install ground to pin 101 on connector J1A of windshear computer connector tray.

WJE 405, 407-409, 411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884, 886, 887

- (d) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****0 is displayed as binary word value.

WJE 410

- (e) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****0 is displayed as binary word value.

WJE 405, 407-409, 411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884, 886, 887

- (f) Remove ground from J1A pin 101. Check that *****1 is displayed as binary word value.

WJE 405, 407-411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884, 886, 887

- (g) Install Windshear Computer into its connector tray.
- (h) Remove the safety tags and close these circuit breakers:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	35	B1-26	STALL WARNING AND AUTO SLAT-2

UPPER EPC, POWER - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 886, 887			
L	7	B10-436	WINDSHEAR COMPUTER
WJE 405, 407-411, 417, 419, 421, 423, 864, 865, 869, 871, 872, 881, 883, 884			
L	10	B10-436	WINDSHEAR COMPUTER

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

(38) Test Engine Bleed

- (a) Place following switches, located on glareshield and overhead switch panels, in positions as indicated:
 - 1) AP ON switch to "1"
 - 2) L and R ENG Anti-ice to "OFF"
 - 3) L SYS and R SYS AIR FOIL ice protect switches to "OFF"

WJE 407, 408, 411

- (b) Rotate thumbwheel switches, select subframe #2 word #23 on DSDU tester. Check that octal display is between 7774 and 7777.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (c) Rotate thumbwheel switches, select subframe #1 word #49 on DSDU tester. Check that octal display reads 7777.
- (d) Place L ENG Anti-ice switch to "ON" position. Check that octal word value is between 3700 and 4100.

WJE 407, 408, 411

- (e) Place L ENG Anti-ice switch to "ON" position. Check that octal word value is between 0000 and 0321.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (f) Place L ENG Anti-ice switch to "OFF".

WJE 407, 408, 411

- (g) Rotate thumbwheel switches, select subframe #4 word #23 on DSDU tester. Check that octal display is between 7774 and 7777.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (h) Rotate thumbwheel switches, select subframe #3 word #49 on DSDU tester. Check that octal display reads 7777.
- (i) Place R ENG Anti-ice switch to "ON" position. Check that octal word value is between 3700 and 4100.

WJE 407, 408, 411

- (j) Place R ENG Anti-ice switch to "ON" position. Check that octal word value is between 0000 and 0321.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (k) Place R ENG Anti-ice switch to "OFF".

WJE 407, 408, 411

- (l) Rotate thumbwheel switches, select subframe #2 word #4 on DSDU tester. Check that *****1* is displayed as binary word value.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (m) Rotate thumbwheel switches, select subframe #2 word #49 on DSDU tester. Check that octal display reads 7777.
- (n) Place R SYS AIR FOIL ice protect switch to "ON" position. Check that octal word value is between 3700 and 4100.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411

- (o) Place R SYS AIR FOIL ice protect switch to "ON" position. Check that *****0* is displayed as binary word value.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (p) Place R SYS AIR FOIL ice protect switch to "OFF".

WJE 407, 408, 411

(39) Test Engine Oil Pressure

- (a) Rotate thumbwheel switches, select subframe #1 word #36 on DSDU tester. Check that octal word value is between 6261 and 6343.
- (b) Rotate thumbwheel switches, select subframe #2 word #36 on DSDU tester. Check that octal word value is between 6261 and 6343.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

(40) Test Engine Start Valve

- (a) Check that L and R START switches are in "OFF" positions.
- (b) Disconnect plug P1-1220 (aft cabin overhead) STA 218.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (c) Return-to-Service (RTS) on reconnect.

WJE 407, 408, 411

- (d) Rotate thumbwheel switches, select subframe #1 word #51 on DSDU tester. Check that *****11 is displayed as binary word value.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (e) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****11 is displayed as binary word value.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (f) Install ground to pin Y. Check that *****01 is displayed as binary word value.
 - (g) Remove ground from pin Y, and install to pin *b. Check that *****10 is displayed as binary word value.
 - (h) Connect plug P1-1220 (aft cabin overhead) STA 218.
- (41) Test Engine Ignition
- (a) Place switches in positions indicated as follows:

Table 535

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891	
R FUEL SHUTOFF	- OFF
WJE 407, 408, 411	
R FUEL SHUTOFF	- ON
WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891	
L FUEL SHUTOFF	- ON

<p style="text-align: center;">EFFECTIVITY</p> <p>WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893</p>

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WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

Table 535 (Continued)

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891	
R ENG START	- OFF
WJE 407, 408, 411	
IGNITION	- OFF
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891	
CONTINUOUS IGNITION	- OFF

- (b) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****01 is displayed as binary word value.
- (c) Place L FUEL SHUTOFF switch to OFF and R FUEL SHUTOFF switch to ON. Check that *****10 is displayed as binary word value.
- (d) Rotate thumbwheel switches, select subframe #1 word #7 on DSDU tester. Check that octal word value is between 3700 and 4100.
- (e) Place CONTINUOUS IGNITION switch to OVERRIDE position. Check that octal word value is between 7774 and 7777.
- (f) Rotate thumbwheel switches, select subframe #1 word #36 on DSDU tester. Check that octal word value is between 3735 and 4041.
- (g) Place CONTINUOUS IGNITION switch to GND START/CONT position. Check that octal word value is between 7460 and 7777.

WJE 407, 408, 411

- (h) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****1 is displayed as binary word value.
- (i) Place L FUEL SHUTOFF switch to OFF. Check that *****0 is displayed as binary word value.
- (j) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****1* is displayed as binary word value.
- (k) Place R FUEL SHUTOFF switch to OFF. Check that *****0* is displayed as binary word value.
- (l) Rotate thumbwheel switches, select subframe #1 word #63 on DSDU tester. Check that *****1 is displayed as binary word value.
- (m) Place IGNITION switch to SYS A position. Check that *****1 is displayed as binary word value.
- (n) Place IGNITION switch to OFF position.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (42) Test Pneumatics

<p style="text-align: center;">EFFECTIVITY</p> <p>WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893</p>
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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open this circuit breaker and install safety tag:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	B1-113	PNEU PRESSURE 28 VAC

WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

- (b) Put the left PNEU X-FEED VALVE lever to the OPEN position on the aft pedestal.

WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

- (c) Put the right PNEU X-FEED VALVE lever to the OPEN position on the aft pedestal.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (d) Rotate thumbwheel switches, select subframe #2 word #15 on DSDU tester.

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-863, 866, 868, 891

- (e) On aircraft - Check that *****1 is displayed as binary word value.

WJE 417, 419, 421, 423, 864, 865, 869, 871, 872

- (f) Check that *****1* is displayed as binary word value.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (g) Put the PNEU X-FEED VALVE lever on aft pedestal to the Close position.

WJE 415, 416, 418, 420, 422, 424-427, 429, 861-863, 866, 868, 891

- (h) Check that *****0 is displayed as binary word value.

WJE 417, 419, 421, 423, 864, 865, 869, 871, 872

- (i) Check that *****0* is displayed as binary word value.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (j) Remove the safety tag and close this circuit breaker:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	B1-113	PNEU PRESSURE 28 VAC

- (k) Rotate thumbwheel switches, select subframe #2 word #39 on DSDU tester. Check that octal word value is between 0314 and 0430.

WJE 407, 408, 411

- (43) Test Autobrake Modes

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 407, 408, 411 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open this circuit breaker and install safety tag:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	26	B1-187	LANDING GEAR WARNING

- (b) Place AUTO BRAKE control switches to T.O. and ARM positions.
- (c) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that *****1 is displayed as binary word value.
- (d) Place AUTO BRAKE control switch to MIN. Check that *****0 is displayed as binary word value.
- (e) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester. Check that *****1 is displayed as binary word value.
- (f) Place AUTO BRAKE control switch to OFF. Check that *****0 is displayed as binary word value.
- (g) Place AUTO BRAKE control switches to MIN and ARM positions.
- (h) Rotate thumbwheel switches, select subframe #1 word #22 on DSDU tester. Check that *****1 is displayed as binary word value.
- (i) Place AUTO BRAKE control switch to DISARM. Check that *****0 is displayed as binary word value.
- (j) Remove the safety tag and close this circuit breaker:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	26	B1-187	LANDING GEAR WARNING

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (44) Test Stick Pusher

WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (a) Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester. Check that *****1 is displayed as binary word value on DSDU tester.

WJE 410

- (b) Rotate thumbwheel switches, select subframe #1 word #43 on DSDU tester. Check that *****1* is displayed as binary word value.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (c) Place/rotate STALL TEST switch, on forward overhead switch panel, to SYS 1 position. Check that *****0 is displayed as binary word value on DSDU tester.
- (d) Return STALL TEST switch to OFF position.

WJE 410

- (45) Test Engine Fire Pressure

- (a) Remove wire 1E277J24 from pin 16 of mod block S30-27 at station 160R.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 410 (Continued)

- (b) Remove wire 2E277J24 from pin 15 of mod block S30-27 at station 160R.
- (c) Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester. Check that *****11 is displayed as binary word value.
- (d) Place a ground on wire 1E277J24. Check that *****0* is displayed as binary word value.
- (e) Place a ground on wire 2E277J24. Check that *****0 is displayed as binary word value.
- (f) Connect wire 1E277J24 from pin 16 of mod block S30-27 at station 160R.
- (g) Connect wire 2E277J24 from pin 15 of mod block S30-27 at station 160R.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (46) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891			
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

F	21	B10-45	FLIGHT RECORDER
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UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (47) Remove interconnecting cable from connector on front of DFDR and stow harness.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 409, 410, 880, 881, 883, 884, 892, 893

- (48) Remove DSDU tester harness from interconnecting cable and remove interconnecting cable from playback connector near DFDR and stow harnesses properly.

WJE 886, 887

- (49) Remove DSDU tester harness from interconnecting cable from playback connector near DFDR and stow harnesses properly.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (50) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 880, 881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 884, 891

F	14	B10-328	DIGITAL AIDS RECORDER & MCU
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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

F	21	B10-45	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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C	14	B10-331	FLIGHT RECORDER
---	----	---------	-----------------

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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G	21	B10-46	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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B	7	B10-329	FLIGHT RECORDER
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EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

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**MD-80
AIRCRAFT MAINTENANCE MANUAL
FLIGHT RECORDER - ADJUSTMENT/TEST**

1. General

WJE 406

- A. The digital flight data recorder system consists of a universal flight data recorder (UFDR), a flight data entry panel (FDEP), an accelerometer, a flight data acquisition unit (FDAU), and a performance maintenance recorder (PMR).
- B. The following procedures consist of an operational check and a system test. These tests provide a complete test of the entire recording system including all the input parameters. The systems or sensors that provide these parameters must be operational and will provide all the required signals for the recording system except the acceleration signals and the FDEP inputs. Every parameter monitored by the recording system is processed and recorded on the DFDR. The power lever angle - left and - right potentiometers are used in the flight recorder system only and are discussed in POWER LEVER ANGLE POTENTIOMETER - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-08/201.

WJE 401-404, 873, 874

- C. The digital flight data recorder system consists of a digital flight data recorder (DFDR), a flight data entry panel (FDEP), an accelerometer, and a flight data acquisition unit (FDAU).
- D. The following procedures consist of an operational check and a system test. These tests provide a complete test of the entire recording system including all the input parameters. The systems or sensors that provide these parameters must be operational and will provide all the required signals for the recording system except the acceleration signals and the FDEP inputs. Every parameter monitored by the recording system is processed and recorded on the DFDR.

WJE 401-404, 406, 873, 874

- E. When performing any of the following system tests, the data signal display unit (DSDU) tester must be installed. Check that all BITE indicators are black, reset if necessary.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used in the place of the following items.

Table 501

Name and Number	Manufacturer
Display Unit, Data Signal (981-6301-002)	Sundstrand Data Control
Simulator, Attitude (AS-80)	J.C. Air
Simulator, Fuel Flow (4753880)	The Boeing Company
Simulator, ILS (TIC-30A)	TEL Instruments
Adapter, Test CADC Remote (5963440-1)	The Boeing Company

EFFECTIVITY
WJE 401-404, 406, 873, 874

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Table 501 (Continued)

Name and Number	Manufacturer
Simulator, Speed Sensor P/N 77-M80-1230	Aero Info, Inc.
Test Set, Radio Altimeter (980N-1)	Collins Radio
Test Tool, Temperature	Leeds & Northrup
Potentiometer (8692)	

3. Adjustment/Test

A. Operational Check

- (1) Set parking brake.
- (2) Place FLT RCDR switch, located on aft overhead panel, in GND TEST then in NORM positions. Check that FLT RECORDER OFF annunciator light goes off when switch is in GND TEST and comes on when switch is returned to NORM.

NOTE: On aircraft with electronic overhead annunciator panel (EOAP), it may be necessary to use slew arrows to scroll to the FLT RECORDER OFF message.

NOTE: Aircraft must be in ground mode for this check.

- (3) Release parking brake.

WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

- (4) Open and close this circuit breaker:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

Check that FLT RECORDER OFF annunciator light goes off when circuit breaker is open and comes on when circuit breaker is closed.

- (5) Move left fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (6) Move right fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (7) Reset parking brake.

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WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (8) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 406

- (9) Disconnect wire 1E203J24 from mod block S30-208 pin 22.
 (10) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

EFFECTIVITY
 WJE 401-404, 406, 873, 874

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WJE 406 (Continued)

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FLT RECORDER OFF light goes off.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (11) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (12) Connect wire 1E203J24 to mod block S30-208 pin 22.
 (13) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FLT RECORDER OFF light comes on.

EFFECTIVITY
WJE 401-404, 406, 873, 874

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WJE 406 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (14) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (15) Disconnect wire 2E203J24 from mod block S30-205 pin 12.
 (16) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FLT RECORDER OFF light goes off.

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WJE 406 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (17) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (18) Connect wire 2E203J24 to mod block S30-205 pin 12.
 (19) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FLT RECORDER OFF light comes on.

- (20) Place ENG START R control switch in ON then in OFF position. Check that FLT RECORDER OFF annunciator light goes off when switch is placed in ON and comes on when switch is placed in OFF position.
 (21) Place ENG START L control switch in ON then to OFF position. Check that FLT RECORDER OFF annunciator light goes off when switch is moved to ON and comes on when switch is moved to OFF.

EFFECTIVITY WJE 401-404, 406, 873, 874

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WJE 406 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (22) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 401-404, 406, 873, 874

- (23) Install interconnecting cable between connector harness in data signal display unit (DSDU) box and playback connector near digital flight data recorder (DFDR).
- (24) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (25) Place FLT RCDR switch in GND TEST position. Check that FLT RECORDER OFF annunciator light goes off.

WJE 406

- (26) Place POWER switch to ON. Press LAMP TEST button. Check that all lights on test set come on and that octal display value is 8888.

EFFECTIVITY
WJE 401-404, 406, 873, 874

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WJE 401-404, 873, 874

- (27) Place POWER switch on DSDU tester to ON. Press LAMP TEST button. Check that all lights on test set come on and that octal display value is 8888.

WJE 406

- (28) Place SYNC switch in B position and INPUT switch to ARINC OUTPUT DATA.

NOTE: The following steps check the synchronization word on the digital line from the FDAU after recording. Allow up to 4 seconds time delay for data to appear on the DSDU tester as follows:

- 1 = Specifies light ON
- 0 = Specifies lights OFF
- * = Not applicable (ignore)

WJE 401-404, 873, 874

- (29) Place SYNC switch on DSDU tester to position B, and INPUT switch to ARINC OUTPUT DATA.

NOTE: The following steps check the synchronization word on the digital line from the FDAU after recording. Allow up to 4 seconds time delay for data to appear on the DSDU tester as follows:

- 1 = Specifies light ON
- 0 = Specifies lights OFF
- * = Not applicable (ignore)

WJE 406

- (30) Rotate thumbwheel switches on DSDU tester and select following subframe and word numbers and check that octal display is same as shown in following table:

Table 502

Subframe Number	Word Number	Octal Display/ Binary Word Value
#1	#1	1107/001001000111
#2	#1	2670/010110111000
#3	#1	5107/101001000111
#4	#1	6670/110110111000

- (31) Press and hold FDAU and DFDR self-test switches on the FDEP. Check that FDAU and DFDR FDEP lights come on.
- (32) Pull PULL TO DIM switch, located on overhead switch panel, while holding FDAU and DFDR self-test switches. Check that all FDEP lights dim.
- (33) Press PULL TO DIM switch while holding FDAU and DFDR self-test switches. Check that all FDEP lights increase in brightness.

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WJE 406 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (34) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

Check that FDAU light on FDEP comes on.

- (35) Remove DFDR from connector. Check that DFDR light on FDEP comes on.
 (36) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

Check that FDAU light on FDEP goes off.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (37) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

Install DFDR. Check that DFDR light goes off.

- (38) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

- (39) Rotate code wheel switches on FDEP display to read from left to right 7, 6, 5, 4, 3, 2, 1.

NOTE: Complete transmittal of FDEP code wheel data takes 4 seconds for 4 complete frames.

- (40) Rotate thumbwheel switches on DSDU tester to subframe #1 word #3.
 (41) Press INSERT switch button on FDEP. Check that binary word value displayed on DSDU is *****11.

NOTE: The OCTAL display on the data signal display unit may take up to 4 seconds to clear after any ENTER function. The DOC WORD light will come on.

- (42) Momentarily press FORMAT switch to DOC DATA CLEAR. Check that DOC DATA light is off.
 (43) Rotate thumbwheel switches, select subframe #1 word #5 on DSDU tester.
 (44) Press INSERT switch button on FDEP. Check that binary word value displayed on DSDU is ****00100001.
 (45) Momentarily press FORMAT switch to DOC DATA CLEAR. Check that DOC DATA light is off.
 (46) Rotate thumbwheel switches, select subframe #1 word #7 on DSDU tester.

EFFECTIVITY WJE 401-404, 406, 873, 874

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WJE 406 (Continued)

- (47) Press INSERT switch button on FDEP. Check that octal word value displayed on DSDU is 3124.
- (48) Momentarily press FORMAT switch to DOC DATA CLEAR. Check that DOC DATA light is off.
- (49) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester.
- (50) Press INSERT switch button on FDEP. Check that binary word value displayed on DSDU is ****00110111.
- (51) Momentarily press FORMAT switch to DOC DATA CLEAR. Check that DOC DATA light is off.
- (52) Rotate thumbwheel switches, select subframe #1 word #13 on DSDU tester. Check that *****0 is displayed as binary word value.
- (53) Press EVENT switch button on FDEP. Check that *****1 is displayed as binary word value.

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- (54) Rotate thumbwheel switches on DSDU tester and select following subframe and word numbers and check that octal display or binary word value is same as shown in following table:

Table 503

Subframe Number	Word Number	Octal Display/Binary Word Value
#1	#1	1107/001001000111
#2	#1	2670/010110111000
#3	#1	5107/101001000111
#4	#1	6670/110110111000

- (55) Pull PULL TO DIM switch, located on overhead switch panel, while pressing FDAU and DFDR STATUS self-test lights located on FDEP. Check that both status lights dim.
- (56) Press PULL TO DIM switch while pressing FDAU and DFDR STATUS self-test lights. Check that both status lights increase in brightness.
- (57) Release FDAU and DFDR STATUS self-test lights on FDEP. Check that both status lights go off.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (58) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

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UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FDAU status and MCU light on FDEP comes on.

- (59) Remove DFDR from mounting rack. (PAGEBLOCK 31-31-01/201) Check that DFDR STATUS light on FDEP comes on.
- (60) Install DFDR into mounting rack. (PAGEBLOCK 31-31-01/201)
Check that DFDR STATUS light on FDEP goes off.
- (61) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

Check that FDAU STATUS light goes off.

- (62) Rotate code wheel switches on FDEP display to read from left to right 7, 6, 5, 4, 3, 2, 1.
- (63) Rotate thumbwheel switches, select subframe #1 word #3 on DSDU tester.
- (64) Place DATA switch on DSDU tester to DOCUMENTARY position.
- (65) Press INSERT button on FDEP. Check that octal word value shown on DSDU tester is 7777.
NOTE: The octal display on the DSDU may take up to 4 seconds to clear each time the INSERT button on the FDEP is pressed. The DOC WORD light on the DSDU will come on.
- (66) Place DATA switch on DSDU tester to PARAMETER position.
- (67) Repeat Paragraph 3.A.(63) through Paragraph 3.A.(66) for each subframe and word entry in following table. Check that octal word values are as noted in table.

Table 504

Subframe Number	Word Number	Octal Display
1	5	0041
1	7	3124
1	9	0067

- (68) Rotate thumbwheel switches, select subframe #1 word #13 on DSDU tester. Check that *****0 is displayed as binary word value on DSDU tester.
- (69) Press EVENT button located on FDEP. Check that *****1 is displayed as binary word value on DSDU tester.

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B. System Test

NOTE: After each of following tests, restore system under test to normal or off position as required.

(1) Test Acceleration

- (a) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as in following table:

Table 505

Subframe Number	Word Number	Octal Display
1) Vertical Acceleration		
#1	#2	3441 to 3717
#1	#10	3441 to 3717
2) Lateral Acceleration		
#1	#15	3760 to 4264
3) Longitudinal Acceleration		
#1	#13	3760 to 4264

WJE 401-404, 406

(2) Test Attitude and Heading (Aircraft with AHRS)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 406

C	11	B10-399	AHRS SWITCHING UNIT
---	----	---------	---------------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	2	B10-396	AHRS-2
---	---	---------	--------

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-404

C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY
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WJE 406

- (b) Remove AHRS-2 unit.

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- (c) Remove IRU-2. (PAGEBLOCK 34-43-01/201)

WJE 406

- (d) Install adapter cable of attitude simulator to AHRS-2 aircraft receptacle.

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WJE 401-404

- (e) Install adapter cable of attitude simulator to IRS-2 aircraft receptacle.

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- (f) Place POWER switch on simulator to ON position.
- (g) Place VALIDITY switch to VALID position.
- (h) Rotate VERT GYRO knob on overhead switch panel to NORM position.
- (i) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 406			
C	11	B10-399	AHRS SWITCHING UNIT

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-396	AHRS-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

WJE 401-404, 406

- (j) Place attitude simulator POWER switch in ON position and VALIDITY switch in VALID position. On non-EFIS aircraft, check that ADI on first officer's panel indicates 0(±2)° pitch and 0(±2)° roll.
- (k) Rotate PITCH knob counterclockwise to 5° nose up setting. Check that pitch is 5° up.
- (l) Rotate ROLL knob counterclockwise to 45° RWD setting. Check that roll is 45° RWD.
- (m) Rotate HEADING knob counterclockwise to 15° setting. Check that heading is 15°.

WJE 406

- (n) Place AHRS switch in NORM position.
- (o) On non-EFIS aircraft, check that first officer's ADI flag is biased out of view and indicates 5° pitch up and 45° right wing down.

WJE 401-404, 406

- (p) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 506

Subframe Number	Word Number	Octal Display
#1	#17	0735 to 1043
WJE 401-404		
#1	#48	0735 to 1043

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WJE 401-404 (Continued)

Table 506 (Continued)

Subframe Number	Word Number	Octal Display
WJE 401-404, 406		
#1	#51	0033 to 0077
WJE 401-404		
#1	#20	0033 to 0077
WJE 401-404, 406		
#1	#3	0166 to 0234

- (q) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 406

C	11	B10-399	AHRS SWITCHING UNIT
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UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	2	B10-396	AHRS-2
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UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-404

C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY
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WJE 401-404, 406

- (r) Remove attitude simulator cable.

WJE 401-404

- (s) Install IRU-2 unit. (PAGEBLOCK 34-43-01/201)

WJE 406

- (t) Install IRU-2 unit.

WJE 401-404, 406

- (u) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 406

C	11	B10-399	AHRS SWITCHING UNIT
---	----	---------	---------------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	2	B10-396	AHRS-2
---	---	---------	--------

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WJE 406 (Continued)

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404			
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

WJE 873, 874

(3) Test Attitude

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	05	B10-19	VERTICAL GYRO-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-20	VERTICAL GYRO-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

- (b) Disconnect plugs from vertical gyro-2 unit located on forward accessory compartment shelf.
- (c) Install attitude simulator to vertical gyro-2 connector.
- (d) Place attitude simulator control switches as follows:

Table 507

Switch	Position
PITCH	0°
ROLL	0°
POWER	OFF

- (e) Rotate VERT GYRO knob on overhead switch panel to NORM position.
- (f) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	05	B10-19	VERTICAL GYRO-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-20	VERTICAL GYRO-2

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WJE 873, 874 (Continued)

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

- (g) Place attitude simulator POWER switch in ON position and VALIDITY switch in VALID position. On non-EFIS aircraft, check that ADI on first officer's panel indicates $0(\pm 2)^\circ$ pitch and $0(\pm 2)^\circ$ roll.
- (h) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 508

Subframe Number	Word Number	Octal Display
#1	#17	7755 to 7777 or 0000 to 0021
#1	#48	7755 to 7777 or 0000 to 0021
#1	#51	7755 to 7777 or 0000 to 0021
#1	#20	7755 to 7777 or 0000 to 0021

- (i) Rotate PITCH knob on attitude simulator counterclockwise to 30° pitch up. On non-EFIS aircraft, check that ADI on first officer's panel indicates 30° pitch up.
- (j) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 509

Subframe Number	Word Number	Octal Display
#1	#20	0420 to 0477
#1	#51	0420 to 0477

- (k) Rotate PITCH knob on attitude simulator to 0° . Rotate ROLL knob on attitude simulator counterclockwise to 30° roll.
- (l) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 510

Subframe Number	Word Number	Octal Display
#1	#48	0420 to 0477
#1	#17	0420 to 0477

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WJE 873, 874 (Continued)

- (m) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	05	B10-19	VERTICAL GYRO-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-20	VERTICAL GYRO-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

- (n) Remove attitude simulator from vertical gyro-2 connector.
 (o) Connect plugs on vertical gyro-2 unit.
 (p) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	05	B10-19	VERTICAL GYRO-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	2	B10-20	VERTICAL GYRO-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	7	B10-371	FIRST OFFICER'S HORIZON DISPLAY

- (4) Test Heading Input
- (a) Rotate thumbwheel switches, select subframe #1 word #3 on DSDU tester.
 (b) Press and rotate sync knob on first officer's indicator to a compass card heading of 60°. Check that octal display on DSDU tester is between 1277 and 1350.
 (c) Press and rotate indicator sync knob to a compass card heading of 240°. Check that octal display on DSDU tester is between 5277 and 5356.

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- (5) Test Mag/True Heading Switch
- (a) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester.
 (b) Push MAG/TRUE switch, located on First Officer's instrument panel, so that MAG lamp comes on. Check that binary word value is *****1*.
 (c) Push MAG/TRUE switch, located on First Officer's instrument panel, so that TRUE lamp comes on. Check that binary word value is *****0*.
 (d) Push MAG/TRUE switch, located on Captain's instrument panel, so that MAG lamp comes on. Check that binary word value is *****1*.

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- (e) Push MAG/TRUE switch, located on Captain's instrument panel, so that TRUE lamp comes on. Check that binary word value is *****0*.
- (6) Test Control Column Position
 - (a) Check that captain's control column is in neutral position.
 - (b) Rotate thumbwheel switches, select subframe #1 word #52 on DSDU tester. Check that octal word value is between 0000 and 0100 or 7705 and 7777.
 - (c) Push captain's control column to full forward position. Check that octal word value is between 0257 and 0444.
 - (d) Pull captain's control column to full aft position. Check that octal word value is between 7057 and 7357.
 - (e) Return captain's control column to neutral position.

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- (7) Test Engine Thrust (N₁/N₂)

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Test Engine Thrust

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 873, 874			
U	41	B1-2	ENGINE IGNITION RIGHT
WJE 406			
U	41	B1-423	ENGINE START VALVE RIGHT
WJE 401-404			
U	42	B1-872	ENG START VALVE LEFT & RIGHT
WJE 873, 874			
U	42	B1-1	ENGINE IGNITION LEFT
WJE 406			
U	42	B1-422	ENGINE START VALVE LEFT

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406, 873, 874			
K	26	B1-424	LEFT ENGINE IGNITION

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UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	B1-425	RIGHT ENGINE IGNITION

- (b) Disconnect plug from left engine N₁ tachometer transmitter.
- (c) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (d) Adjust simulator to simulate 90% rpm. Check that left engine N₁ indicator on center instrument panel is at 90% rpm.
- (e) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 511

Subframe Number	Word Number	Octal Display
#1	#33	1373 to 1436
#3	#33	1373 to 1436

- (f) Remove simulator from wire harness and reconnect connector to N₁ tachometer transmitter plug.
- (g) Disconnect plug from left engine N₂ tachometer transmitter.
- (h) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (i) Adjust simulator to simulate 90% rpm. Check that left engine N₂ indicator on center instrument panel is at 90% rpm.
- (j) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is as shown in following table:

Table 512

Subframe Number	Word Number	Octal Display
#1	#53	1373 to 1436
#3	#53	1373 to 1436

- (k) Remove simulator from wire harness and reconnect connector to left engine N₂ tachometer transmitter plug.
- (l) Disconnect plug from right engine N₁ tachometer transmitter.
- (m) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (n) Adjust simulator to simulate 90% rpm. Check that right engine N₁ indicator on center instrument panel is at 90% rpm.
- (o) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 513

Subframe Number	Word Number	Octal Display
#2	#33	1373 to 1436
#4	#33	1373 to 1436

- (p) Remove simulator from wire harness and reconnect connector to right engine N₁ tachometer transmitter plug.

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- (q) Disconnect plug from right engine N₂ tachometer transmitter.
- (r) Connect N₁/N₂ speed sensor simulator to transmitter wire harness.
- (s) Adjust simulator to simulate 90% rpm. Check that right engine N₂ indicator on center instrument panel is at 90% rpm.
- (t) Rotate thumbwheel switches, and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 514

Subframe Number	Word Number	Octal Display
#2	#53	1373 to 1436
#4	#53	1373 to 1436

- (u) Remove simulator from wire harness and install connector to right engine N₂ tachometer transmitter plug.
- (v) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 873, 874			
U	41	B1-2	ENGINE IGNITION RIGHT
WJE 406			
U	41	B1-423	ENGINE START VALVE RIGHT
WJE 401-404			
U	42	B1-872	ENG START VALVE LEFT & RIGHT
WJE 873, 874			
U	42	B1-1	ENGINE IGNITION LEFT
WJE 406			
U	42	B1-422	ENGINE START VALVE LEFT

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406, 873, 874			
K	26	B1-424	LEFT ENGINE IGNITION

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	26	B1-425	RIGHT ENGINE IGNITION

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- (w) Rotate thumbwheel switch, select subframe #2 word #4 on DSDU.
- (x) Place ENG SYNC switch on overhead panel in N₁ position. Check that *****0* is displayed as binary word value.
- (y) Place ENG SYNC switch in OFF position. Check that *****1* is displayed as binary word value.

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CAUTION: CLEAR RIGHT AILERON AREA OF ALL PERSONNEL AND EQUIPMENT.

(8) Test Surface Position Input (Ailerons)

NOTE: To conduct this test, move ailerons manually.

- (a) Rotate thumbwheel switches, and select subframe #1 word #40 on DSDU tester.
- (b) Move and hold left aileron to full down travel. Check that octal display on DSDU tester is between 0343 and 0463.
- (c) Return left aileron to neutral position. Check that octal display on DSDU tester is between 7733 and 7777 or 0000 and 0036.
- (d) Move and hold left aileron to full up travel. Check that octal display on DSDU tester is between 7313 and 7435.

(9) Test Surface Position Input (Elevators)

NOTE: To conduct this test, move elevators manually.

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- (a) Rotate thumbwheel switches, select subframe #1 word #32 on DSDU tester.

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- (b) Rotate thumbwheel switches, and select subframe #1 word #32 on DSDU tester.

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- (c) Move left elevator to down stop. Check that octal display on DSDU tester is between 0404 and 0546.
- (d) Move left elevator to 0° in alignment with rig mark on horizontal stabilizer. Check that octal display on DSDU tester is between 7733 and 7777 or 0000 and 0043.
- (e) Move left elevator to up stop. Check that octal display on DSDU tester is between 6563 and 6756.

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- (f) Rotate thumbwheel switches, select subframe #1 word #64 on DSDU tester.

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- (g) Rotate thumbwheel switches, and select subframe #1 word #64 on DSDU tester.

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- (h) Move right elevator to down stop. Check that octal display on DSDU tester is between 0404 and 0546.
 - (i) Move right elevator to 0° in alignment with rig mark on horizontal stabilizer. Check that octal display on DSDU tester is between 7733 and 7777 or 0000 and 0043.
 - (j) Move right elevator to up stop. Check that octal display on DSDU tester is between 6563 and 6756.
- (10) Test Surface Position Input (Rudder)
- (a) Make certain that rudder trim control, located on control pedestal, is in NOSE 0° position.

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- (b) Rotate thumbwheel switches, select subframe #1 word #27 on DSDU tester.

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- (c) Rotate thumbwheel switches, and select subframe #1 word #48 on DSDU tester.

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- (d) Check that octal display on DSDU tester is between 0000-0726 and 7656-7777.
 - (e) Push right rudder pedal to full forward position and hold.
 - 1) Check that octal display on DSDU tester is between 6260-6577.
 - (f) Push left rudder pedal to full forward position and hold.
Check that octal display on DSDU tester is between 1014-1203.
 - (g) Return rudder pedals to neutral position.
 - (h) Return rudder pedals to neutral position.
- (11) Test Surface Position Input (Spoiler)

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED AND THAT SPOILERS AND RUDDER ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
- (b) Move spoiler control handle to ground spoiler position. Check that spoiler displays follow speedbrake handle motion. Ground spoiler position of speedbrake handle represents full scale deflection of spoiler displays.
- (c) Rotate thumbwheel switches, select subframe #1 word #25 on DSDU tester. Check that right spoiler position and octal value display are as shown in following table:

Table 515

Actual Spoiler Position	Octal Display
56°	6500 to 6564
57°	6464 to 6547
58°	6450 to 6531
59°	6434 to 6514
60°	6420 to 6500
61°	6405 to 6464
62°	6372 to 6450
63°	6357 to 6434
64°	6344 to 6420

- (d) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester. Check that left spoiler position and octal value display are as shown in following table:

Table 516

Actual Spoiler Position	Octal Display
56°	6414 to 6500
57°	6400 to 6462
58°	6364 to 6446

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Table 516 (Continued)

Actual Spoiler Position	Octal Display
59°	6350 to 6431
60°	6335 to 6414
61°	6321 to 6400
62°	6306 to 6364
63°	6273 to 6350
64°	6260 to 6335

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- (e) Move speedbrake control handle to RET position. Check that spoiler displays return to retracted position. Check that octal word value display on DSDU tester is between 7755 and 7777 or 0000 and 0021.
- (f) Rotate thumbwheel switches, and select subframe #1 word #41 on DSDU tester to test right spoiler. Check that octal display on DSDU tester is between 7755 and 7777 or 0000 and 0021.

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- (g) Move speedbrake control handle to RET position. Check that spoiler displays return to retracted position. Check that octal word value display on tester is between 7755 and 7777 or 0000 and 0021.
- (h) Rotate thumbwheel switches, select subframe #1 word #25 on DSDU tester to test right spoiler. Check that octal display on tester is between 7755 and 7777 or 0000 and 0021.

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- (12) Test Horizontal Stabilizer Position Input
 - (a) Move horizontal stabilizer control handle to 0° position. Check that horizontal stabilizer indicator is at 0°.

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- (b) Rotate thumbwheel switches, and select subframe #1 word #20 on DSDU tester. Check that octal display on DSDU tester is between 7733 and 7777 or 0000 and 0043.

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- (c) Rotate thumbwheel switches, select subframe #1 word #55 on DSDU tester. Check that octal display on tester is between 7733 and 7777 or 0000 and 0043.

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- (d) Pull both trim handles on pedestal aft to mechanical nose up stop. Check that horizontal stabilizer indicator reads 12° nose up and octal display on DSDU tester is between 6636 and 7041.
- (13) Test Flap Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)

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- (b) Place FLAP/SLAT handle on pedestal in RET (up) position.

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- (c) Rotate thumbwheel switches and select following subframe and word numbers on DSDU tester. Check that octal display is same as shown on following table:

Table 517

Subframe Number	Word Number	Octal Display
#1	#39	7744 to 7777 or 0000 to 0032
#2	#39	7744 to 7777 or 0000 to 0032

- (d) Place FLAP/SLAT handle at 40°. Check that octal display on tester is between 7041 and 7175.
- (e) Rotate thumbwheel switches, select subframe #1 word #39 on DSDU tester. Check that octal display on DSDU tester is between 0601 and 0735.

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- (f) Rotate thumbwheel switches, select subframe #1 word #39 on DSDU tester. Check that octal display on DSDU tester is between 7744 and 7777 or 0000 and 0032.
- (g) Place FLAP/SLAT handle at 40°. Check that octal display on DSDU tester is between 0601 and 0735.

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- (h) Depressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
- (14) Test Air Data Parameter Input
 - (a) Connect P2 of CADC remote test adapter to test connector on CADC-2.
 - (b) Place CADC-2 FUNCTION TEST switch on CADC remote test adapter in ON position and all other switches in OFF position. Press and hold PUSH TO TEST button. Check that first officer's instruments indicate altitude of 9890(±50) feet and airspeed of 420(±20) knots.
 - (c) Rotate thumbwheel switches, and select following subframe and word numbers on the DSDU tester. Check that octal display is same as shown in following table:

Table 518

Subframe Number	Word Number	Octal Display
#1	#5	3160 to 3324
#1	#19	3200 to 3240
#2	#55	0000 to 0013

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- (d) Rotate thumbwheel switches, select subframe #1 word #23 on DSDU tester. Press 12 bit word switch on DSDU tester and check that 0002 is displayed in octal word value section.
- (e) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

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Table 519

Subframe Number	Word Number	Octal Display
#1	#21	1272 to 1440
#2	#21	2520 to 2550

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- (f) Rotate thumbwheel switches, select subframe #1 word #23 on DSDU tester. Check that OCTAL DISPLAY switch is in 12 bit position and that 0002 is displayed in octal word value section on DSDU tester.
- (g) Rotate thumbwheel switches, select subframe #1 word #21 on DSDU. Check that octal word value is between 1272 and 1440.

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- (h) Rotate thumbwheel switches, select subframe #2 word #21 on DSDU tester. Check that octal word value is between 2520 and 2550.

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- (i) Remove CADC remote test adapter from test connector on CADC-2.
- (15) Test Radio Altimeter Input

NOTE: Allow radio altimeter systems 2 minutes to warm up and check that captain's and first officer's radio altimeter indicators read 0(±5) feet.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

- (b) Connect radio altimeter test set to test connector on radio altimeter transmitter-1 located in center cargo compartment.
- (c) Close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

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- (d) Rotate thumbwheel switches, select subframe #1 word #44 on DSDU tester. Check that octal word value is between 0037 and 0076.
- (e) Use test set to position airplane symbol on captain's radio altimeter at 2500(±100) feet. Check that octal word value on DSDU tester is between 6166 and 6330.

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- (f) Rotate thumbwheel switches, select subframe #1 word #28 on DSDU tester. Adjust radio altimeter test set to 200 feet. Check that octal display on DSDU tester is between 6520 and 6756.
- (g) Return radio altimeter test set reading to 0 feet on captain's radio altimeter indicator. Check that octal display on DSDU tester is between 0356 and 0614.

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (h) Open these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

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- (i) Disconnect radio altimeter test set from radio altimeter transmitter-1 and connect test set to transmitter-2.

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- (j) Close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

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- (k) Adjust to 0 feet on first officer's radio altimeter indicator.
- (l) Rotate thumbwheel switches, select subframe #1 word #55 on DSDU tester. Check that octal display on DSDU tester is between 0035 and 0072.
- (m) Rotate thumbwheel switches, select subframe #1 word #35 on DSDU tester. Check that airplane symbol on first officer's radio altimeter indicator is at 0 feet and octal word value is between 0337 and 0564.
- (n) Rotate thumbwheel switches, select subframe #2 word #35 on DSDU tester. Check that octal display on DSDU tester is between 0337 and 0564.

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- (o) Use radio altimeter test set to position airplane symbol on first officer's indicator at 200(±10) feet. Check that octal display on DSDU tester is between 6442 and 6676.
- (p) Rotate thumbwheel switches, select subframe #1 word #35 on DSDU tester. Check that octal display on DSDU tester is between 6442 and 6676.
- (q) Adjust radio altimeter test set to 2500 feet.
- (r) Rotate thumbwheel switches, select subframe #1 word #55 on DSDU tester. Check that octal display on DSDU tester is between 6115 and 6256.

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- (s) Rotate thumbwheel switches, select subframe #1 word #24 on DSDU tester. Check that aircraft symbol on first officer's radio altimeter indicator is at 0(±5) feet and octal word value is between 0356 and 0614.
- (t) Use test set to position airplane symbol on first officer's radio altimeter at 200(±10) feet. Check that airplane symbol on first officer's radio altimeter indicator is at 200 feet and octal word value on DSDU tester is between 6520 and 6756.

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- (u) Return radio altimeter test set reading to 0 feet.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (v) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

- (w) Disconnect radio altimeter test set from radio transmitter-2.
- (x) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	3	B10-106	RADIO ALTMETER-2

- (16) Test ILS Input (Glideslope and Localizer Deviation)
 - (a) Rotate course selector knobs on both VHF NAV control panels so that course select bars on Horizontal Situation Indicator (HSI), on EFIS equipped aircraft Navigation Display (ND), point to heading index at top of indicator.
 - (b) Position ILS simulator in front of aircraft to align with VOR localizer antenna on vertical stabilizer.

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- (c) Adjust ILS simulator to move captain's and first officer's course deviation bar right one dot and glideslope pointer up one dot. Check that localizer and glideslope are +1 dot.
- (d) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 520

Subframe Number	Word Number	Octal Display
#1	#6	4527 to 4650
#1	#54	4527 to 4650
#1	#22	4527 to 4650
#1	#38	4527 to 4650

- (e) Adjust ILS simulator to move captain's and first officer's course deviation bar left one dot and glideslope pointer down one dot. Check that localizer and glideslope are -1 dot.
- (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 521

Subframe Number	Word Number	Octal Display
#1	#38	3127 to 3250
#1	#22	3124 to 3250
#1	#54	3124 to 3250
#1	#6	3127 to 3250

(17) Test Slat Position

- (a) Check that slats are in retracted position.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Open this circuit breaker and install safety tag:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

- (c) Rotate thumbwheel switches, select subframe #1 word #41 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.
- (d) Rotate thumbwheel switches, select subframe #1 word #29 on DSDU tester. Check that *****10 is displayed as binary word value on DSDU tester.
- (e) Remove the safety tag and close this circuit breaker:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

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- (f) Open this circuit breaker and install safety tag:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

- (g) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.
- (h) Rotate thumbwheel switches, select subframe #1 word #17 on DSDU tester. Check that *****0 is displayed as binary word value on DSDU tester.

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (i) Extend slats to mid position. Check that *****1 is displayed as binary word value on DSDU tester.

NOTE: If the slats cannot be extended at the time of the test, the mid position extension may be simulated. The sensors are located on the slat drive wheel aft of the mid cargo compartment. Place a steel shim against the left "B" and the right "B" sensors. Place an aluminum shim against the left "A" and right "A" sensors.

- (j) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****0* is displayed as binary word value on DSDU tester.
- (k) Remove the safety tag and close this circuit breaker:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

NOTE: If slats are not in extended position, place steel shims on left and right slats "C" and "D" sensors.

- (l) Rotate thumbwheel switches, select subframe and word numbers on DSDU tester as follows and check that binary word value is same as shown in following table:

Table 522

Subframe Number	Word Number	Binary Display
#1	#41	*****0*
#1	#29	*****01

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (m) Retract slats.

NOTE: Remove shims, if used in Paragraph 3.B.(17)(i) and Paragraph 3.B.(17)(k).

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- (n) Rotate thumbwheel switches, select subframe #1 word #17 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.
- (o) Turn off hydraulic power to slats.

NOTE: If hydraulic power cannot be turned off at this time, the handle/slat disagreement may be simulated by placing a steel shim under the left B proximity sensor.

WARNING: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

- (p) Move slat handle to mid position. Check that *****0* is displayed as binary word value on DSDU tester.
 - (q) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
 - (r) Retract slats.
 - (s) Depressurize hydraulic system if no longer needed. (PAGEBLOCK 29-00-00/201)
 - (t) Remove shims, if used in Paragraph 3.B.(17)(o).
- (18) Test Thrust Reverser Position
- (a) Rotate thumbwheel switches, select subframe and word numbers on DSDU tester as follows and check that binary display is same as shown on following table:

Table 523

Subframe Number	Word Number	Binary Display
#1	#7	*****11
#2	#7	*****11
#3	#7	*****11
#4	#7	*****11

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (c) Install two jumper wires from a bonded ground to terminals 8 and 9, on module block S30-202 located in aft electrical electronic compartment.

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- (d) Remove the safety tags and close these circuit breakers:

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

- (e) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester and check that binary display is same as shown on following table:

Table 524

Subframe Number	Word Number	Binary Display
#1	#7	*****00
#3	#7	*****00

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (f) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

- (g) Remove two jumper wires from terminals 8 and 9.
 (h) Install two jumper wires from terminals 6 and 7 to bonded ground.
 (i) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (j) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester and check that binary display is same as shown on following table:

Table 525

Subframe Number	Word Number	Binary Display
#2	#7	*****00
#4	#7	*****00

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (k) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

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- (l) Remove two jumper wires from terminals 6 and 7 to ground.
- (m) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- (19) Test VHF Communication Keying
 - (a) Rotate dual frequency selectors, located on pedestal, to move all transceivers to unused frequencies.
 - (b) Install microphone in MIC jack on VHF transceiver-1, located on forward right radio rack or use the cockpit microphone.
 - (c) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that *****00 is displayed as binary word value.
 - (d) Press and hold press-to-talk button on microphone. Check that *****01 is displayed as binary word value.
 - (e) Release press-to-talk button, remove microphone from transceiver-1 and install in MIC jack on VHF transceiver-2.
 - (f) Press and hold press-to-talk button on microphone for about 1 second. Check that *****01 is displayed as binary word value.

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- (g) Release press-to-talk button, remove microphone from transceiver-2.

WJE 406

- (h) Release press-to-talk button, remove microphone from transceiver-2 and install in MIC jack on VHF transceiver-3.
- (i) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****0 is displayed as binary word value.
- (j) Press and hold press-to-talk button on microphone. Check that *****1 is displayed as binary word value.
- (k) Release press-to-talk button, remove microphone from transceiver-3.

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- (l) Press #1 VHF mic select switch on audio panel located in forward right radio rack.
- (m) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that *****11 is displayed as binary word value.
- (n) Key R/T - I/C switch to R/T position. Check that *****10 is displayed as binary word value.
- (o) Release R/T - I/C switch.
- (p) Press #2 VHF mic select switch on audio panel located in forward right radio rack. Check that *****01 is displayed as binary word value.

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- (q) Key R/T - I/C switch to R/T position.
- (r) Release R/T - I/C switch.
- (s) Press #3 VHF mic select switch on audio panel located in forward right radio rack.
- (t) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****1 is displayed as binary word value.
- (u) Key R/T - I/C switch to R/T position. Check that *****0 is displayed as binary word value.
- (v) Release R/T - I/C switch.

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(20) Test Cabin Pressure Warning

- (a) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****1* is displayed as binary word value.
- (b) Install jumper wire across terminals of cabin low pressure warning switch. Check that *****0* is displayed as binary word value.
- (c) Remove jumper wire from cabin low pressure warning switch terminals.

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(21) Test Flight/Ground Sensing

WJE 401-404

- (a) Rotate thumbwheel switches, select subframe #1 word #22 on DSDU tester. Check that *****1 is displayed as binary word value.

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- (b) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****0 is displayed as binary word value.

WJE 406

- (c) Rotate thumbwheel switches, select SUBFRAME #1 WORD #51 on DSDU tester. Check that *****1* is displayed as binary word value.

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (d) Open this circuit breaker and install safety tag:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

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Check that *****1 is displayed as binary word value.

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Check that *****0 is displayed as binary word value.

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- (e) Remove the safety tag and close this circuit breaker:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

- (22) Test Marker Beacon

- (a) Rotate thumbwheel switches, select subframe #0 word #3 on DSDU tester. Check that *****00 is displayed in binary word value section.
- (b) Press and hold self-test switch on marker beacon receiver. Check that *****11 is displayed in binary word value section momentarily. Release self-test switch.

NOTE: BIT 1 will change state when outer marker light comes on and BIT 2 will change when middle marker light comes on.

WJE 406

- (c) Rotate thumbwheel switches, select subframe #0 word #22 on DSDU tester. Check that *****0* is displayed as binary word value.
- (d) Press and hold self-test switch on marker beacon receiver. Check that *****1* is displayed as binary word value.

NOTE: BIT 2 will change state as inner marker light comes on.

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- (23) Test Fire Warning

WJE 406

- (a) Place R ENG, L ENG, and APU LOOPS selector switches on aft overhead switch panel in A position.

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- (b) Place L ENG and R ENG LOOPS selector switches on aft overhead switch panel in A position.

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- (c) Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester. Check that *****1* is displayed as binary word value.
- (d) Press LOOPS A TEST switch located on center instrument panel. Check that *****0* is displayed as binary word value. Release switch.
- (e) Rotate thumbwheel switches, select subframe #1 word #43 on DSDU tester. Check that *****1 is displayed as binary word value.
- (f) Press LOOPS A TEST switch. Check that *****0 is displayed as binary word value. Release switch.

WJE 406

- (g) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that *****1 is displayed as binary word value.
- (h) Press LOOPS A TEST switch. Check that *****0 is displayed as binary word value. Release switch.

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- (24) Test Hydraulic Systems Status
- (a) Disconnect electrical connector from left hydraulic pressure switch (S1-126) and left hydraulic temperature switch (S1-128), located on forward outboard corner of left wheelwell. Rotate thumbwheel switches, select subframe #1 word #39 on DSDU tester. Check that *****11 is displayed as binary word value.
 - (b) Place an electrical ground to pin B of S1-126. Check that *****10 is displayed as binary word value.
 - (c) Move electrical ground to pin 1 of S1-128. Check that *****01 is displayed as binary word value.
 - (d) Disconnect electrical connector from right hydraulic pressure switch (S1-127) and right hydraulic temperature switch (S1-129), located on aft inboard corner of right wheelwell. Rotate thumbwheel switches, select subframe #2 word #39 on DSDU tester. Check that *****11 is displayed as binary word value.
 - (e) Place an electrical ground to pin B of S1-127. Check that *****10 is displayed as binary word value.
 - (f) Move electrical ground to pin 1 of S1-129. Check that *****01 is displayed as binary word value.
 - (g) Remove electrical ground and connect electrical connectors to left and right hydraulic pressure switches and temperature switches disconnected in previous steps.
- (25) Test Landing Gear
- (a) Rotate thumbwheel switches, select subframe #1 word #4 on DSDU tester. Check that *****01 is displayed as binary word value on DSDU tester.
 - (b) Use an aluminum shim to cover landing gear down proximity sensor. Check that *****00 is displayed as binary word value on DSDU tester.
 - (c) Remove shim from landing gear down proximity sensor.
 - (d) Use a steel shim to cover landing gear up proximity sensor. Check that *****11 is displayed as binary word value on DSDU tester.
 - (e) Remove shim from landing gear up proximity sensor.

WJE 406

- (26) Test Engine Pressure Ratio (EPR)

NOTE: The following procedures are typical for both engines except as noted:

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

CAUTION: MAKE CERTAIN RIGHT ENGINE UPPER COWL DOOR IS CLOSED BEFORE OPERATING APU, OR APU EXHAUST WILL IMPINGE DIRECTLY ON COWL DOOR CAUSING EXTENSIVE DAMAGE.

- (a) Open this circuit breaker and install safety tag:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	25	B1-806	RIGHT PRESSURE RATIO

- (b) Open access door (5901C) for left engine or (5902C) for right engine.

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- (c) Check that EPR indicator OFF flag is in view when power is off.
- (d) Disconnect flexible hose from Pt₂ elbow fitting located on inboard side of engine at flange D, approximately 8 o'clock position.
- (e) Connect Pt₂ pressure tubing from EPR tester to Pt₂ flex hose on engine.
- (f) Slowly open inlet valve for Pt₂ and adjust Pt₂ pressure regulator to 45 in. hg. (152.4 kPa) absolute.
- (g) Close shutoff valve at pressure source.
- (h) Check that pressure leakage does not exceed 0.25 in. hg. (0.85 kPa) during 5-minute period.
- (i) Relieve Pt₂ test pressure slowly by opening Pt₂ vent valve.
- (j) Disconnect flexible hose from Pt₇ tee fitting located on inboard side of engine between flanges J and J1, approximately 8 o'clock position.
- (k) Connect Pt₇ pressure tubing from EPR tester to Pt₇ flexible hose on engine.
- (l) Slowly open inlet valve for Pt₇ and adjust Pt₇ pressure regulator to 60 in. hg. (203.2 kPa) absolute.
- (m) Close shutoff valve at pressure source.
- (n) Check that pressure leakage does not exceed 0.25 in. hg. (0.85 kPa) during a 5-minute period.
- (o) Relieve test pressure slowly by opening Pt₇ shutoff overboard vent valve.
- (p) Remove the safety tag and close this circuit breaker:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	25	B1-806	RIGHT PRESSURE RATIO

- (q) Check that OFF flag on EPR indicator is out of view when power is applied.
- (r) Allow 2 minute for EPR computer to warm up.
- (s) Slowly open inlet valve for Pt₇ and adjust Pt₇ pressure regulator to 32 in. hg. (108.4 kPa) absolute.
- (t) Slowly open inlet valve for Pt₂ and adjust Pt₂ pressure regulator to 32 in. hg. (108.4 kPa) absolute.
- (u) Check EPR indicator located on center instrument panel in flight compartment for counter display of 1.000(±0.010) EPR.
- (v) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester. Check that octal display on DSDU tester is between 5140 and 5356.
- (w) Slowly open inlet valve for Pt₇ and adjust Pt₇ pressure regulator to 48 in. hg. (162.6 kPa) absolute.
- (x) Check EPR indicator located on center instrument panel in flight compartment for counter display of 1.500(±0.010) EPR.
- (y) Check that octal display value is between 7244 and 7451.
- (z) Slowly open inlet valve for Pt₇ and adjust Pt₇ pressure regulator to 64 in. hg. (216.7 kPa) absolute.

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- (aa) Check EPR indicator located on center instrument panel in flight compartment for counter display of 2.000(±0.010) EPR.
- (ab) Check that octal display value is between 1263 and 1534.
- (ac) Shut off Pt₂ and Pt₇ inlet valves.

CAUTION: DO NOT ALLOW PT2 PRESSURE TO EXCEED PT7 PRESSURE DURING SHUTDOWN PROCEDURE TO PREVENT DAMAGE TO PRESSURE RATIO TRANSMITTER.

- (ad) Relieve Pt₂ test pressure slowly by opening Pt₂ vent valve.
- (ae) Relieve Pt₇ test pressure slowly by opening Pt₇ vent valve.
- (af) Disconnect Pt₂ and Pt₇ EPR setup tubing from flexible hoses on engine.
- (ag) Connect Pt₂ flexible hose to elbow fitting located on inboard side of engine at flange D.
- (ah) Connect Pt₇ flexible hose to tee fitting located on inboard side of engine between flanges J and J1.
- (ai) Check that both connections are securely and properly installed to preclude damage on subsequent leakage.
- (aj) Remove tools, equipment, loose hardware, and debris from maintenance area.
- (ak) Repeat Paragraph 3.B.(26)(a) through Paragraph 3.B.(26)(aj) for right engine except for Paragraph 3.B.(26)(v) substitute word #27 for word #11.
- (al) Close access door (5901C) for left engine or (5902C) for right engine.

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- (27) Test Engine Pressure Ratio
 - (a) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 526

Subframe Number	Word Number	Octal Display
#1	#41	5140 to 5356
#1	#8	5140 to 5356

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- (28) Test Fuel Flow and Fuel Total

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Test Fuel Flow

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (b) Set fuel flow simulator controls as follows:

- 0A 0B switch to OFF
- Fuel Flow Simulate rotary switch to ZERO (PPH), or ZERO (KgPH), as applicable
- Counter switch to OFF
- Indicator Model switch to EDP.

- (c) Disconnect aircraft electrical cable connector from left engine fuel flow transmitter. Connect fuel flow simulator to electrical cable connector. Connect simulator grounding cable to airframe structure (ground).

- (d) Remove the safety tag and close this circuit breaker:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

- (e) Set the simulator controls as follows:

- 1) Put Fuel Flow Simulate switch in VAR, KgPH section.
- 2) Slowly turn VAR FLOW knob until indicator shows 1320 KgPH. Make sure that the fuel flow indicator follows smoothly.

WJE 406

- (f) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that octal display on DSDU tester is between 1310 and 1404.

WJE 401-404, 873, 874

- (g) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 527

Subframe Number	Word Number	Octal Display
#1	#30	1310 to 1404
#3	#30	1310 to 1404

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- (h) Slowly turn the VAR FLOW knob to zero and put FUEL FLOW SIMULATE switch to zero (PPH).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (i) Open this circuit breaker and install safety tag:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

- (j) Disconnect fuel flow simulator from electrical cable connector and connect aircraft electrical cable connector to left engine fuel flow transmitter. Disconnect simulator grounding cable from airframe structure.
- (k) Disconnect aircraft electrical cable connector from right engine fuel flow transmitter. Connect fuel flow simulator to electrical cable connector. Connect simulator grounding cable to airframe structure (ground).
- (l) Remove the safety tag and close this circuit breaker:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (m) Rotate selector knob on fuel flow simulator to 1320 kg/hr position.
- (n) Open this circuit breaker and install safety tag:

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

- (o) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 528

Subframe Number	Word Number	Octal Display
WJE 406		
#1	#30	1310 to 1404
WJE 401-404, 406, 873, 874		
#2	#30	1310 to 1404
WJE 406		
#3	#30	1310 to 1404
WJE 401-404, 406, 873, 874		
#4	#30	1310 to 1404

- (p) Slowly turn the VAR FLOW knob to zero and put FUEL FLOW SIMULATE switch to zero (KgPH).

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- (q) Disconnect fuel flow simulator from electrical cable connector and connect aircraft electrical cable connector to right engine fuel flow transmitter. Disconnect simulator grounding cable from airframe structure.

WJE 401-404, 406, 873, 874

- (r) Remove the safety tags and close these circuit breakers:

UPPER EPC, ENGINE - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	27	B1-75	LEFT FUEL FLOW

UPPER EPC, ENGINE - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	27	B1-76	RIGHT FUEL FLOW

WJE 406

- (s) Rotate thumbwheel switches, select subframe #2 word #23 on DSDU tester.
- (t) Press TEST switch button on fuel quantity indicator located on center instrument panel. Check that octal display is between 1627 and 1725.
- (u) Release TEST switch button.
- (v) Rotate thumbwheel switches, select subframe #4 word #23 on DSDU tester.
- (w) Press TEST switch button on fuel quantity indicator. Check that octal display is between 1627 and 1725.
- (x) Release TEST switch button.

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- (29) Test EGT Input

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406			
B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
WJE 873, 874			
B	15	B1-890	ENGINE EXHAUST TEMP LEFT

WJE 401-404, 406, 873, 874

- (b) Disconnect connector R5-11 at left engine firewall, and connect Leeds and Northrup test tool to pins A and B of connector.

NOTE: Use Alumel wire between binding post (-) and pin A and Chromel wire between binding post (+) and pin B.

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- (c) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-404, 406

B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
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WJE 873, 874

B	15	B1-890	ENGINE EXHAUST TEMP LEFT
---	----	--------	--------------------------

WJE 401-404, 406, 873, 874

- (d) Adjust Leeds and Northrup scale setter to 500°C and check that EGT indicator indicates 500°C(±7°C).

WJE 406

- (e) Rotate thumbwheel switches, select subframe #1 word #24 on DSDU tester. Check that octal display on DSDU tester is between 4703 and 5075.

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- (f) Rotate thumbwheel switches, select subframe #1 word #9 on DSDU tester. Check that octal display on DSDU tester is between 4703 and 5075.

WJE 401-404, 406, 873, 874

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (g) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-404, 406

X	35	B1-965	EGT, N1, N2 DISPLAY RIGHT
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OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
---	----	--------	--------------------------

WJE 873, 874

B	15	B1-890	ENGINE EXHAUST TEMP LEFT
---	----	--------	--------------------------

C	15	B1-891	ENGINE EXHAUST TEMP RIGHT
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WJE 401-404, 406, 873, 874

- (h) Disconnect test tool connected in Paragraph 3.B.(29)(b), and connect connector R5-11 to left engine firewall connector.
- (i) Disconnect connector R5-12 at the right engine firewall, and connect Leeds and Northrup test tool to pins A and B of connector.

NOTE: Use Alumel wire between binding post (-) and pin A and Chromel wire between binding post (+) and pin B.

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- (j) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-404, 406

X	35	B1-965	EGT, N1, N2 DISPLAY RIGHT
---	----	--------	---------------------------

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

B	15	B1-963	EGT, N1, N2 DISPLAY LEFT
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B	15	B1-890	ENGINE EXHAUST TEMP LEFT
C	15	B1-891	ENGINE EXHAUST TEMP RIGHT

WJE 401-404, 406, 873, 874

- (k) Adjust Leeds and Northrup scale setter to 500°C. Check that EGT indicator reads 500°C(±7°C).

WJE 406

- (l) Rotate thumbwheel switches and select subframe #1 word #25 on the DSDU tester. Check that octal display in DSDU tester is between 4703 and 5075.

WJE 401-404, 873, 874

- (m) Rotate thumbwheel switches, select subframe #1 word #12 on DSDU tester. Check that octal display in DSDU tester is between 4703 and 5075.

WJE 401-404, 406, 873, 874

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (n) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-404, 406

X	35	B1-965	EGT, N1, N2 DISPLAY RIGHT
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OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 873, 874

C	15	B1-891	ENGINE EXHAUST TEMP RIGHT
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WJE 401-404, 406, 873, 874

- (o) Disconnect test tool connected in Paragraph 3.B.(29)(i), and connect connector R5-12 to right engine firewall connector.
- (p) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
X	35	B1-965	EGT, N1, N2 DISPLAY RIGHT

OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 873, 874			
C	15	B1-891	ENGINE EXHAUST TEMP RIGHT

WJE 401-404, 406, 873, 874

(30) Test Autopilot

WJE 406

- (a) Place following switches, located on glareshield flight guidance control panel, in positions as indicated:
- AP ON switch in OFF
 - Captain's FD switch in OFF
 - First Officer's FD switch in OFF
 - ALT control adjusted to 5000 feet in altitude preselect window.

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- (b) Place following switches, located on glareshield flight guidance control panel, in positions as indicated:
- AP ON switch in OFF
 - Captain's FD switch in OFF
 - First Officer's FD switch in OFF
 - ALT switch adjusted to 5000 feet in altitude preselect window.

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- (c) Rotate thumbwheel switches, select subframe #0 word #28 on DSDU. Check that following binary word values appear in sequence at rate of one per second:

Table 529

Binary Word Value	Subframe	Channel
*****00	--	Roll
*****01	--	Pitch
*****10	--	Armed
*****11	--	Autothrottle

NOTE: Paragraph 3.B.(30)(c) must always be repeated anytime power is interrupted to the autopilot during testing. Subframe positions are not constant with respect to channels.

- (d) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(30)(c) for pitch word #27 on DSDU tester. Check that *****00 is displayed as binary word value.

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- (e) Place captain's FD switch in FD position. Check that *****01 is displayed as binary word value on tester.
- (f) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(30)(c) for armed word #27 on tester. Check that *****00 is displayed as binary word value.
- (g) Pull ALT switch located on flight guidance control panel to out position. Check that *****11 is displayed as binary word value on DSDU tester.
- (h) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(30)(c) for pitch word #59 on DSDU tester. Check that *****0 is displayed as binary word value.
- (i) Press and release IAS switch located on flight guidance control panel. Check that *****1 is displayed as binary word value on DSDU tester.

WJE 406

- (j) Rotate thumbwheel switches to select subframe # determined in Paragraph 3.B.(30)(c) for armed word #13 on DSDU tester. Check that *****1* is displayed as binary word value.

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- (k) Rotate thumbwheel switches on DSDU tester to select subframe determined in Paragraph 3.B.(30)(c) for armed word #13. Check that *****1* is displayed as binary word value.
- (l) Rotate ALT switch clockwise to detent. Check that *****0* is displayed as binary word value on DSDU tester.

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- (m) Press and release ALT HOLD switch, located on flight guidance control panel.

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- (n) Press and release ALT HOLD pushbutton located on flight guidance control panel.

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- (o) Rotate thumbwheel switches, select subframe # determined in Paragraph 3.B.(30)(c) for pitch word #11 on DSDU tester. Check that *****0* is displayed as binary word value.

WJE 406

- (p) Press and release ALT HOLD switch and rotate vertical speed wheel located on flight guidance control panel out of detent in ANU direction. Check that *****1* is displayed as binary word value on DSDU tester.

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- (q) Press ALT HOLD pushbutton and rotate vertical speed wheel located on flight guidance control panel out of detent in ANU direction. Check that *****1* is displayed as binary word value on DSDU tester.

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- (r) Rotate thumbwheel switches, select subframe #1 word #41 on DSDU tester. Check that *****0 is displayed as binary word value.
- (s) Place autopilot select switch, located on flight guidance control panel, in position 1.
- (t) Place AP ON switch in ON position. Check that *****1 is displayed as binary word value.

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- (u) Rotate thumbwheel switches, select subframe #2 word #30 on DSDU tester. Check that *****1 is displayed as binary word value on DSDU tester.

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- (v) Rotate thumbwheel switches, select subframe #1 word #59 on DSDU tester. Check that *****1* is displayed as binary word value on DSDU tester.

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- (w) Place autopilot select switch in position 2. Check that *****0 is displayed as binary word value on DSDU tester.

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- (x) Place autopilot select switch in position 2. Check that *****0* is displayed as binary word value on DSDU tester.

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- (y) Rotate YAW DAMP switch located on overhead panel to OVRD position.
- (z) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester. Check that *****0 is displayed as binary word value on DSDU tester.
- (aa) Rotate YAW DAMP switch to ON position. Check that *****1* is displayed as binary word value on DSDU tester.
- (ab) Rotate YAW DAMP switch to OFF position.

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- (ac) Rotate thumbwheel switches, select subframe #1 word #51 on DSDU tester. Check that *****00 is displayed as binary word value.
 - (ad) Push captain's control wheel primary trim switch forward. Check that *****01. is displayed as binary word value.
 - (ae) Release captain's primary trim switch, then pull first officer's primary trim switch aft.
 - (af) Check that *****10 is displayed as binary word value.
 - (ag) Release first officer's primary trim switch.
 - (ah) Rotate thumbwheel switches, select subframe #1 word #11 on DSDU tester. Check that *****1 is displayed as binary word value.
 - (ai) Push alternate trim switch, on pedestal, to NOSE DN position. Check that *****0 is displayed as binary word value.
 - (aj) Release alternate trim switch.
- (31) Test GMT
- (a) Rotate thumbwheel switches, select subframe #1 word #37 on DSDU tester.
 - (b) Turn GMT selector on first officer's clock to HLD then switch to fast slew to set hours to 16.
 - (c) Turn GMT selector to slow slew to set minutes to 49.
 - (d) Rotate thumbwheel switches, select subframe #1 word #37 on DSDU tester. Check that **0001**0110 is displayed as binary word value on DSDU tester.

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- (32) Test Windshear Warning

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WJE 406 (Continued)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	35	B1-26	STALL WARNING AND AUTO SLAT-2

UPPER EPC, POWER - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	10	B10-436	WINDSHEAR COMPUTER

- (b) Remove Windshear Computer located in aft left radio rack, shelf 1.
 (c) Install ground to pin 101 on connector J1A of windshear computer connector tray.
 (d) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****0 is displayed as binary word value.
 (e) Remove ground from J1A pin 101. Check that *****1 is displayed as binary word value.
 (f) Install Windshear Computer into its connector tray.
 (g) Remove tags and close circuit breakers opened in (Paragraph 3.B.(32)(a)).

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- (33) Test Glideslope Warning/Terrain Warning

NOTE: Ground proximity warning (GPWS) computer is not installed for this test. Jumper wire is used between pins of aircraft wire harness connector.

- (a) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (b) Rotate thumbwheel switches, select subframe #1 word #63 on DSDU tester. Check that *****1* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (c) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (d) Install jumper wire between pins B-33 and B-5 on GPWS computer wire harness connector.

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- (e) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (f) Check that *****0* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (g) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (h) Remove jumper wire from pins B-33 and B-5.
 (i) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (j) Rotate thumbwheel switches, select subframe #1 word #8 on DSDU tester. Check that *****1* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (k) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (l) Install jumper wire between pins B-11 and B-5 on GPWS computer wire harness connector.
 (m) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (n) Check that *****0* is displayed as binary word value on DSDU tester.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (o) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

- (p) Remove jumper wire from pins B-11 and B-5.

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- (q) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	20	B10-303	GROUND PROXIMITY WARNING LIGHTS

WJE 401-404

- (34) Test Engine Vibration

- (a) Check that ENG VIB PICKUP switch is in FWD position.
- (b) Rotate thumbwheel switches, select subframe #1 word #62 on DSDU tester.
- (c) Press and hold vibration monitor test switch on first officer's instrument panel. Check that octal word value is between 4631 and 7777 on DSDU tester.
- (d) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Repeat Paragraph 3.B.(34)(c) and check that octal display is same as shown in following table:

Table 530

Subframe Number	Word Number	Octal Display
#2	#62	5145 to 7462
#4	#62	4631 to 7777

- (e) Rotate thumbwheel switches, select subframe #1 word #61 on DSDU tester.
- (f) Place vibration area selector switch, on first officer's instrument panel, in AFT position. Check that *****1* is displayed as binary word value on DSDU tester.
- (g) Place vibration area selector switch, on first officer's instrument panel in FWD position. Check that *****0* is displayed as binary word value on DSDU tester.

WJE 401-404, 873, 874

- (35) Test Brake Pressure Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 29-00-00/201)
- (b) Fully depress left brake pedal and hold.
- (c) Rotate thumbwheel switches, select subframe #1 word #28 on display unit. Check that octal word value is between 4314 and 5146 on DSDU tester.
- (d) Release left brake pedal. Check that octal word value is between 0000 and 0167 on DSDU tester.
- (e) Fully depress right brake pedal and hold.
- (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

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Table 531

Subframe Number	Word Number	Octal Display
#1	#35	4314 to 5146
#3	#35	4314 to 5146

- (g) Release right brake pedal. Check that octal word value is between 0000 and 0167 on DSDU tester.

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- (36) Test Brake Pedal Position Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (PAGEBLOCK 29-00-00/201)
 (b) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 532

Subframe Number	Word Number	Octal Display
#1	#46	2716 to 3425
#3	#46	2716 to 3425

NOTE: If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 3162). Retighten the front band on potentiometer.

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- (c) Fully depress left brake pedal and hold. Check that 4533 to 5243 is displayed in octal word value section.

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- (d) Fully depress left brake pedal and hold. Check that octal word value is between 4533 and 5243 on DSDU tester.

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- (e) Release left brake pedal.
 (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 533

Subframe Number	Word Number	Octal Display
#2	#46	5444 to 6153
#4	#46	5444 to 6153

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Table 533 (Continued)

Subframe Number	Word Number	Octal Display
<p>NOTE: If octal value does not fall within required value, loosen front band on potentiometer and adjust potentiometer to required octal value (centered on octal 5710). Retighten the front band on potentiometer.</p>		

WJE 406

- (g) Fully depress right brake pedal and hold. Check that 3682 to 4335 is displayed on octal word value section.

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- (h) Fully depress right brake pedal and hold. Check that octal word value is between 3682 and 4335 on DSDU tester.

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- (i) Release right brake pedal.
- (37) Test Stick Pusher
 - (a) Rotate thumbwheel switches, select subframe #1 word #31 on DSDU tester. Check that *****1 is displayed as binary word value on DSDU tester.
 - (b) Rotate STALL TEST switch, on forward overhead switch panel, to SYS 1 position. Check that *****0 is displayed as binary word value on DSDU tester.
 - (c) Return STALL TEST switch to OFF position.

WJE 401-404, 406

- (38) Test Windshear Warning

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	35	B1-26	STALL WARNING AND AUTO SLAT-2

UPPER EPC, POWER - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 406			
L	10	B10-436	WINDSHEAR COMPUTER

WJE 401-404, 406

- (b) Remove Windshear Computer located in aft left radio rack, shelf 1.
- (c) Install ground to pin 101 on connector J1A of windshear computer connector tray.
- (d) Rotate thumbwheel switches, select subframe #1 word #15 on DSDU tester. Check that *****0 is displayed as binary word value.
- (e) Remove ground from J1A pin 101. Check that *****1 is displayed as binary word value.
- (f) Install Windshear Computer into its connector tray.

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- (g) Remove the safety tags and close these circuit breakers:

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	35	B1-26	STALL WARNING AND AUTO SLAT-2

UPPER EPC, POWER - RIGHT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 406			
L	10	B10-436	WINDSHEAR COMPUTER

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- (39) Test HF Communication Keying

WJE 401-404

NOTE: This test is to be performed in conjunction with maintenance procedures in HIGH FREQUENCY SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 23-10-00/201.

WJE 401-404, 874

- (a) Install microphone in MIC jack on HF transceiver-1 or use the cockpit microphone.
 (b) Rotate frequency selector, located on transceivers, to unused frequency.

WJE 874

- (c) Rotate thumbwheel switches and select subframe #1 word #47 on DSDU tester. Check that *****00 is displayed as binary word value on DSDU tester.
 (d) Press and hold press-to-talk button on microphone. Check that *****01 is displayed as binary word value on DSDU tester.
 (e) Release press-to-talk button, remove microphone from transceiver-1 and install on HF transceiver-2.
 (f) Press and hold press-to-talk button on microphone and check that *****10 is displayed as binary word value on DSDU tester.
 (g) Release press-to-talk button, remove microphone from transceiver-2.

WJE 401-404

- (h) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****0 is displayed as binary word value.
 (i) Press and hold press-to-talk button on microphone. Check that *****1 is displayed as binary word value.
 (j) Release press-to-talk button, remove microphone from transceiver-1.

WJE 406

- (40) Test Angle of Attack
 (a) Rotate thumbwheel switches, select subframe #1 word #12 on DSDU tester.
 (b) Move left angle of attack vane to its maximum stop in trailing edge up (TEU) position. Check that octal display on the DSDU tester is between 7243 and 7345.
 (41) Test GMT
 (a) Rotate thumbwheel switches, select subframe #1 word #37 on DSDU tester.

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- (b) Turn GMT selector on first officer's clock to HOLD then switch to fast slew to set hours to 16.
 - (c) Turn GMT selector to slow slew to set minutes to 49.
 - (d) Turn selector to run. Check that **0100**1001 is displayed as binary value on DSDU tester.
 - (e) Rotate thumbwheel switches, select subframe #3 word #37 on DSDU tester. Check that **0001**0110 is displayed as binary value on DSDU tester.
- (42) Test Power Lever Angle
- (a) Place left engine throttle to flight idle position.
 - (b) Rotate thumbwheel switches, select subframe #1 word #14 on DSDU tester. Check that octal display on DSDU tester is between 5120 and 5160.
NOTE: If value does not fall within required values, and wiring is correct, loosen front band on potentiometer. Adjust body of potentiometer to required octal value (centered on octal 5140). Tighten front band.
 - (c) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 534

Subframe Number	Word Number	Octal Display
#2	#14	5120 to 5160
#3	#14	5120 to 5160
#4	#14	5120 to 5160

- (d) Place left engine throttle to full forward position. Check that octal display on DSDU tester is between 6143 and 6327.
- (e) Return left engine throttle to flight idle position.
- (f) Place right engine to flight idle position.
- (g) Rotate thumbwheel switches, select subframe #1 word #16 on DSDU tester. Check that octal display on DSDU tester is between 5120 and 5160.
NOTE: If value does not fall within required values, and wiring is correct, loosen front band on potentiometer. Adjust body of potentiometer to required octal value (centered on octal 5140). Tighten front band.
- (h) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 535

Subframe Number	Word Number	Octal Display
#2	#16	5120 to 5160
#3	#16	5120 to 5160
#4	#16	5120 to 5160

- (i) Place right engine throttle to full forward position. Check that octal display on tester is between 6143 and 6327.
- (j) Return right engine throttle to flight idle position.

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- (43) Test Engine Bleed Status
- (a) Place following switches located on forward overhead switch panel, in position as indicated.

Table 536

AP ON	1
ICE PROTECT ENG L anti-ice	OFF
ICE PROTECT ENG R anti-ice	OFF
ICE PROTECT AIR FOIL L SYS	OFF
ICE PROTECT AIR FOIL R SYS	OFF
Left AIR CONDITIONING SUPPLY	OFF

- (b) Rotate thumbwheel switches and select subframe #1 word #11 on DSDU tester. Check that *****1 is displayed as binary word value.
- (c) Place ICE PROTECT ENG L anti-ice switch in ON position. Check that *****0 is displayed as binary word value.
- (d) Place ICE PROTECT ENG L anti-ice switch in OFF position.
- (e) Rotate thumbwheel switches and select subframe #1 word #22 on DSDU tester. Check that *****1 is displayed as binary word value.
- (f) Place ICE PROTECT ENG R anti-ice switch in ON position. Check that *****0 is displayed as binary word value.
- (g) Place ICE PROTECT ENG R anti-ice switch in OFF position.
- (h) Rotate thumbwheel switches and select subframe #1 word #15 on DSDU tester. Check that *****0* is displayed as binary word value.
- (i) Place ICE PROTECT AIR FOIL L SYS switch in ON position. Check that *****1* is displayed as binary word value.
- (j) Rotate thumbwheel switches and select subframe #1 word #47 on DSDU tester. Check that *****0* is displayed as binary word value.
- (k) Place ICE PROTECT AIR FOIL R SYS switch in ON position. Check that *****1* is displayed as binary word value.
- (l) Place both ICE PROTECT AIR FOIL switches in OFF position.
- (m) Rotate thumbwheel switches and select subframe #1 word #51 on DSDU tester. Check that *****1 is displayed as binary word value.
- (n) Place AIR CONDITIONING SUPPLY left to AUTO position. Check that *****0 is displayed as binary word value.
- (o) Rotate thumbwheel switches and select subframe #1 word #61 on DSDU tester. Check that *****1* is displayed as binary word value.
- (p) Place AIR CONDITIONING SUPPLY left switch in HP BLD OFF position. Check that *****1* is displayed as binary word value.
- (q) Return AIR CONDITIONING SUPPLY left switch to OFF position. Check that *****0* is displayed as binary word value.
- (44) Test Engine Oil Pressure

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- (a) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 537

Subframe Number	Word Number	Octal Display
#1	#36	6261 to 6343
#2	#36	6261 to 6343

- (45) Test Engine Fuel Heat

- (a) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as in following table.

Table 538

Subframe Number	Word Number	Octal Display
#1	#63	*****1
#1	#59	*****1*

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Open this circuit breaker and install safety tag:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	36	B1-49	LEFT FUEL HEAT ON ADVISORY

- (c) Install jumper pin between terminal A1 of relay R2-128 to ground.

- (d) Remove the safety tag and close this circuit breaker:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	36	B1-49	LEFT FUEL HEAT ON ADVISORY

- (e) Check that *****0* is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (f) Open this circuit breaker and install safety tag:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	36	B1-49	LEFT FUEL HEAT ON ADVISORY

- (g) Remove jumper from R2-128.

- (h) Remove the safety tag and close this circuit breaker:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	36	B1-49	LEFT FUEL HEAT ON ADVISORY

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (i) Open this circuit breaker and install safety tag:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	36	B1-50	RIGHT FUEL HEAT ON ADVISORY

- (j) Install jumper pin between terminal A1 of relay R2-129 to ground.
 (k) Remove the safety tag and close this circuit breaker:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	36	B1-50	RIGHT FUEL HEAT ON ADVISORY

- (l) Rotate thumbwheel switches, select subframe #1 word #63 on DSDU tester. Check that *****0 is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (m) Open this circuit breaker and install safety tag:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	36	B1-50	RIGHT FUEL HEAT ON ADVISORY

- (n) Remove jumper from R2-129.
 (o) Remove the safety tag and close this circuit breaker:

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	36	B1-50	RIGHT FUEL HEAT ON ADVISORY

- (46) Test Engine Start Valve

- (a) Check that ENG START L and R control switches are in OFF position.
 (b) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as in following table.

Table 539

Subframe Number	Word Number	Octal Display
#1	#45	*****1
#1	#43	*****1*

- (c) Place ENG START L control switch in ON position. Check that *****0* is displayed as binary word value.
 (d) Place ENG START R control switch in ON position.
 (e) Rotate thumbwheel switches, select subframe #1 word #45 on DSDU tester. Check that *****0 is displayed as binary word value.

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- (f) Place ENG START L and R control switches in OFF position.
- (47) Test Auto Reserve Thrust
 - (a) Rotate thumbwheel switches, select subframe #2 word #4 on DSDU tester. Check that *****1 is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (b) Open this circuit breaker and install safety tag:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	32	B1-824	ART STATUS LIGHTS

- (c) Install jumper pin 6 on mod block S30-114 to ground.
- (d) Remove the safety tag and close this circuit breaker:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	32	B1-824	ART STATUS LIGHTS

Check that *****0 is displayed as binary word value.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (e) Open this circuit breaker and install safety tag:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	32	B1-824	ART STATUS LIGHTS

Remove jumper installed in pin 6 on mod block S30-114.

- (f) Remove the safety tag and close this circuit breaker:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	32	B1-824	ART STATUS LIGHTS

- (48) Test Performance Maintenance Recorder (PMR)
 - (a) Place FLT RCDR switch in GND TEST position.
 - (b) Check that PMR light on FDEP and FLAG light on PMR are on.

NOTE: Either the FIRST TRACK or TAPE LOW lights may be on or off during this test.
 - (c) Place tape direction selector switch on PMR front panel toward reel holding more tape, for five (5) seconds or more. Check that tape belt moves in direction of switch, FLAG light goes off after three (3) seconds.
 - (d) Release tape direction selector switch. Check that tape belt stops and FLAG light comes on.

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- (e) Place tape direction selector switch on PMR front panel toward reel holding less tape, for five (5) seconds or more. Check that tape belt moves in direction of switch, FLAG light goes off after three (3) seconds.
 - (f) Release tape direction selector switch. Check that tape belt stops and FLAG light comes on.
 - (g) Close PMR access door. Check that FLAG light on PMR and PMR light on FDEP go off.
 - (h) Place FLT RCDR switch in NORM position.
- (49) Test Master Warning

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

- (b) Remove Master Warning and Caution Controller from tray. (MASTER WARNING AND CAUTION SYSTEM (MWACS) CONTROLLER - MAINTENANCE PRACTICES, PAGEBLOCK 33-12-02/201)
- (c) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

- (d) Install a ground on J5B pin 43 on Master Warning and Caution Controller tray connector.
- (e) Rotate thumbwheel switches, select subframe #1 word #47 on DSDU tester. Check that *****0 is displayed as binary word value.
- (f) Remove the ground on J5B pin 43 on Master Warning and Caution Controller tray connector. Check that *****1 is displayed as binary word value.
- (g) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

- (h) Install Master Warning and Caution Controller. (MASTER WARNING AND CAUTION SYSTEM (MWACS) CONTROLLER - MAINTENANCE PRACTICES, PAGEBLOCK 33-12-02/201)
- (i) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING

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LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	42	B1-227	MASTER CAUTION

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (50) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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F	14	B10-328	DIGITAL AIDS RECORDER & MCU

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F	21	B10-45	FLIGHT RECORDER
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UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

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- (51) Remove DSDU tester harness from ATE connector on front of DFDR and stow harness.

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- (52) Remove DSDU tester harness from interconnecting cable and remove interconnecting cable from playback connector near DFDR and stow harnesses properly.

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- (53) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

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UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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F	14	B10-328	DIGITAL AIDS RECORDER & MCU
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F	21	B10-45	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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C	14	B10-331	FLIGHT RECORDER
---	----	---------	-----------------

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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G	21	B10-46	FLIGHT RECORDER
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UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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B	7	B10-329	FLIGHT RECORDER
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FLIGHT RECORDER - ADJUSTMENT/TEST

1. General

- A. The digital flight data recorder system consists of a digital flight data recorder (DFDR), an accelerometer, a digital flight data acquisition unit (DFDAU), and quick access recorder (QAR).
- B. The following procedures consist of an operational check and a system test. These tests provide a check of the recording system including most of the input parameters. The systems or sensors that provide these parameters must be operational and will provide all the required signals for the recording system except the acceleration signals. Parameters monitored by the recording system are processed and recorded on the DFDR and QAR.
- C. When performing any of the following system tests, check that all BITE indicators are black, reset if necessary.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

Table 501

Name and Number	Manufacturer
Simulator, ILS (TIC-30A)	Tel-Instruments
Test Adapter, CADC Remote (5963440-1)	Douglas Aircraft Co.
Test Set, DME Ramp (T-24A or T-24B)	Tel-Instruments
Test Set, Radio Altimeter (980N-1)	Collins

3. Adjustment/Test

- A. Operational Check
 - (1) Set parking brake.
 - (2) Place FLT RCDR switch, located on aft overhead panel, in GND TEST then in NORM positions. Check that FLT RECORDER OFF message goes off when switch is in GND TEST and comes on when switch is returned to NORM.
NOTE: Aircraft must be in ground mode for this check.
 - (3) Release parking brake.
 - (4) Open and then close LEFT GROUND CONTROL RELAY circuit breaker, located on upper EPC circuit breaker panel. Check that FLT RECORDER OFF message goes off when circuit breaker is open and comes on when circuit breaker is closed.
 - (5) Move left fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF message goes off when lever is moved to ON and comes on when lever is moved to OFF.
 - (6) Move right fuel shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF message goes off when lever is moved to ON and comes on when lever is moved to OFF.
 - (7) Reset parking brake.
 - (8) Place FLT RCDR switch in GND TEST position.

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- B. Multipurpose Control Display Unit (MCDU) Setup (Figure 501)
- (1) Press Menu key on MCDU-2 located on right forward pedestal. Check that MCDU MENU page is displayed.
 - (2) Press 3L key next to <DFAU prompt on MCDU-2. Check that DFDAU MENU page is displayed.
 - (3) Press Menu key on MCDU-2. Check that MCDU MENU page is displayed.
 - (4) Press MENU key on MCDU-1 located on left forward pedestal. Check that MCDU MENU page is displayed.
 - (5) Press 3L key next to <DFDAU prompt on MCDU-1. Check that DFDAU MENU page is displayed.
 - (6) Press 2L key next to <TEST on MCDU-1. Check that WARNING is displayed.
 - (7) Press 6R key next to <YES on MCDU-1. Check that PASSWORD ENTRY is displayed.
 - (8) Enter MDCT into scratchpad and press 3L key. Check that password is accepted.
 - (9) Press 3L key next to <DFDAU. Check that MAIN MENU page is displayed.
 - (10) Press 2L key next to <QAR. Check that QAR INTERFACE TEST page is displayed.
 - (11) Press 1L key next to <QAR BUFFER. Check that QAR BUFFER TEST page is displayed.
- C. DFDAU Synchronization Check
- (1) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (2) Enter 1 into MCDU-1 scratchpad and press 1L key. Check that word value is 001.
 - (3) Check that S1 is 1107.
 - (4) Check that S2 is 2670.
 - (5) Check that S3 is 5107.
 - (6) Check that S4 is 6670.
- D. System Test

NOTE: After each of following tests, restore system under test to normal or off position as required.

- (1) Test Overhead Annunciator Panel Lighting

NOTE: It may be necessary to scroll the Overhead Annunciator Panel screens in order to verify the presence or absence of a message. Messages can take up to 10 seconds to register.

- (a) Open and then close FLIGHT RECORDER circuit breaker (115 VAC), located on upper EPC circuit breaker panel. Check that DFDAU MALFUNCTION message comes on when breaker is opened and goes off when breaker is closed.
- (b) Open and then close FLIGHT RECORDER circuit breaker (28 VDC), located on upper EPC circuit breaker panel. Check that DFDAU MALFUNCTION message comes on when breaker is opened and goes off when breaker is closed.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (c) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

- (d) Remove DFDR from its connector.
- (e) Remove tags and close circuit breakers opened in (Paragraph 3.D.(1)(c)). Check that DFDR MALFUNCTION message comes on.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (f) Open and tag circuit breakers opened in (Paragraph 3.D.(1)(c)).
 - (g) Replace DFDR to its connector.
 - (h) Remove tags and close circuit breakers opened in (Paragraph 3.D.(1)(c)). Check that DFDR MALFUNCTION message goes off.
- (2) Test Accelerometer
- (a) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (b) Enter 4 into scratchpad and press 1L key. Check that word value is 004.
 - (c) Check that S1 reads between 3441 and 3717, inclusive.
 - (d) Press 4R key next to FORW>. Check that word value is 005.
 - (e) Check that S1 reads between 3760 and 4264, inclusive.
 - (f) Press 4R key next to FORW>. Check that word value is 006.
 - (g) Check that S1 reads between 3760 and 4264, inclusive.
- (3) Test Radio Altimeters
- (a) Connect radio altimeter test set to Radio Altimeter -1 R/T located in mid cargo compartment.
 - (b) Set TEST SELECT switch on test set to AUX/IND ALTITUDE.
 - (c) Adjust ALTITUDE knob on test set to set radio altitude display on Captain's Primary Flight Display (PFD), located on captain's instrument panel, to 0(±5) feet.
 - (d) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (e) Enter 26 into scratchpad and press the 1L key. Check that word value is 026.
 - (f) Check that S1 reads between 0046 and 0100, inclusive.
 - (g) Adjust ALTITUDE knob on test set to set radio altitude display on Captain's PFD to 2500(±20) feet.
 - (h) Check that S1 OCT value on MCDU-1 reads between 6414 and 6440, inclusive.
 - (i) Disconnect radio altimeter test set from No. 1 R/T and connect it to No. 2 R/T.
 - (j) Adjust ALTITUDE knob on test set to set radio altitude display on first officer's Primary Flight Display (PFD), located on first officer's instrument panel, to 0(±5) feet.
 - (k) Check that S2 reads between 0046 and 0100, inclusive.
 - (l) Adjust ALTITUDE knob on test set to set radio altitude display on first officer's PFD to 2500(±20) feet.
 - (m) Check that S2 reads between 6414 and 6440, inclusive.
 - (n) Disconnect radio altimeter test set from No. 2 R/T.

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- (4) Test Traffic Alert Collision Avoidance System (TCAS)
 - (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) At TCAS/ATC control panel, located on aft pedestal, set function selector switch to STBY position and TA DSPLY switch to ON position.
 - (c) Enter 57 into scratchpad and press 1L key. Check that word value is 057.
 - (d) Check that S1 is *****000*.
 - (e) Momentarily press, then release, TCAS TEST button located on TCAS/ATC panel.
 - (f) Check that S1 is *****100* for 4-8 seconds.
- (5) Test Brake Pedal Position
 - (a) Release parking brake.
 - (b) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (c) Enter 11 into scratchpad and press 1L key. Check that word value is 011.
 - (d) Place captain's left brake pedal in neutral position.
 - (e) Check that S1 reads between 3056 and 3564, inclusive.
 - (f) Push captain's left brake pedal to full travel position and hold.
 - (g) Check that S1 reads between 4674 and 5402, inclusive.
 - (h) Return captain's left brake pedal to neutral position.
 - (i) Enter 59 into scratchpad and press 1L key. Check that word value is 059.
 - (j) Place captain's right brake pedal in neutral position.
 - (k) Check that S1 reads between 3056 and 3564, inclusive.
 - (l) Push captain's right brake pedal to full travel position and hold.
 - (m) Check that S1 reads between 4674 and 5402, inclusive.
 - (n) Return captain's right brake pedal to neutral position.
- (6) Test VHF Communication Keying
 - (a) Tune VHF-1 COMM, located on aft pedestal panel, to unused frequency.
 - (b) Press VHF-1 microphone selector button on captain's audio control panel, located on left console.
 - (c) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (d) Enter 8 into scratchpad and press 1L key. Check that word value is 008.
 - (e) Check that S1 is *****11.
 - (f) Press and hold Press-To-Talk switch on captain's control wheel.
 - (g) Check that S1 is *****10.
 - (h) Release Press-To-Talk switch on captain's control wheel.
 - (i) Tune VHF-2 COMM, located on aft pedestal panel, to unused frequency.
 - (j) Press VHF-2 microphone selector button on captain's audio control panel, located on left console.
 - (k) Press and hold Press-To-Talk switch on captain's control wheel.
 - (l) Check that S1 is *****01.
 - (m) Release Press-To-Talk switch on captain's control wheel.
 - (n) Enter 19 into scratchpad and press 1L key. Check that word value is 019.

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- (o) Check that S1 is *****1.
 - (p) Tune VHF-3 COMM control panel, located on aft pedestal, to unused frequency.
 - (q) Press and hold Press-To-Talk switch on captain's control wheel.
 - (r) Check that S1 is *****0.
 - (s) Release Press-To-Talk switch on captain's control wheel.
- (7) Test Instrument Landing System (ILS)
- (a) Locate TIC-30 test set in a convenient location which will provide reliable signals to aircraft VOR/LOC antennas, located on vertical stabilizer, and glideslope antenna, located on radome.
 - (b) Tune TIC signal generator frequency and VHF NAV-1 and NAV-2 on cockpit glareshield control panel to 108.10 MHz (VOR).
 - (c) Set Course select knobs on both VHF NAV panels so that course select bars on Navigation Displays (ND) point to heading index at top of indicator.
 - (d) Adjust TIC-30 test set to move captain's and F/O's course deviation bar right one dot and captain's and F/O's glideslope pointer up one dot.
 - (e) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (f) Enter 33 into scratchpad and press 1L key. Check that word value is 033.
 - (g) Check that S1 reads between 4502 and 4675, inclusive.
 - (h) Check that S2 reads between 4502 and 4675, inclusive.
 - (i) Enter 34 into scratchpad and press 1L key. Check that word value is 034.
 - (j) Check that S1 reads between 3127 and 3250, inclusive.
 - (k) Check that S2 reads between 3127 and 3250, inclusive.
- (8) Test Windshear Warning
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 43 into scratchpad and press 1L key. Check that word value is 043.
 - (c) Check that S1 is *****1.
 - (d) Momentarily place WINDSHR TEST switch, on overhead panel, to TEST position.
 - (e) Check that last digit of BINARY value changes from 1 to 0, then changes back to 1.
- (9) Test Flight/Ground Sensing
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 19 into scratchpad and press 1L key. Check that word value is 019.
 - (c) Check that S1 is *****1**.
 - (d) Open LEFT GROUND CONTROL RELAY circuit breaker, located on upper EPC circuit breaker panel.
 - (e) Check that S1 is *****0**.
 - (f) Close LEFT GROUND CONTROL RELAY circuit breaker.
- (10) Test Ground Proximity Warnings
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 63 into scratchpad and press 1L key. Check that word value is 063.
 - (c) Check that S1 is *****11.
 - (d) Press and hold GND PROX WARN switch, on overhead switch panel, in TEST position.

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- (e) Check that S1 is *****01.
 - (f) Check that 2-4 seconds after pressing switch, S1 is *****00.
 - (g) Release GND PROX WARN switch.
 - (h) Check that S1 is *****11.
- (11) Test Landing Gear
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 15 into scratchpad and press 1L key. Check that word value is 015.
 - (c) Check that S1 is *****1 and S2 is *****0.
 - (d) Use aluminum shim to cover landing gear down proximity sensor in right main gear wheelwell.
 - (e) Check that S1 is *****0 and S2 is *****0.
 - (f) Use steel shim to cover landing gear up proximity sensor in right main gear wheelwell.
 - (g) Check that S1 is *****0 and S2 is *****1.
 - (h) Remove shims installed in (Paragraph 3.D.(11)(d)) and (Paragraph 3.D.(11)(f)).
- (12) Test Flight Management System (FMS)
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 17 into scratchpad and press 1L key. Check that word value is 017.
 - (c) Place autopilot select switch to 1.
 - (d) Check that S1 is *****0***.
 - (e) Place autopilot select switch to 2.
 - (f) Check that S1 is *****1***.
 - (g) Place autopilot select switch to 1.
- (13) Test Distance Measuring Equipment (DME)
- (a) Place test set in any convenient location within 50 feet of aircraft.
NOTE: This test utilizes the DME ramp test set to simulate a ground station.
 - (b) Open test set cover, connect pendant antenna cable to RF jack, and turn so that self-contained antenna is visible from aircraft DME antenna.
 - (c) Press test set POWER switch. Battery check meter should indicate in white portion of scale. If not, recharge batteries or operate unit from 115 VAC line.
 - (d) Set test set controls as follows:

Table 502

Distance - nmi	004.0 nmi	
EFF	100%	
Function	Distance	OUT
Normal	On	IN
Echo	Off	OUT
Squitter	2700	OUT
Frequency	108.1 (Both)	IN
Meter	150	DOWN

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(e) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(f) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

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D	21	B10-419	FLIGHT MANAGEMENT SYSTEM-1 AFMC
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UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	9	B10-420	FLIGHT MANAGEMENT SYSTEM-2 AFMC
---	---	---------	---------------------------------

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- (g) Place MODE switch on mode select panel at captain's and F/O's stations to ROSE mode.
- (h) Allow DME interrogator to warm up for at least one minute.
 - (i) Tune captain's and F/O's NAV panels, on glareshield, to 108.10 MHz.
 - (j) Check that distance on captain's and F/O's NAV displays is 4.0 (±0.2) miles
 - (k) Enter 49 into MCDU-1 scratchpad and press 1L key. Check that word value is 049.
 - (l) Check that S2 is 0403 and S4 is 0403.
- (m) Enter 50 into MCDU-1 scratchpad and press 1L key. Check that word value is 050.
- (n) Check that S2 reads between 0036 and 0042, inclusive.
- (o) Check that S4 reads between 0036 and 0042, inclusive.
- (p) Enter 57 into MCDU-1 scratchpad and press 1L key. Check that word value is 057.
- (q) Press 3R key until BIN appears.
- (r) Check that S2 is 01001***** and S4 is 01001*****.
- (s) Change following settings on DME test set:

Table 503

Distance - nmi	105 miles
Frequency	108.00 MHz

- (t) Tune captain's and F/O's NAV panels, on glareshield, to 108.00 MHz.
- (u) Check that distance on captain's and F/O's NAV panels is 105.0 miles.
- (v) Check that S2 is 00001***** and S4 is 00001*****.
- (w) Enter 50 into MCDU-1 scratchpad and press 1L key. Check that word value is 050.
- (x) Press 3R key until OCT appears.
- (y) Check that S2 reads between 1506 and 1512.
- (z) Check that S4 reads between 1506 and 1512.
- (aa) Enter 49 into MCDU-1 scratchpad and press 1L key. Check that word value is 049.
- (ab) Check that S2 is 0401 and S4 is 0401.
- (ac) Turn off power to DME test set and disconnect antenna cable.

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- (ad) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 875, 876, 878, 879

D	21	B10-419	FLIGHT MANAGEMENT SYSTEM-1 AFMC
---	----	---------	---------------------------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	9	B10-420	FLIGHT MANAGEMENT SYSTEM-2 AFMC
---	---	---------	---------------------------------

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- (14) Test Throttle Lever Angle

- (a) Place throttles in idle position.
- (b) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
- (c) Enter 16 into MCDU-1 scratchpad and press 1L key. Check that word value is 016.
- (d) Check that S1 reads between 5120 and 5160, inclusive.

NOTE: If value does not fall within required values, and wiring is correct, loosen front band on potentiometer. Adjust body of potentiometer to require octal value (center on octal 5140). Tighten front band.

- (e) Enter 48 into MCDU-1 scratchpad and press 1L key. Check that word value is 048.
- (f) Check that S1 reads between 5120 and 5160, inclusive.

NOTE: If value does not fall within required values, and wiring is correct, loosen front band on potentiometer. Adjust body of potentiometer to require octal value (center on octal 5140). Tighten front band.

- (g) Push throttles to full forward position.
- (h) Check that S1 reads between 6143 and 6327, inclusive.
- (i) Enter 16 into MCDU-1 scratchpad and press 1L key. Check that word value is 016.
- (j) Check that S1 reads between 6143 and 6327, inclusive.
- (k) Return throttles to idle position.

- (15) Test Inertial Reference System (IRS)

- (a) Press MAG/TRUE switch on captain's instrument panel to MAG. Check that "MAG" lights come on, on captain's and F/O's MAG/TRUE switches.

- (b) Press MENU key on MCDU-2. Check that MENU page is displayed in scratchpad.

NOTE: If IRS INIT/REF is displayed to right of 5L key, then go to (Paragraph 3.D.(15)(h)).

- (c) Press NEXT PAGE key on MCDU-2. Check that MENU page is displayed in scratchpad.
- (d) Type "DAC" into scratchpad and press 6R key. Check that DAC is entered.
- (e) Press 2L key to activate IRS option. Check that ACTIVATED is flashing.
- (f) Press 3L key to select dual IRS. Check that 2 is flashing.
- (g) Press 6L key to return to MENU page. Check that MENU page is displayed in scratchpad.
- (h) Press 5L key to select IRS INIT/REF page. Check that IRS INIT/REF page is displayed in scratchpad.

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- (i) Place EFIS select switch, located on overhead switch panel, to NORM.
 - (j) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (k) Move IRS-1 switch, on IRS MODE SELECT unit on overhead panel, to ATT.
 - (l) Check that "SET IRS HDG" is displayed to left of 6R key after 15-25 seconds.
 - (m) Enter 9 into MCDU-1 scratchpad and press 1L key. Check that word value is 009.
 - (n) Enter 090 into MCDU-2 scratchpad and press 6R key. Check that 090 is entered.
 - (o) Check that S1 is between 1750 and 2027, inclusive.
 - (p) Move IRS-1 switch, on IRS MODE SELECT unit on overhead panel, to OFF.
 - (q) Place EFIS select switch, located on overhead switch panel, to BOTH ON 2.
 - (r) Repeat (Paragraph 3.D.(15)(k)) through (Paragraph 3.D.(15)(p)) for IRS-2.
 - (s) Place EFIS select switch to NORM.
- (16) Test Electronic Clock - GMT
- (a) Turn GMT selector on F/O's clock to fast slew (FS) and set hours to 16.
 - (b) Turn GMT selector to slow slew (SS) and set minutes to 49.
 - (c) Turn GMT selector to HOLD.
 - (d) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (e) Enter 57 into scratchpad and press 1L key. Check that word value is 057.
 - (f) Check that S3 is 10000*****.
 - (g) Enter 50 into scratchpad and press 1L key. Check that word value is 050.
 - (h) Check that S3 is 110001*****.
 - (i) Turn GMT selector to RUN.
- (17) Test Central Air Data Computer Select Switch
- (a) Set CADC select switch, located on overhead panel, to NORM position.
 - (b) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (c) Enter 23 into scratchpad and press 1L key. Check that word value is 023.
 - (d) Check that S1 is *****00.
 - (e) Set CADC select switch to BOTH ON 1.
 - (f) Check that S1 is *****01.
 - (g) Set CADC select switch to BOTH ON 2.
 - (h) Check that S1 is *****10.
 - (i) Set CADC select switch, located on overhead panel, to NORM position.
- (18) Test Central Air Data Computer (CADC)
- (a) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (b) Place CADC select switch, located on overhead panel, to NORM.
 - (c) Connect CADC remote test adapter to test connector on front of CADC-1, located in radio rack.
 - (d) Turn CADC self test #1 switch to ON and self test #2 and #3 switches to OFF.
 - (e) Enter 10 into scratchpad and press 1L key. Check that word value is 010.
 - (f) Check that S1 is between 6320 and 6560, inclusive.

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- (g) Enter 58 into scratchpad and press 1L key. Check that word value is 058.
 - (h) Check that S1 is between 1526 and 1627, inclusive.
 - (i) Turn CADC self test #1 switch to OFF. Disconnect CADC remote test adapter from CADC-1 and connect to CADC-2. Turn CADC self test #1 switch to ON.
 - (j) Place CADC select switch to BOTH ON 2.
 - (k) Repeat (Paragraph 3.D.(18)(e)) through (Paragraph 3.D.(18)(h)) for CADC-2.
 - (l) Place CADC select switch to NORM.
 - (m) Disconnect CADC remote test adapter from CADC-2.
- (19) Test Engine Display Panel (EDP)
- (a) Press engine display panel test button, located on center instrument panel.
NOTE: This button is the unmarked, recessed button on the lower part of the bezel.
 - (b) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (c) Enter 8 into scratchpad and press 1L key. Check that word value is 008.
 - (d) Check that S1 reads between 20** and 43**, inclusive.
 - (e) Enter 40 into scratchpad and press 1L key. Check that word value is 040.
 - (f) Check that S1 reads between 20** and 43**, inclusive.
NOTE: * means not applicable (ignore).
 - (g) Release test button.
- (20) Test Systems Display Panel (SDP)
- (a) Press systems display panel test button, located on center instrument panel.
NOTE: This button is the unmarked, recessed button on the lower part of the bezel.
 - (b) If format next to 3R key on MCDU-1 is not OCT, press 3R key until OCT appears.
 - (c) Enter 19 into scratchpad and press 1L key. Check that word value is 019.
 - (d) Check that S1 is 70**.
NOTE: * means not applicable (ignore).
 - (e) Check that S2 is 70**.
 - (f) Release test button.
- (21) Test Brake Pressure Input

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND THAT CONTROL SURFACES ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (a) Pressurize hydraulic system. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 29-00-00/201)
- (b) Fully depress left brake pedal and hold.
- (c) Rotate thumbwheel switches, select subframe #1 word #2 on display unit. Check that octal word value is between 4314 and 5146 on DSDU tester.
- (d) Release left brake pedal. Check that octal word value is between 0000 and 0167 on DSDU tester.
- (e) Fully depress right brake pedal and hold.

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- (f) Rotate thumbwheel switches, select following subframe and word numbers on DSDU tester. Check that octal display is same as shown in following table:

Table 504

Subframe Number	Word Number	Octal Display
#1	#45	4314 to 5146
#3	#45	4314 to 5146

- (g) Release right brake pedal. Check that octal word value is between 0000 and 0167 on DSDU tester.
- (22) Test Event Marker
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 9 into scratchpad and press 1L key. Check that word value is 009.
 - (c) Check that S1 is *****1.
 - (d) Press and hold event marker button, located on overhead switch panel.
 - (e) Check that S1 is *****0.
 - (f) Release event marker button.
- (23) Test Thrust Reversers
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Enter 3 into scratchpad and press 1L key. Check that word value is 003.
 - (c) Check that S1 is *****11.
 - (d) Open and tag ENGINE REVERSER UNLOCK ADVISORY circuit breaker, located on lower EPC circuit breaker panel (ENGINE - LEFT DC BUS).
 - (e) Check that S1 is *****01.
 - (f) Open and tag ENGINE REVERSER THRUST ADVISORY circuit breaker, located on lower EPC circuit breaker panel (ENGINE - LEFT DC BUS).
 - (g) Check that S1 is *****00.
 - (h) Enter 35 into scratchpad and press 1L key. Check that word value is 035.
 - (i) Check that S1 is *****11.
 - (j) Open and tag ENGINE REVERSER UNLOCK ADVISORY circuit breaker, located on lower EPC circuit breaker panel (ENGINE - RIGHT DC BUS).
 - (k) Check that S1 is *****01.
 - (l) Open and tag ENGINE REVERSER THRUST ADVISORY circuit breaker, located on lower EPC circuit breaker panel (ENGINE - RIGHT DC BUS).
 - (m) Check that S1 is *****00.
 - (n) Remove tags and close circuit breakers opened in (Paragraph 3.D.(23)(d)), (Paragraph 3.D.(23)(f)), (Paragraph 3.D.(23)(j)) and (Paragraph 3.D.(23)(l)).
- (24) Test Master Warning
- (a) If format next to 3R key on MCDU-1 is not BIN, press 3R key until BIN appears.
 - (b) Press captain's master warning light to clear any previous warnings. Check that captain's warning light is off.
 - (c) Enter 7 into scratchpad and press 1L key. Check that word value is 007.

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- (d) Check that S1 is *****1*.
- (e) Open and tag EMERGENCY DC BUS SENSING circuit breaker, located on lower EPC circuit breaker panel (R DC POWER).
- (f) Check that S1 is *****0*.
- (g) Remove tag and close EMERGENCY DC BUS SENSING circuit breaker, located on lower EPC circuit breaker panel (R DC POWER).

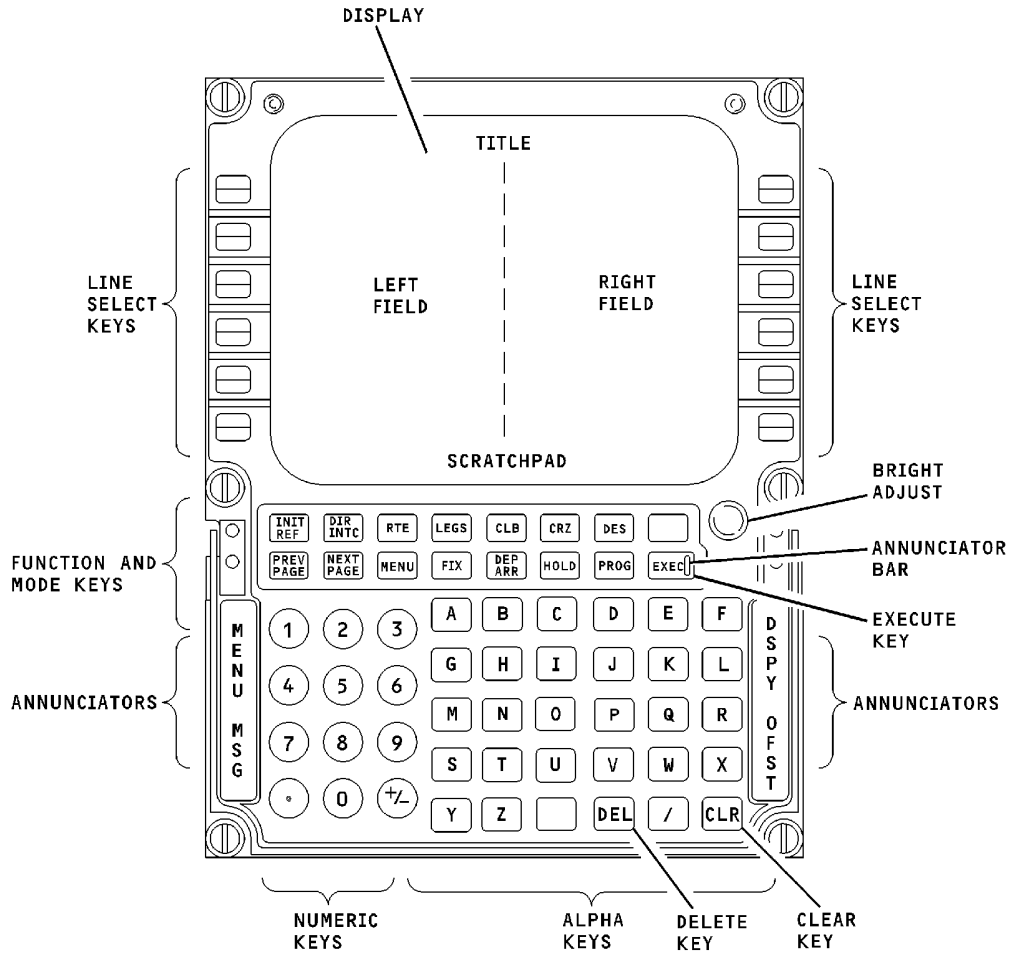
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CAG(IGDS)

BBB2-31-1740

**Multipurpose Control Display Unit (MCDU)
Figure 501/31-31-00-990-890**

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WJE **SOLID-STATE DIGITAL FLIGHT RECORDER SYSTEM - ADJUSTMENT/TEST**

WJE **1. General**

- WJE A. The Digital Flight Data Recorder System consists of a Digital Flight Data Recorder (DFDR), an
WJE Accelerometer and a Flight Data Acquisition Unit (FDAU).
- WJE B. The following procedures consist of an operational check and a system test. These tests provide a
WJE complete test of the entire recording system including all the input parameters. The systems or
WJE sensors that provide these parameters must be operational and will provide all the required signals
WJE for the recording system except the acceleration signals. Every parameter monitored by the
WJE recording system is processed and recorded on the DFDR.
- WJE C. When performing any of the following system tests, the Data Signal Display Unit (DSDU) tester must
WJE be installed. Check that all BITE indicators are black, reset if necessary.

WJE **2. Equipment and Materials**

WJE NOTE: Equivalent substitutes may be used in the place of the following items.

Name and Number	Manufacturer
Portable Analysis Unit (PAU), (17-TES0010), T-812	L3
Simulator, Attitude (AS-80)	J.C. Air
VG Simulator (34-MUL-1089), T-786	Midwest Airlines
IRU Simulator Jumper Cable, T-1028	Midwest Airlines
ILS Simulator (TIC-30A), T-794	Tel-Instrument
Test Adapter, CADC Remote (5963440-1)	Douglas Aircraft Co.
Test Set, Radio Altimeter (ARA-552), T-798	Atlantis
Digital Protractor	

WJE **3. Adjustment/Test**

- WJE A. Operational Check
- WJE (1) Set parking brake.
- WJE (2) Place FLT RCDR switch, located on aft overhead panel, in GND TEST, then in NORM
WJE positions. Check that FLT RECORDER OFF annunciator light goes off when switch is in GND
WJE TEST and comes on when switch is returned to NORM.
- WJE NOTE: On aircraft with Electronic Overhead Annunciator Panel (EOAP), it may be necessary
WJE to use slew arrows to scroll to the FLT RECORDER OFF message.
- WJE NOTE: Aircraft must be in ground mode for this check.
- WJE (3) Release parking brake.

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WJE **WARNING:** NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED
WJE WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF
WJE GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE
WJE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF
WJE AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT
WJE OPERATION OF EQUIPMENT.

- (4) Open and close this circuit breaker:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

- (5) Check that FLT RECORDER OFF annunciator light goes off when circuit breaker is open and comes on when circuit breaker is closed.
- (6) Move left Fuel Shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (7) Move right Fuel Shutoff lever to ON then to OFF positions. Check that FLT RECORDER OFF annunciator light goes off when lever is moved to ON and comes on when lever is moved to OFF.
- (8) Reset parking brake.

WJE **WARNING:** NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED
WJE WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. IF
WJE GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE OPENED WHILE
WJE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES AND CONTROLS OF
WJE AFFECTED SYSTEMS ARE IN CORRECT POSITION TO PREVENT INADVERTENT
WJE OPERATION OF EQUIPMENT.

WJE **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE
WJE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO
WJE PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (9) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

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WJE

UPPER EPC, RIGHT RADIO BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

B	7	B10-329	FLIGHT RECORDER
---	---	---------	-----------------

WJE

- (10) Connect L3 Portable Analysis Unit (PAU) P/N 17-TES0010 to the front panel test connector of the flight data recorder.

WJE

WJE

NOTE: Engineering unit values are shown for each parameter with their corresponding raw data values in parentheses (in octal notation, unless otherwise noted). Either the engineering unit or raw data values may be used, depending on available PAU report formulas.

WJE

WJE

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WJE

- (11) Remove the safety tags and close these circuit breakers:

WJE

UPPER EPC, L AC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE

UPPER EPC, LEFT RADIO AC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

F	21	B10-45	FLIGHT RECORDER
---	----	--------	-----------------

WJE

UPPER EPC, LEFT RADIO BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

C	14	B10-331	FLIGHT RECORDER
---	----	---------	-----------------

WJE

UPPER EPC, LEFT RADIO DC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

G	21	B10-46	FLIGHT RECORDER
---	----	--------	-----------------

WJE

UPPER EPC, RIGHT RADIO BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE

B	7	B10-329	FLIGHT RECORDER
---	---	---------	-----------------

WJE

- (12) Place FLT RCDR switch in GND TEST position. Check that FLT RECORDER OFF annunciator light goes off.

WJE

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WJE B. System Test

WJE NOTE: Unless otherwise noted, the Flight Recorder NORM/GND TEST switch on the Aft Overhead
WJE Switch Panel must be in the GND TEST position when performing the tests outlined below.

WJE NOTE: After each of the following tests, restore system under test to normal or off position as
WJE required.

WJE NOTE: When testing the flight recorder, subframe 0 refers to any of the 4 subframes.

WJE NOTE: The test procedures are based on the L3 PAU laptop computer test set. Alternate test sets
WJE may be used. Reference the appropriate test set operator instructions for initial set-up
WJE procedures in lieu of the procedures listed here. The listed octal test values in the remainder
WJE of the test procedure are valid regardless of test set used.

WJE NOTE: When performing all sensor tests, use a 10 second duration for sensor movement. For
WJE example, to measure from 0 degrees to 15 degrees, take 10 seconds to move sensor from 0
WJE degrees to 15 degrees. This will ensure smooth operation of the sensors and provide a
WJE gradual readout on the computer.

WJE NOTE: Values and information listed in parenthesis are for reference only.

WJE (1) Connect L3 Portable Analysis Unit (PAU) P/N 17-TES0010 to the front panel test connector of
WJE the flight data recorder.

WJE (2) Turn on the PAU and allow it to fully boot up.

WJE (a) While viewing the Command Menu screen, select "Select Aircraft Configuration".

WJE (b) Select the MIDWEST EXPRESS MD88 configuration on the "Select Aircraft
WJE Configuration" menu.

WJE (c) Select "Monitor Flight Data" from the "Command Menu" screen.

WJE (d) Select the appropriate report to display from the "Select Report to be Displayed" screen.
WJE Appropriate report will be identified in the work steps.

WJE (e) Follow the instructions on the screen and test the FDR sensors.

WJE (3) Test Sync Word.

WJE (a) Use a 10 second duration for each movement when performing all sensor tests.

WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.

WJE (b) On the PAU, Report 1, observe readout of column with header "1". This column is the
WJE parameter that reports the SYNC WORDS, and is visible on each of the reports. Verify
WJE the value displayed on the PAU cycles between the following values at a one second
WJE rate:

WJE • 1107 (SUBFRAME 1)

WJE • 2670 (SUBFRAME 2)

WJE • 5107 (SUBFRAME 3)

WJE • 6670 (SUBFRAME 4).

WJE NOTE: Accelerometer readings will be affected by aircraft attitude. If correct readings
WJE cannot be obtained, ensure accelerometer is level in direction of sensitive axis.
WJE Also ensure proper positioning is obtained when rotating unit.

WJE (4) Test Acceleration.

WJE (a) In the main wheelwell, loosen the tri-axial accelerometer.

WJE (b) Vertical Acceleration (WORD 2).

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- WJE 1) On the PAU, Report 1, observe VERT ACC1 through VERT ACC8 readouts.
- WJE 2) Verify the value displayed on the PAU is 1g(±0.09g) (between 3515 and 3634, nominal 3565).
- WJE 3) Rotate the accelerometer so that it is inverted. Verify the value displayed on the PAU is -1g(±0.09g) (between 1744 and 2063, nominal 2013).
- WJE 4) Rotate the accelerometer so that the right side is facing up. Verify the value displayed on the PAU is 0g(±0.09g) (between 2630 to 2747, nominal 2700).
- WJE 5) Return the accelerometer to its normal position.
- WJE (c) Lateral Acceleration (WORD 15).
- WJE 1) On the PAU, Report 2, observe LAT ACC1 through LAT ACC4 readouts.
- WJE 2) Verify the value displayed on the PAU is 0g(±0.03g) (between 4024 and 4217, nominal 4120).
- WJE 3) Rotate the accelerometer so that the right side is facing up. Verify that the value displayed on the PAU is +1g(±0.03g) (between 7704 and 7777, nominal 7777).
- WJE 4) Rotate the accelerometer so that the left side is facing up. Verify the value displayed on the PAU is -1g(±0.03g) (between 0225 and 0337, nominal 0240).
- WJE 5) Return the accelerometer to its normal position.
- WJE (d) Longitudinal Acceleration (WORD 13).
- WJE 1) On the PAU, Report 2, observe LONG ACC1 through LONG ACC4 readouts.
- WJE 2) Verify the value displayed on the PAU is 0g(±0.03g) (between 4024 and 4217, nominal 4120).
- WJE 3) Rotate the accelerometer so that the forward side is facing up. Verify the value displayed on the PAU is +1g(±0.03g) (between 7704 and 7777, nominal 7777).
- WJE 4) Rotate the accelerometer so that the aft side is facing up. Verify the value displayed on the PAU is -1g(±0.03g) (between 0225 and 0337, nominal 0240).
- WJE 5) Return the accelerometer to its normal position.
- WJE (e) Re-secure the tri-axial accelerometer to mount.
- WJE (5) Test Attitude (WORD 17 - Roll; WORD 51 - Pitch).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (a) Open these circuit breakers and install safety tags:

AFT RIGHT RADIO RACK, BATTERY UNIT

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		NA	IRU-2 BATTERY

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	1	B10-438	IRU-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	B10-362	DIGITAL FLIGHT GUIDANCE SYSTEM-2

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WJE

UPPER EPC, RIGHT RADIO DC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	4	B10-444	IRS-2 ANN
G	12	B10-444	MACH TRIM-2

WJE

WJE

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(b) Remove the IRU-2 unit located on forward accessory compartment shelf.

WJE

(c) Connect VG simulator to IRU-2 connector. Verify PITCH and ROLL settings on attitude simulator are set to 0°.

WJE

(d) Remove the safety tags and close these circuit breakers:

WJE

WJE
WJE

AFT RIGHT RADIO RACK, BATTERY UNIT

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		NA	IRU-2 BATTERY

WJE

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UPPER EPC, RIGHT RADIO AC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	1	B10-438	IRU-2

WJE

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UPPER EPC, RIGHT RADIO BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	B10-362	DIGITAL FLIGHT GUIDANCE SYSTEM-2

WJE

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UPPER EPC, RIGHT RADIO DC BUS

WJE

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	4	B10-444	IRS-2 ANN
G	12	B10-444	MACH TRIM-2

WJE

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WJE

NOTE: PFD, ND and RDMI will not display valid information.

WJE

(e) Place simulator POWER switch to ON position and VALIDITY switch in VALID position. Check that First Officer's PFD indicates 0°(±2°) pitch and 0°(±2°) roll.

WJE

(f) On the PAU, Report 3, observe PITCH ATT readout. Verify that the value displayed on the PAU is 0°(±2°) (7754 to 0020, nominal 0000).

WJE

(g) On the PAU, Report 3, observe ROLL ATT readout. Verify that the value displayed on the PAU is 0°(±2°) (7754 to 0020, nominal 0000).

WJE

(h) Rotate PITCH knob on attitude simulator to 30° pitch UP.

WJE

(i) On the PAU, Report 3, observe PITCH ATT readout. Verify that the value displayed on the PAU is 30°(±2°) (0420 to 0474, nominal 0447).

WJE

WJE

(j) Return PITCH knob to 0°.

WJE

(k) Rotate ROLL knob on attitude simulator to 30° roll RIGHT.

WJE

(l) On the PAU, Report 3, observe ROLL ATT readout. Verify that the value displayed on the PAU is 30°(±2°) (0420 to 0474, nominal 0444).

WJE

WJE

(m) Return ROLL knob to 0°.

WJE

WJE

(6) Test Heading Input (WORD 3).

WJE

(a) Turn heading simulator ON and select a heading of 60°.

WJE

NOTE: Use AMM 34-63-00, page 30 Section E as a guideline to perform the test below if simulator is not available.

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- WJE (b) On the PAU, select Report 3. Verify the value displayed on the PAU is between 1300 and
WJE 1354, nominal 1330 (60°(±2°)).
- WJE (c) Rotate HEADING knob to a heading of 240°. Verify the value displayed on the PAU is
WJE between 5300 and 5354, nominal 5330 (240°(±2°)).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE
WJE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY
WJE TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- WJE (d) Open these circuit breakers and install safety tags:

AFT RIGHT RADIO RACK, BATTERY UNIT

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		NA	IRU-2 BATTERY

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	1	B10-438	IRU-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	B10-362	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	4	B10-444	IRS-2 ANN
G	12	B10-444	MACH TRIM-2

- WJE (e) Remove attitude simulator from IRS-2 connector.
- WJE (f) Reinstall IRU-2 unit.
- WJE (g) Remove the safety tags and close these circuit breakers:

AFT RIGHT RADIO RACK, BATTERY UNIT

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		NA	IRU-2 BATTERY

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	1	B10-438	IRU-2

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	B10-362	DIGITAL FLIGHT GUIDANCE SYSTEM-2

UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	4	B10-444	IRS-2 ANN
G	12	B10-444	MACH TRIM-2

- WJE (7) Test Aileron Surface Position Input (WORD 8 and 40).

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WJE (a) Use a 10 second duration for sensor movement when performing all sensor tests.

WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.

WJE **WARNING**: BEFORE YOU MOVE THE AILERONS AND AILERON CONTROL TABS, MAKE
WJE SURE THE AREAS AROUND THE LEFT AND RIGHT AILERONS ARE CLEAR
WJE OF ALL PERSONS AND EQUIPMENT. THIS WILL HELP PREVENT INJURIES
WJE TO PERSONS AND DAMAGE TO EQUIPMENT.

WJE (b) To conduct this test, move ailerons manually.

WJE (c) Move and hold the left aileron to full down travel.

WJE (d) On the PAU, Report 3, observe AIL POS1 and AIL POS2 readouts. Verify that the value
WJE displayed on the PAU is as shown in the following table:

PARAMETER	DISPLAY	(OCTAL)
AIL POS1	15°(±2°)	(0340 to 0460, nominal 0404)
AIL POS2	15°(±2°)	(0343 to 0463, nominal 0404)

WJE (e) Return the left aileron to neutral position. Verify the value displayed on the PAU is as
WJE shown in the following table:

PARAMETER	DISPLAY	(OCTAL)
AIL POS1	0°(±2°)	(7734 to 0030, nominal 0000)
AIL POS2	0°(±2°)	(7734 to 0036, nominal 0000)

WJE (f) Move and hold left aileron to full up travel. Verify the value displayed on the PAU is as
WJE shown in the following table:

PARAMETER	DISPLAY	(OCTAL)
AIL POS1	-14.5°(±2°)	(7314 to 7434, nominal 7373)
AIL POS2	-14.5°(±2°)	(7313 to 7435, nominal 7370)

WJE (8) Test Elevator Surface Position Input (WORD 32 - Left; WORD 64 - Right).

WJE (a) Use a 10 second duration for each movement when performing all sensor test.

WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.

WJE (b) To conduct this test, move elevators manually.

WJE (c) Horizontal stabilizer must be set to 0°.

WJE (d) Using a digital protractor, move the left elevator trailing edge to 10° DOWN.

WJE (e) On the PAU, Report 3, observe ELV POS L readout. Verify the value displayed on the
WJE PAU is 10°(±2°) (0204 to 0313, nominal 0246).

WJE (f) Move left elevator to neutral (in alignment with rig mark on horizontal stabilizer). Verify the
WJE value displayed on the PAU is 0°(±2°) (between 7740 and 0041, nominal 0000).

WJE (g) Move left elevator to 10°, trailing edge UP. Verify the value displayed on the PAU is
WJE -10°(±2°) (between 7466 and 7575, nominal 7531).

WJE (h) Using a digital protractor, move right elevator trailing edge to 10° DOWN.

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- WJE (i) On the PAU, Report 3, observe ELV POS R readout. Verify the value displayed on the
WJE PAU is 10°(±2°) (0204 to 0313, nominal 0246).
- WJE (j) Move right elevator to neutral (in alignment with rig mark on horizontal stabilizer). Verify
WJE the value displayed on the PAU is 0°(±2°) (between 7740 and 0041, nominal 0000).
- WJE (k) Move right elevator to 10°, trailing edge UP. Verify the value displayed on the PAU is
WJE -10°(±2°) (between 7466 and 7575, nominal 7531).
- WJE (9) Test Rudder Surface Position Input (WORD 27 & 59).
- WJE (a) Use a 10 second duration for each movement when performing all sensor tests.
WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.
- WJE (b) To conduct this test, move rudder manually.
- WJE (c) Ensure rudder trim control, located on pedestal, is in NOSE 0° position.
- WJE (d) On the PAU, Report 3, observe RDR POS1 and RDR POS2. Verify that the value
WJE displayed on the PAU is between 0000-0726 and 7656-7777.
- WJE (e) Move rudder to full right deflection and hold (Rudder trailing edge right). Verify that the
WJE value displayed on the PAU is between 6260-6577.
- WJE (f) Move rudder to full left deflection and hold (Rudder trailing edge left). Verify that the value
WJE displayed on the PAU is between 1014-1203.
- WJE (10) Test Spoiler Surface Position Input (WORD 20 - Right; WORD 48 - Left).
- WJE (a) Use a 10 second duration for each movement when performing all sensor tests.
WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.
- WJE **WARNING**: BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT
WJE LANDING GEAR GROUND LOCKPINS ARE INSTALLED AND THAT
WJE APPLICABLE CONTROLS ARE IN CORRECT POSITION TO PREVENT
WJE INADVERTENT OPERATION OF LANDING GEAR AND FLIGHT CONTROL
WJE SYSTEMS.
- WJE (b) Pressurize hydraulic system. (GENERAL - MAINTENANCE PRACTICES,
WJE PAGEBLOCK 29-00-00/201)
- WJE (c) Move the spoiler control handle to ground spoiler position.
- WJE (d) Make sure that the spoiler displays follow the speedbrake handle motion.
WJE NOTE: Ground Spoiler position of the Speedbrake handle represents full-scale deflection
WJE of the spoiler displays.
- WJE (e) On the PAU, Report 4, observe SPLR LH readout. Determine the actual LH outboard
WJE spoiler position and check that the LH spoiler value displayed on the PAU is as shown in
WJE the following table:

ACTUAL SPOILER POSITION	DISPLAY	(OCTAL)
56°	56°(±2°)	(6414 to 6500, nominal 6457)
57°	57°(±2°)	(6400 to 6462, nominal 6431)
58°	58°(±2°)	(6364 to 6446, nominal 6405)
59°	59°(±2°)	(6350 to 6431, nominal 6391)

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WJE	ACTUAL SPOILER POSITION	DISPLAY	(OCTAL)
WJE	60°	60°(±2°)	(6335 to 6414, nominal 6375)
WJE	61°	61°(±2°)	(6321 to 6400, nominal 6361)
WJE	62°	62°(±2°)	(6306 to 6364, nominal 6335)
WJE	63°	63°(±2°)	(6273 to 6350, nominal 6312)
WJE	64°	64°(±2°)	(6260 to 6335, nominal 6306)

- (f) On the PAU, Report 4, observe SPLR RH readout. Determine the actual RH inboard spoiler position and check that the RH spoiler readout on the PAU is as shown in the following table:

WJE WJE	ACTUAL SPOILER POSITION	DISPLAY	(OCTAL)
WJE WJE	56°	56°(±2°)	(6500 to 6564, nominal 6531)
WJE	57°	57°(±2°)	(6463 to 6546, nominal 6514)
WJE	58°	58°(±2°)	(6447 to 6531, nominal 6500)
WJE	59°	59°(±2°)	(6433 to 6514, nominal 6463)
WJE	60°	60°(±2°)	(6420 to 6500, nominal 6447)
WJE	61°	61°(±2°)	(6405 to 6463, nominal 6433)
WJE	62°	62°(±2°)	(6371 to 6447, nominal 6420)
WJE	63°	63°(±2°)	(6356 to 6433, nominal 6405)
WJE	64°	64°(±2°)	(6344 to 6420, nominal 6371)

- (g) Move speed brake control handle to RET position. Check that spoiler displays return to retracted position. Verify the value displayed on the PAU, Report 4, for the SPLR LH and SPLR RH parameter is 0°(±2°) (7756 to 0021, nominal 0000).

WJE (11) Test Horizontal Stabilizer Position Input (WORD 12).

- (a) Use a 10 second duration for each movement when performing all sensor tests.

WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will ensure smooth operation of sensors and provide a gradual readout on the computer screen.

- (b) Move horizontal stabilizer to 0°.

- (c) Make sure that the horizontal stabilizer indicator is at 0°.

- (d) On the PAU, Report 4, observe HOR STAB readout. Verify that the value displayed on the PAU is 0°(±0.42°) (7760 to 0016, nominal 0000).

- (e) Move horizontal stabilizer to mechanical nose UP stop. Check that the horizontal stabilizer indicator reads 12° Nose UP. Verify that the value displayed on the PAU is -12°(±0.42°) (between 6701 and 6772, nominal 6735).

- (f) Reset horizontal stabilizer to 0° while observing trim motor duty cycle limits of HORIZONTAL STABILIZER - ADJUSTMENT/TEST, PAGEBLOCK 27-40-00/501.

WJE (12) Test Flap Position Input (WORD 39).

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WJE **WARNING:** BEFORE PRESSURIZING HYDRAULIC SYSTEM, MAKE CERTAIN THAT
WJE LANDING GEAR GROUND LOCKPINS ARE INSTALLED AND THAT
WJE APPLICABLE CONTROLS ARE IN CORRECT POSITION TO PREVENT
WJE INADVERTENT OPERATION OF LANDING GEAR AND FLIGHT CONTROL
WJE SYSTEMS.

WJE (a) Pressurize hydraulic system. (GENERAL - MAINTENANCE PRACTICES,
WJE PAGEBLOCK 29-00-00/201)

WJE **WARNING:** WHEN THE AIRCRAFT IS ON THE GROUND, WITH WEIGHT ON WHEELS,
WJE THE BITE TEST OF THE AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH
WJE TIME THE FLAP/SLAT HANDLE IS MOVED FROM THE RET DETENT TO 0°/
WJE T.O. EXT OR 11°/T.O. EXT DETENTS. THE SLATS WILL AUTOMATICALLY
WJE EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND
WJE POSITION.

WJE (b) Place FLAP/SLAT handle on pedestal in RET (UP) position.

WJE (c) On the PAU, Report 4, observe FLAP POS readout. Verify that the value displayed on the
WJE PAU is 0°(±3°) (7745 to 0032, nominal 0000).

WJE (d) Place the FLAP/SLAT handle to 40°. Verify the value displayed on the PAU is 40°(±3°)
WJE (0601 to 0735, nominal 0655).

WJE (13) Test Control Column Position Sensor input (WORD 24; WORD 56).

WJE **NOTE:** When moving the Control Column from neutral to full forward and full aft during
WJE recording, move the control column in a smooth, controlled motion. The computer
WJE needs to record a smooth transition from neutral to forward and aft positions.

WJE (a) Use a 10 second duration for each movement when performing all sensor tests.

WJE **NOTE:** Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.

WJE (b) Install rig pin (6-5) in rig pin hole (R-1) in lower end of left control column.

WJE (c) On the PAU, Report 4, observe CNTRL COL1 and CONTRL COL2 readouts.

WJE (d) Verify with the rig pin (6-5) installed in rig pin hole (R-1), the value displayed on the PAU
WJE is 0°(±2°) (7726 to 0046, nominal 0000).

WJE (e) Remove the rig pin.

WJE (f) Move the control column fully FORWARD. Verify the value displayed on the PAU is
WJE 13.5°(±2°) (0333 to 0447, nominal 0401).

WJE (g) Move the control column fully AFT. Verify the value displayed on the PAU is -20.25°(±2°)
WJE (7172 to 7365, nominal 7274).

WJE (14) Adjust/Test Rudder Pedal Position Sensor (WORD 11; WORD 43).

WJE (a) Use a 10 second duration for each movement when performing all sensor tests.

WJE **NOTE:** Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.

WJE (b) Using the rudder trim control knob, set the rudder system trim to 0°.

WJE (c) Install rig pin (6-4) in rig pin hole (R-11), located in the rudder drive sector.

WJE (d) On the PAU, Report 4, observe RDR PDL1 and RDR PDL2 readouts.

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- WJE (e) Verify, with rig pin (6-4) installed in rig pin hole (R-11), the value displayed on the PAU is
WJE $0^{\circ}(\pm 2^{\circ})$ (7752 to 0027, nominal 0000).
- WJE (f) Using a digital protractor placed vertically against the lower aft side of the rudder pedal
WJE torque tube crank (located on Captain's side), reference the position of the crank with the
WJE rig pin installed as 0° .
- WJE (g) Remove the rig pin.
- WJE (h) Move the right rudder pedal forward to obtain 15° on the digital protractor. Verify the value
WJE displayed on the PAU is $15^{\circ}(\pm 2^{\circ})$ (0222 to 0325, nominal 0263).
- WJE (i) Move the left rudder pedal forward to obtain 15° on the digital protractor. Verify the value
WJE displayed on the PAU is $-15^{\circ}(\pm 2^{\circ})$ (7527 to 7577, nominal 7553).
- WJE (15) Test Control Wheel Position Sensor Input (WORD 25; WORD 57).
- WJE (a) Use a 10 second duration for each movement when performing all sensor tests.
WJE NOTE: Using ten second durations for each movement (ex: zero to 15 degrees) will
WJE ensure smooth operation of sensors and provide a gradual readout on the
WJE computer screen.
- WJE (b) Install rig pin (4-4) in rig pin hole (R-3) in the aileron bus torque tube.
- WJE (c) On the PAU, Report 4, observe CNTRL WHL1 and CNTRL WHL2 readouts.
- WJE (d) Verify, with rig pin (4-4) installed in the rig pin hole (R-3), the value displayed on the PAU
WJE is $0^{\circ}(\pm 2^{\circ})$ (7763 to 0016, nominal 0000).
- WJE (e) Install a digital protractor on the First Officer's control wheel, using a straight edge
WJE clamped to the wheel (or similar method). With the rig pin installed, reference the position
WJE of the wheel as 0° .
- WJE (f) Remove the rig pin (4-4).
- WJE (g) Rotate the control wheel clockwise to obtain 90° on the digital protractor. Verify the value
WJE displayed on the PAU is $90^{\circ}(\pm 2^{\circ})$ (1523 to 1564, nominal 1544).
- WJE (h) Rotate the control wheel counterclockwise to obtain 90° on the digital protractor. Verify
WJE the value displayed on the PAU is $-90^{\circ}(\pm 2^{\circ})$ (6266 to 6325, nominal 6304).
- WJE (16) Test Air Data Parameters Inputs (WORD 5 - Fine Alt; WORD 19 - Air Spd; WORD 21 -
WJE MACH/MAX A/S; WORD 23 - Coarse Alt; WORD 55 - TAT).
- WJE (a) Connect P2 of CADC remote test adapter to test connector on CADC-2 or operate
WJE controls on face of CADC-2 in the E&E bay.
- WJE (b) Place CADC-2 MODE SELECT switch to FUNCTION TEST on CADC remote test
WJE adapter in ON position and all other switches in OFF position.
- WJE (c) Press and hold PUSH TO TEST button.
- WJE (d) Make sure that the First Officer's instruments display as shown on the following table:

PARAMETER	READING
Altitude	9915 ft (± 15 ft)
Airspeed	419 knots (± 3 knots)
Mach	0.746 (± 0.006)
Max Allowable Airspeed	343 knots (± 3 knots)
Total Air Temperature (if installed)	0°C ($\pm 2^{\circ}\text{C}$)

- WJE (e) On the PAU, Report 5, observe the following parameters. Check that readouts are as
WJE shown in the following table:

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PARAMETER	DISPLAY	(OCTAL)
COARS ALT	8192 ft	(0002)
FINE ALT	1723 ft (±150 ft)	(3045 to 3521, nominal 3273)
PRESS ALT	9915 ft (±150 ft)	(total of COARS ALT + FINE ALT)
AIR SPD	419 kts (±12.57 kts)	(3131 to 3276, nominal 3214)
TAT	0°C(±2°C)	(7773 to 0004, nominal 0000)
MACH A/S	0.746 Mach (±0.05 Mach)	(1272 to 1440, nominal 1352)
MAX A/S	343 kts (±3 kts)	(2520 to 2550, nominal 2534)

WJE
WJE

NOTE: Coarse Altitude of 8192 ft plus Fine Altitude of 1723 ft (±150 ft) equals test altitude of 9915 ft (±150 ft).

WJE
WJE

- (f) Release PUSH TO TEST switch and remove CADC remote test adapter from test connector on CADC-2, if used.

WJE

- (17) Test Radio Altimeter Input (WORD 44 - Coarse; WORD 62 - Fine).

WJE

NOTE: Allow Radio Altimeter systems two minutes to warm up.

WJE

- (a) Make sure that Captain's and First Officer's radio altimeter indicators read 0 ft(±5 ft).

WJE

- (b) Connect radio altimeter test set to the test connector on radio altimeter transmitter-1 located in the center cargo compartment.

WJE

WJE

- (c) On the PAU, Report 5, observe R/A LH LO readout, ignore R/A LH HI. Verify that the value displayed on the PAU is 0 ft(±2 ft) (0054 to 0066, nominal 0061).

WJE

- (d) Use test set to position radio altitude display on Captain's PFD at 2500 ft(±100 ft).

WJE

- (e) On the PAU, Report 5, observe R/A LH HI, ignore R/A LH LO. Verify the value displayed on the PAU is 2500 ft(±125 ft) (6152 to 6344, nominal 6220).

WJE

- (f) Return radio altimeter test set reading to 0 feet.

WJE

- (g) Disconnect radio altimeter test set from Radio Altimeter Transmitter -1 and connect test set to transmitter-2.

WJE

- (h) On the PAU, Report 5, observe R/A RH readout. Make sure that radio altitude display on the First Officer's PFD is at 0 ft(±5 ft). Verify that the value displayed on the PAU is 0 ft(±2 ft) (0435 to 0534, nominal 0475).

WJE

- (i) Use test set to position radio altitude display on First Officer's PFD at 200 ft(±10 ft). Verify that the value displayed on the PAU is 200 ft(±6 ft) (6477 to 6776, nominal 6637).

WJE

- (j) Return radio altimeter test set reading to 0 feet.

WJE

- (k) Disconnect radio altimeter test set from the Radio Altimeter Transmitter-2.

WJE

- (18) Test ILS Input (Glideslope and Localizer Deviation) (WORD 6 - LOC Left; WORD 22 - G/S Left; WORD 38 - G/S Right; WORD 54 - LOC Right).

WJE

- (a) Rotate course selector knobs on both VHF NAV control panels so that course select bars on the Navigation Display (ND), point to heading index at top of indicator.

WJE

- (b) Position ILS simulator in front of aircraft to align with VOR localizer antenna on vertical stabilizer.

WJE

- (c) Adjust ILS simulator to move Captain's and First Officer's course deviation bar right one dot and glideslope pointer up one dot.

WJE

- (d) On the PAU, Report 6, observe the following parameters. Verify that the values displayed on the PAU are as shown in the following table:

WJE

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WJE WJE	PARAMETER	DISPLAY	(OCTAL)
WJE	LOC DEV L	+1 dot right, ± 0.1 dot	(4527 to 4650, nominal 4600)
WJE	LOC DEV R	+1 dot right, ± 0.1 dot	(4527 to 4650, nominal 4600)
WJE	G/S DEV L	+1 dot up, ± 0.1 dot	(4527 to 4650, nominal 4600)
WJE	G/S DEV R	+1 dot up, ± 0.1 dot	(4527 to 4650, nominal 4600)

WJE (e) Adjust ILS simulator to move Captain's and First Officer's course deviation bar left one dot and glideslope pointer down one dot.

WJE (f) On the PAU, Report 6, observe the following parameters. Verify that the values displayed on the PAU are as shown in the following table:

WJE WJE	PARAMETER	DISPLAY	(OCTAL)
WJE	LOC DEV L	-1 dot left, ± 0.1 dot	(3127 to 3250, nominal 3200)
WJE	LOC DEV R	-1 dot left, ± 0.1 dot	(3127 to 3250, nominal 3200)
WJE	G/S DEV L	-1 dot down, ± 0.1 dot	(3127 to 3250, nominal 3200)
WJE	G/S DEV R	-1 dot down, ± 0.1 dot	(3127 to 3250, nominal 3200)

WJE (19) Test Slat Position Input (WORDS 17, 29, 41, 45).

WJE (a) Check that the slats are in a retracted position.

WJE (b) On the PAU, Report 6, observe the SLT RET readout. Verify that the value displayed is RET. SLT MID and SLT EXT readouts will be blank.

WJE (c) On the PAU, Report 6, observe the SLT DIS LT readout. Verify that the value displayed is AGR.

WJE NOTE: SLT DIS LT will display value DIS during slat transit.

WJE **WARNING**: WHEN AIRCRAFT IS ON GROUND, WITH WEIGHT ON WHEELS, BITE TEST OF AUTO-SLAT EXTEND SYSTEM IS ENABLED EACH TIME FLAP/SLAT HANDLE IS MOVED FROM RET DETENT TO 0°/T.O. EXT OR 11°/T.O. EXT DETENTS. SLATS WILL AUTOMATICALLY EXTEND TO FULL EXTEND POSITION THEN RETURN TO MID EXTEND POSITION.

WJE (d) Extend slats to mid position.

WJE 1) If the slats cannot be extended at the time of the test, the mid position extension may be simulated as follows:

WJE NOTE: The sensors are located on the slat drive wheel aft of the mid cargo compartment.

WJE a) Place steel shim against the left "B" and right "B" sensors.

WJE b) Place an aluminum shim against the left "A" and right "A" sensors.

WJE (e) On the PAU, Report 6, observe SLT MID readout. Verify that the value displayed is MID.

WJE NOTE: SLT RET and SLT EXT readouts will be blank.

WJE (f) On the PAU, Report 6, observe SLT DIS LT readout. Verify that the value displayed is AGR.

WJE NOTE: SLT DIS LT will display value DIS during slat transit.

WJE (g) Extend the slats to extend position.

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- WJE (h) On the PAU, Report 6, observe the SLT EXT readout. Verify that the value displayed is
WJE EXT.
WJE NOTE: SLT RET and SLT MID readouts will be blank.
- WJE (i) On the PAU, Report 6, observe the SLT DIS LT readout. Verify that the value displayed is
WJE AGR.
WJE NOTE: SLT DIS LT will display the value DIS during transit.
- WJE (j) Turn off hydraulic power.
WJE 1) If hydraulic power cannot be turned off at this time, placing a steel shim under the
WJE left "B" proximity sensor will simulate the handle/slat disagreement.
- WJE (k) Move slat handle to mid position.
- WJE (l) On the PAU, Report 6, observe SLT DIS LT readout. Verify that the value displayed is
WJE DIS.
- WJE (m) Reapply hydraulic power and retract the slats.
WJE 1) Remove shims, if used in this step.
- WJE (20) Test Thrust Reverser Position Input (WORDS 7, 8, 63).
WJE (a) On the PAU, Report 6, observe the displayed value of the following parameters:

PARAMETER	DISPLAYED VALUE
T/R DEP LH	NO
T/R LCK LH	LCK
T/R DEP RH	NO
T/R LCK RH	LCK

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- WJE (b) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

- WJE (c) Install two jumper wires from a bonded ground to terminals 9 and 10 on module block
WJE S30-202 located in aft electrical electronic compartment.
- WJE (d) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

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WJE
WJE

LOWER EPC, ENGINE - RIGHT DC BUS

WJE

Row Col Number Name

WJE

T 30 B1-74 RIGHT REVERSER UNLOCK ADVISORY

WJE

T 31 B1-453 RIGHT REVERSE THRUST ADVISORY

WJE

(e) On the PAU, Report 6, observe the displayed values of the following parameters:

WJE
WJE

PARAMETER	DISPLAYED VALUE
T/R DEP LH	DEP
T/R LCK LH	NO
T/R DEP RH	NO
T/R LCK RH	LCK

WJE

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

WJE

WJE

WJE

(f) Open these circuit breakers and install safety tags:

WJE

LOWER EPC, ENGINE - LEFT DC BUS

WJE

Row Col Number Name

WJE

S 30 B1-73 LEFT REVERSER UNLOCK ADVISORY

WJE

S 31 B1-452 LEFT REVERSE THRUST ADVISORY

WJE

LOWER EPC, ENGINE - RIGHT DC BUS

WJE

Row Col Number Name

WJE

T 30 B1-74 RIGHT REVERSER UNLOCK ADVISORY

WJE

T 31 B1-453 RIGHT REVERSE THRUST ADVISORY

WJE

(g) Remove two jumper wires from terminals 9 and 10 on module block S30-202 located in aft electrical electronic compartment.

WJE

WJE

(h) Install two jumper wires from a bonded ground to terminals 3 and 6 on module block S30-202 located in aft electrical electronic compartment.

WJE

WJE

(i) Remove the safety tags and close these circuit breakers:

WJE

LOWER EPC, ENGINE - LEFT DC BUS

WJE

Row Col Number Name

WJE

S 30 B1-73 LEFT REVERSER UNLOCK ADVISORY

WJE

S 31 B1-452 LEFT REVERSE THRUST ADVISORY

WJE

LOWER EPC, ENGINE - RIGHT DC BUS

WJE

Row Col Number Name

WJE

T 30 B1-74 RIGHT REVERSER UNLOCK ADVISORY

WJE

T 31 B1-453 RIGHT REVERSE THRUST ADVISORY

WJE

(j) On the PAU, Report 6, observe the displayed values of the following parameters.

WJE

WJE

PARAMETER	DISPLAYED VALUE
T/R DEP LH	NO
T/R LCK LH	LCK

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WJE (Continued)

WJE	PARAMETER	DISPLAYED VALUE
WJE	T/R DEP RH	DEP
WJE	T/R LCK RH	NO

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(k) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

Row	Col	Number	Name
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

Row	Col	Number	Name
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

(l) Remove two jumper wires from terminals 3 and 6 on module block S30-202 located in aft electrical electronic compartment.

(m) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

Row	Col	Number	Name
S	30	B1-73	LEFT REVERSER UNLOCK ADVISORY
S	31	B1-452	LEFT REVERSE THRUST ADVISORY

LOWER EPC, ENGINE - RIGHT DC BUS

Row	Col	Number	Name
T	30	B1-74	RIGHT REVERSER UNLOCK ADVISORY
T	31	B1-453	RIGHT REVERSE THRUST ADVISORY

(21) Test Cabin Pressure Warning (WORD 15).

(a) On the PAU, Report 7, observe CAB PRS WRN readout. Verify that the value displayed is OFF.

(b) Install jumper wire across terminals of cabin low pressure warning switch S1-216, located above the forward cabin drop ceiling panel, approximately STA 237.

(c) On the PAU, Report 7, observe the CAB PRS WRN readout. Verify that the value displayed is WRN (cabin pressure warning light ON).

(d) Remove jumper wire from cabin low pressure warning switch terminals.

(22) Test VHF Communication Keying (WORD 9).

(a) Rotate dual frequency selectors, located on pedestal, to channel all transceivers to an unused frequency.

(b) Install microphone in MIC jack on VHF transceiver-1, located on forward right radio rack.

(c) On the PAU, Report 7, observe the VHFL XMIT and VHFR XMIT readouts. Verify that the value displayed for both parameters is IDLE.

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- WJE (d) Press and hold press-to-talk button on microphone and check that the value displayed for
WJE VHFL XMIT readout is XMIT.
- WJE (e) Release press-to-talk button, remove microphone from transceiver-1 and install MIC jack
WJE on VHF transceiver-2.
- WJE (f) Press and hold press-to-talk button on microphone and check that the value displayed for
WJE VHFR XMIT readout is XMIT.
- WJE (g) Release press-to-talk button, remove microphone from transceiver-2.
- WJE (23) Test Marker Beacon (WORD 3).
- WJE (a) On the PAU, Report 7, observe the MKR BCN MM and MKR BCN OM readouts. Verify
WJE that the value displayed for both parameters is OFF.
- WJE (b) Activate outer marker on tester.
- WJE (c) On the PAU, Report 7, observe the MKR BCN OM readout. Verify that the value
WJE displayed changes to ON.
- WJE (d) Activate middle marker on tester.
- WJE (e) On the PAU, Report 7, observe the MKR BCN MM readout. Verify that the value
WJE displayed changes to ON.
- WJE (24) Test Fire Warning (WORD 31 - Right; WORD 43 - Left).
- WJE (a) On the PAU, Report 7, observe the ENG FIRE LH and ENG FIRE RH readouts. Verify
WJE that the value displayed for both parameters is OFF.
- WJE (b) Place L ENG LOOPS selector switch on aft overhead switch panel in "A" position and
WJE place R ENG LOOPS selector switch in the "B" position.
- WJE (c) Press LOOP A TEST switch located on the center instrument panel.
- WJE (d) On the PAU, Report 7, observe the ENG FIRE LH and ENG FIRE RH readouts. Verify
WJE that the value displayed for ENG FIRE LH is WARN and for ENG FIRE WARN RH is
WJE OFF.
- WJE (e) Place L ENG LOOPS selector switch on aft overhead switch panel in "B" position and
WJE place R ENG LOOPS selector switch in "A" position.
- WJE (f) Press LOOP A TEST switch located on the center instrument panel.
- WJE (g) On PAU, Report 7, observe the ENG FIRE LH and ENG FIRE RH readouts. Verify that
WJE the value displayed for the ENG FIRE LH is OFF and for the ENG FIRE WARN RH is
WJE WARN.
- WJE (h) Return R ENG and L ENG LOOPS selector switches to "BOTH" position.
- WJE (25) Test Hydraulic System Status (WORD 39).
- WJE (a) Disconnect electrical connector from left hydraulic pressure switch (S1-126) and left
WJE hydraulic temperature switch (S1-128), located on forward outboard corner of left
WJE wheelwell.
- WJE (b) On PAU, Report 7, observe HYD PRS LH and HYD TMPL WARN readouts. Verify that
WJE the value displayed for both parameters is OFF.
- WJE (c) Place an electrical ground to pin B of S1-126. Verify that the value displayed for HYD
WJE PRS LH is LOW.
- WJE (d) Move electrical ground to pin 1 of S1-128. Verify that the value displayed for HYD TMPL
WJE LH is WARN.
- WJE (e) Disconnect electrical connector from right hydraulic pressure switch (S1-127) and right
WJE hydraulic temperature switch (S1-129), located on aft inboard corner of right wheelwell.

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- WJE (f) On PAU, Report 7, observe HYD PRS RH and HYD TMPR WARN readouts. Verify that
WJE the value displayed for both parameters is OFF.
- WJE (g) Place an electrical ground to pin B of S1-127. Verify that the value displayed for HYD
WJE PRS RH is LOW.
- WJE (h) Move electrical ground to pin 1 of S1-129. Verify that the value displayed for HYD TMPL
WJE RH is WARN.
- WJE (i) Remove electrical ground and connect electrical connectors to left and right hydraulic
WJE pressure switches and temperature switches disconnected in Paragraph 3.B.(25)(a) and
WJE Paragraph 3.B.(25)(e).
- WJE (26) Test Landing Gear (WORD 4).
- WJE (a) On PAU, Report 7, observe MLG DOWN LOCK and MLG UP LOCK readouts. Verify that
WJE the value displayed for MLG DOWN LOCK is LOCK and for MLG UP LOCK is NO.
- WJE (b) Use an aluminum shim to cover right main landing gear down proximity sensor. Verify
WJE that value displayed for MLG DOWN LOCK is NO.
- WJE (c) Remove shim from landing gear down proximity sensor.
- WJE (d) Use a steel shim to cover the right main landing gear up proximity sensor. Verify that the
WJE value displayed for MLG UP LOCK is LOCK.
- WJE (e) Remove shim from landing gear up proximity sensor.
- WJE (27) Test Engine Pressure Ratio (WORD 9 - Right; WORD 41 - Left).
- WJE (a) On PAU, Report 8, observe EPR LH readout. Verify that the value displayed on the PAU
WJE is LH 1.0 EPR (± 0.034) (5140 to 5370, nominal 5260).
- WJE (b) On PAU, Report 8, observe EPR RH readout. Verify that the value displayed on the PAU
WJE is RH 1.0 EPR (± 0.034) (5140 to 5370, nominal 5260).
- WJE (28) Test Autopilot (WORDS 11, 13, 27, 28, 41, 59).
- WJE (a) Place the following switches, located on the glareshield flight guidance control panel as
WJE follows:

SWITCH	POSITION
AP ON	OFF
CAPT FD	OFF
F/O FD	OFF
ALT	5000 FEET

- WJE (b) On PAU, Report 8, observe the A/P MODE CHNL readout. It should be cycling through
WJE the values ROLL, PITCH, ARMED and A/T (Auto throttle), which are A/P Mode channels.
WJE Next to this A/P Mode channel parameter will be A/P MODE BIT5 through A/P MODE
WJE BIT1.
- WJE (c) When the subsequent steps refer to observing a bit state change for one or more of these
WJE five bits, the step will also identify which A/P mode channel will be the correct row of data
WJE bits to observe for the required bit change.
- WJE NOTE: Do not attempt to use the subframes for determining which row of bits to
WJE observe. The correlation between the A/P Mode channels and the subframe
WJE numbers will change every time the DFDR is powered down and back up again.
- WJE (d) On PAU, Report 8, observe the PITCH channel and verify that the value displayed for
WJE both A/P MODE BIT5 and A/P MODE BIT4 is "0".

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- WJE (e) Place Captain's FD switch, located on flight guidance control panel in FD position.
- WJE (f) On PAU, Report 8, observe the PITCH channel and verify that the binary word value of A/P MODE BIT4 changes to "1".
- WJE (g) On PAU, Report 8, observe the ARMED channel and verify that the binary word value of A/P MODE BIT5 and A/P MODE BIT4 is "0".
- WJE (h) Pull ALT switch, located on the flight guidance control panel, to the out position and release. Check that the binary word value of A/P MODE BIT5 and A/P MODE BIT4 changes to "1".
- WJE (i) On PAU, Report 8, observe the PITCH channel and verify that the binary word value of A/P MODE BIT3 is "0".
- WJE (j) Press and release IAS switch located on the flight guidance control panel.
- WJE (k) On PAU, Report 8, observe the PITCH channel and verify that the binary word value of A/P MODE BIT3 changes to "1".
- WJE (l) On PAU, Report 8, observe the ARMED channel and verify that the binary word value of A/P MODE BIT2 is "1".
- WJE (m) Rotate ALT switch clockwise to detent.
- WJE (n) On PAU, Report 8, observe the ARMED channel and verify that the binary word value of A/P MODE BIT2 changes to "0".
- WJE NOTE: To accomplish this test, it will be necessary to rotate knob slowly for several seconds.
- WJE (o) Press and release ALT HOLD located on the flight guidance control panel.
- WJE (p) On PAU, Report 8, observe the PITCH channel and verify that the binary word value of A/P MODE BIT1 is "0".
- WJE (q) Push ALT HOLD switch and rotate vertical speed wheel, located on flight guidance control panel, out of detent in ANU direction.
- WJE (r) On PAU, Report 8, observe the PITCH channel and verify that the binary word value of A/P MODE BIT1 changes to "1".
- WJE (s) On PAU, Report 8, observe the A/P ENG readout. Check that the value displayed is NO.
- WJE (t) Place autopilot select switch, located on the flight guidance control panel in position 1.
- WJE **WARNING**: BEFORE PERFORMING THE NEXT WORK STEP, VERIFY THAT ALL AIRCRAFT CONTROL SURFACES THAT MIGHT MOVE DUE TO AUTOPILOT ENGAGEMENT ARE CLEAR OF PERSONNEL AND EQUIPMENT.
- WJE (u) Place AP ON switch in the ON position.
- WJE (v) On PAU, Report 8, observe the A/P ENG readout. Check that the value displayed is ENG.
- WJE (w) On PAU, Report 8, observe the A/P SEL 1/2 readout. Verify that the value displayed is A/P1.
- WJE (x) Place autopilot select switch in position 2.
- WJE (y) On PAU, Report 8, observe the A/P SEL 1/2 readout. Verify that the value displayed is A/P2.
- WJE (29) Test Glideslope Warning/Terrain Warning (WORD 8 - Terrain; WORD 63 - G/S).
- WJE (a) On PAU, Report 9, observe GPWS TERR WARN and GPWS G/S WARN readouts. Verify the value displayed for both parameters is OFF.
- WJE (b) Activate GPWS Test switch in cockpit.

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WJE (c) While GPWS Test switch is activated, on PAU, Report 9, verify that the value displayed
WJE for both parameters is WARN.

WJE NOTE: Both parameters do not need to be in WARN at the same time. The WARN
WJE values displayed correspond to the warning lights displayed in the cockpit.

WJE (30) Test Stick Pusher (WORD 31).

WJE (a) On PAU, Report 9, observe STK PUSH readout. Verify that the value displayed is NO.

WJE (b) Place STALL TEST switch, located on forward overhead switch panel, in SYS 1 position.
WJE Check that the value displayed in PUSH.

WJE (c) Return STALL TEST switch to OFF position.

WJE (31) Test Flight/Ground Sensing (WORD 22).

WJE (a) On PAU, Report 9, observe AIR GND readout. Verify that the value displayed is GND.

WJE **WARNING**: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE
WJE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE
WJE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE
WJE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES
WJE AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO
WJE PREVENT INADVERTENT OPERATION OF EQUIPMENT.

WJE **WARNING**: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE
WJE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY
WJE TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

WJE (b) Open this circuit breaker and install safety tag:

WJE **UPPER EPC, L AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

WJE (c) On PAU, Report 9, observe AIR GND readout. Verify that the value displayed is AIR.

WJE (d) Remove the safety tag and close this circuit breaker:

WJE **UPPER EPC, L AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

WJE (32) Test GMT (WORD 37).

WJE (a) Turn GMT selector on the First Officer's clock to HLD, then switch to FAST SLEW. Set
WJE hours display to 16.

WJE (b) Turn GMT selector to slow slew to set minutes to 49.

WJE (c) On PAU, Report 9, observe GMT HRS and GMT MIN. Turn GMT selector to RUN and
WJE verify that 16 hours and 49 minutes is displayed.

WJE (33) Test Windshear Warning (WORD 15).

WJE (a) On PAU, Report 9, observe WNDSHR WARN. Verify that OFF is displayed.

WJE (b) Momentarily place WNDSHR TEST switch, located on overhead switch panel, to TEST
WJE position. Verify that WNDSHR is displayed corresponding with illumination of the red
WJE WNDSHR lights on the glareshield.

WJE (c) Return WNDSHR TEST switch to OFF position.

WJE (34) Test Mag/True Discrete (WORD 47).

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- WJE (a) On PAU, Report 9, observe MAG TRUE HDG. With Captain's Mag/True switch selected
WJE to "MAG", verify that MAG is displayed.
- WJE (b) Select Captain's Mag/True switch to "TRUE". Verify that TRUE is displayed.
- WJE (c) Repeat Paragraph 3.B.(34)(a) and Paragraph 3.B.(34)(b) using the First Officer's Mag/
WJE True switch.

- WJE (35) Test Longitudinal Trim Discrete (WORD 51 - Primary Trim; WORD 11 - Alt Trim; WORD 43 -
WJE A/P Trim DN; WORD 45 - A/P Trim UP).

NOTE: Make sure the IRS is aligned and the autopilot is engaged.

- WJE (a) On PAU, Report 10, observe PRIM TRIM ACT. Verify that OFF is displayed (Primary Trim
WJE not activated).
- WJE (b) Activate primary trim switch, on the control wheel. Verify when "Down" is selected, the
WJE word DOWN is displayed (Down trim activated) and when "Up" is selected, the word UP
WJE is displayed (Up trim activated).
- WJE (c) On PAU, Report 10, observe ALTER TRIM ACT. Verify that OFF is displayed (Alternate
WJE Trim not activated).
- WJE (d) Activate alternate trim in either direction and verify the word ACTIVE is displayed.
- WJE (e) On PAU, Report 10, observe AUTO TRIM DOWN and AUTO TRIM UP. Verify the word
WJE OFF is displayed (Autopilot trim not activated).

WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE
WJE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE
WJE OPENED. IF GROUND CONTROL RELAY CIRCUIT BREAKERS ARE TO BE
WJE OPENED WHILE PERFORMING PROCEDURES, MAKE CERTAIN SWITCHES
WJE AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITION TO
WJE PREVENT INADVERTENT OPERATION OF EQUIPMENT.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE
WJE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY
WJE TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- WJE (f) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	33	B1-24	RIGHT GROUND CONTROL RELAY

- WJE (g) Install dummy targets over main gear weight on wheel (WOW) proximity sensors to place
WJE the DFGS in the flight mode.
- WJE (h) Activate autopilot trim down. Verify the word ACTIVE is displayed for AUTO TRIM DOWN
WJE (Down trim activated); AUTO TRIM UP is OFF.
- WJE (i) Activate autopilot trim up. Verify the word ACTIVE is displayed for AUTO TRIM UP (Up
WJE trim activated); AUTO TRIM DOWN is OFF.

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WJE (j) Remove the safety tags and close these circuit breakers:

WJE		UPPER EPC, L AC BUS			
WJE		<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE		K	33	B1-23	LEFT GROUND CONTROL RELAY

WJE		UPPER EPC, R AC BUS			
WJE		<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE		L	33	B1-24	RIGHT GROUND CONTROL RELAY

WJE (k) Remove WOW dummy targets.

WJE (36) Test Completion.

WJE (a) Disconnect and remove all test equipment.

WJE (b) Restore aircraft to normal configuration.

WJE **4. Data Transfer Procedure - Laptop**

WJE A. Data transfer from Laptop to Floppy Disk

WJE (1) Turn on laptop and wait for software to load.

WJE (2) From command menu, use the up/down arrow keys to highlight "COPY FLIGHT DATA" and
WJE press ENTER.

WJE (3) Select "INTERNAL DISK" as source drive and press ENTER.

WJE (4) Select "A: DISK DRIVE" as destination drive and press ENTER.

WJE (5) Select file you wish to copy, using the up/down arrow keys, and press ENTER.

WJE (6) Insert a blank 1.44MB floppy disk into floppy disk drive and press ENTER.

WJE (7) When copy is completed, press ENTER to return to command menu screen.

WJE (8) Repeat Paragraph 4.A.(2) thru Paragraph 4.A.(7) until all desired files are copied.

WJE B. Data Transfer from Floppy Disk to Laptop.

WJE (1) Turn on laptop and wait for software to load.

WJE (2) From command menu, use the up/down arrow keys to highlight "COPY FLIGHT DATA" and
WJE press ENTER.

WJE (3) Select "A: DISK DRIVE" as source drive and press ENTER.

WJE (4) Select "INTERNAL DRIVE" as destination drive and press ENTER.

WJE (5) Insert appropriate floppy disk drive and press ENTER.

WJE (6) Select the file you wish to copy, using the up/down arrow keys, and press ENTER.

WJE (7) When status window displays "COPY COMPLETED", press ENTER to return to command
WJE menu screen.

WJE (8) Repeat Paragraph 4.B.(2) thru Paragraph 4.B.(7) until all desired files are copied.

MD-80 AIRCRAFT MAINTENANCE MANUAL

DIGITAL FLIGHT DATA RECORDER - MAINTENANCE PRACTICES

1. General

A. This maintenance practice provides removal/installation procedures for the flight data recorder.

WJE 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 891

B. The flight data recorder is located inside and aft of the aft cargo compartment door.

WJE 401-406, 409, 410, 873-879, 881, 883, 884, 886, 887, 892, 893

C. The universal flight data recorder is located inside and aft of the aft cargo compartment door.

WJE ALL

2. Removal/Installation Flight Data Recorder

A. Remove Flight Data Recorder

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Unscrew knurled holddown nuts at front end of mounting rack and swing holddown assemblies down.
- (3) Turn driver/extractor handle counterclockwise until flight data recorder electrical connector is disengaged from mounting rack support.
- (4) Remove flight data recorder.

B. Install Flight Data Recorder

EFFECTIVITY	
WJE ALL	

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) If the flight data recorder does not have an underwater locator beacon (ULB) installed, do this task: Underwater Locator Beacon Installation. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-12/201 Config 1)
- NOTE: Install the ULB from the replaced ULB.
- (3) Visually check flight data recorder and rack connectors for loose, dirty, or broken pins and wires.
- (4) Slide flight data recorder into rack; ensure that guide pin bushings and connectors are properly aligned.
- (5) With front panel bottom edge of flight data recorder seated in extractor slot, turn driver/extractor handle clockwise until recorder is firmly engaged in rack.
- (6) Engage and tighten holddown assemblies.
- (7) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER



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UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893

C	14	B10-331	FLIGHT RECORDER
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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE ALL

G	21	B10-46	FLIGHT RECORDER
---	----	--------	-----------------

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893

B	7	B10-329	FLIGHT RECORDER
---	---	---------	-----------------

WJE ALL

- (8) Check that FLT RECORDER OFF light on annunciator panel comes on.
- (9) Place flight recorder switch in GND TEST position. Check that FLT RECORDER OFF light goes off.
- (10) Place flight recorder switch in NORM position. Check that FLT RECORDER OFF light comes on.

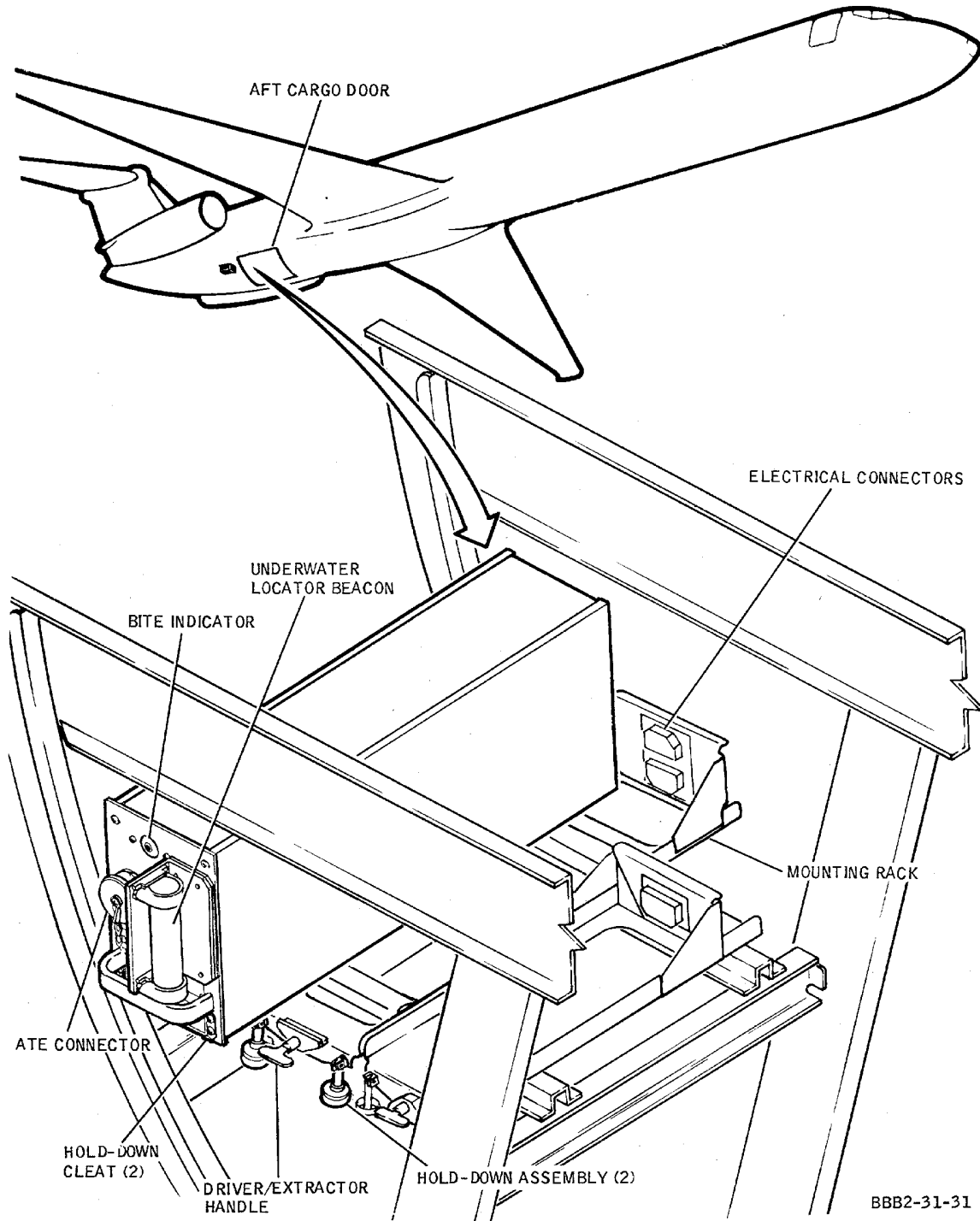
EFFECTIVITY
WJE ALL

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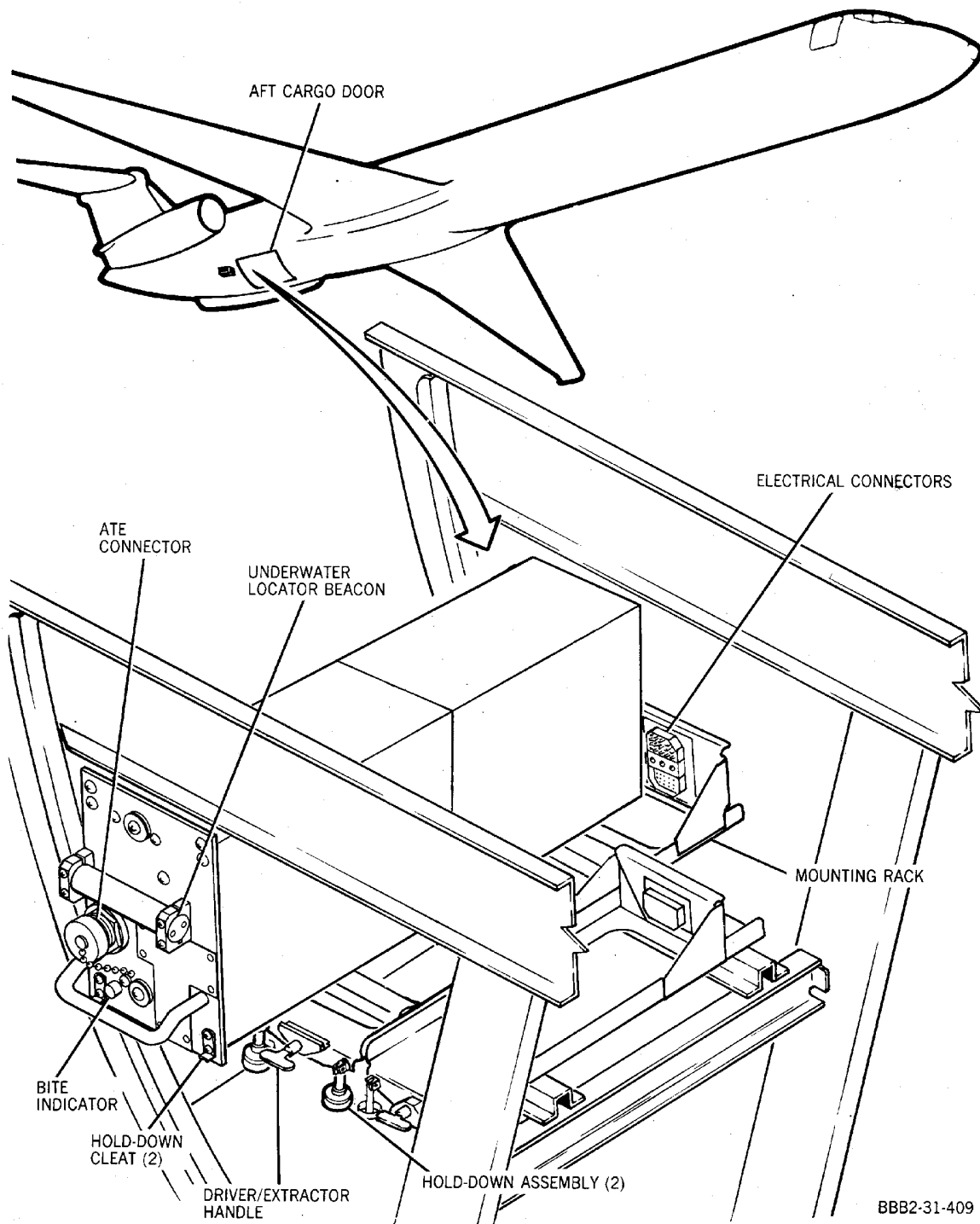


Digital Flight Data Recorder -- Removal/Installation
Figure 201/31-31-01-990-801 (Sheet 1 of 2)

EFFECTIVITY
WJE 407, 408, 411, 880

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Digital Flight Data Recorder -- Removal/Installation
Figure 201/31-31-01-990-801 (Sheet 2 of 2)

EFFECTIVITY

WJE 412, 414-427, 429, 861-866, 868, 869, 871, 872, 891

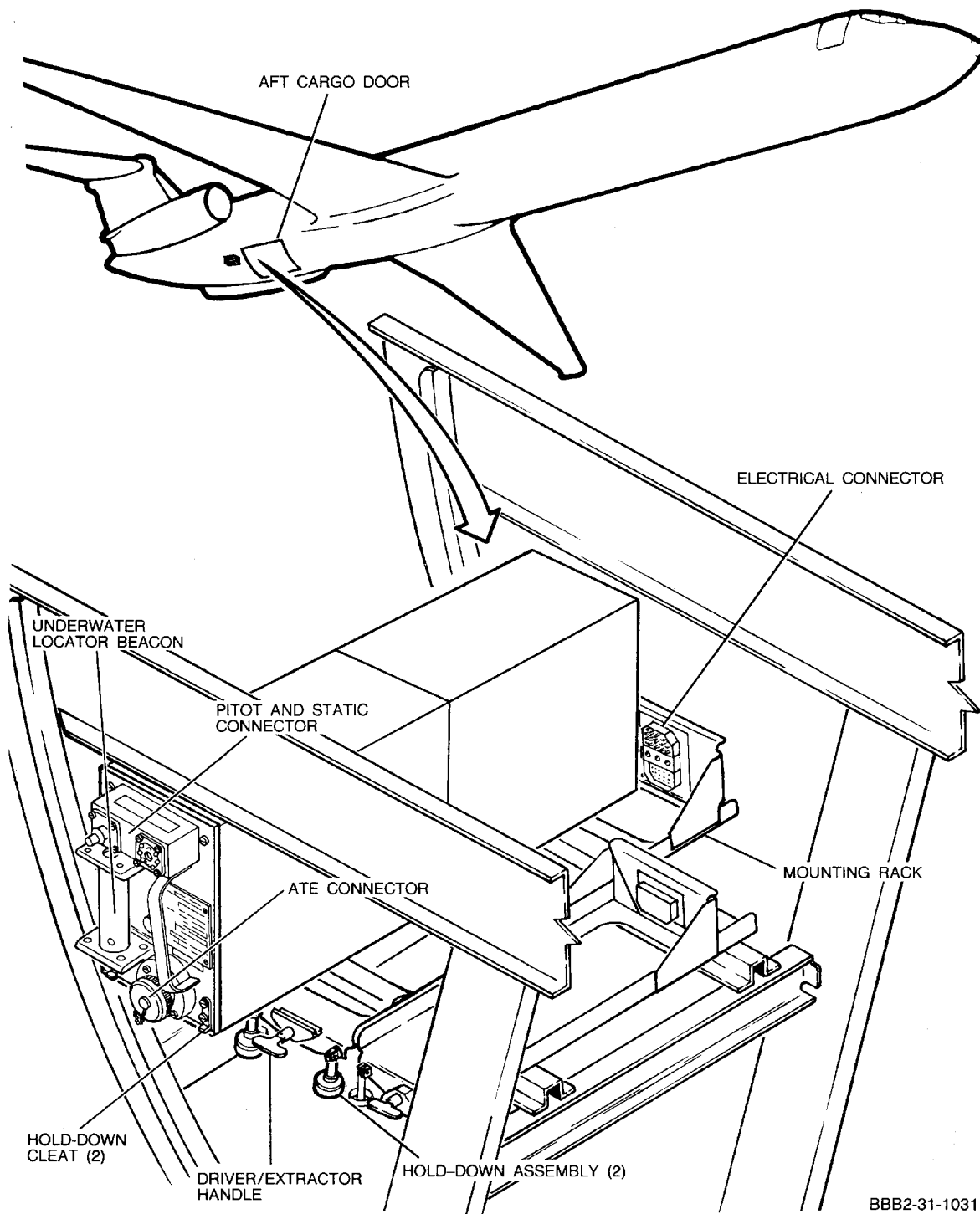
TP-80MM-WJE

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Universal Flight Data Recorder -- Removal/Installation
Figure 202/31-31-01-990-802 (Sheet 1 of 2)

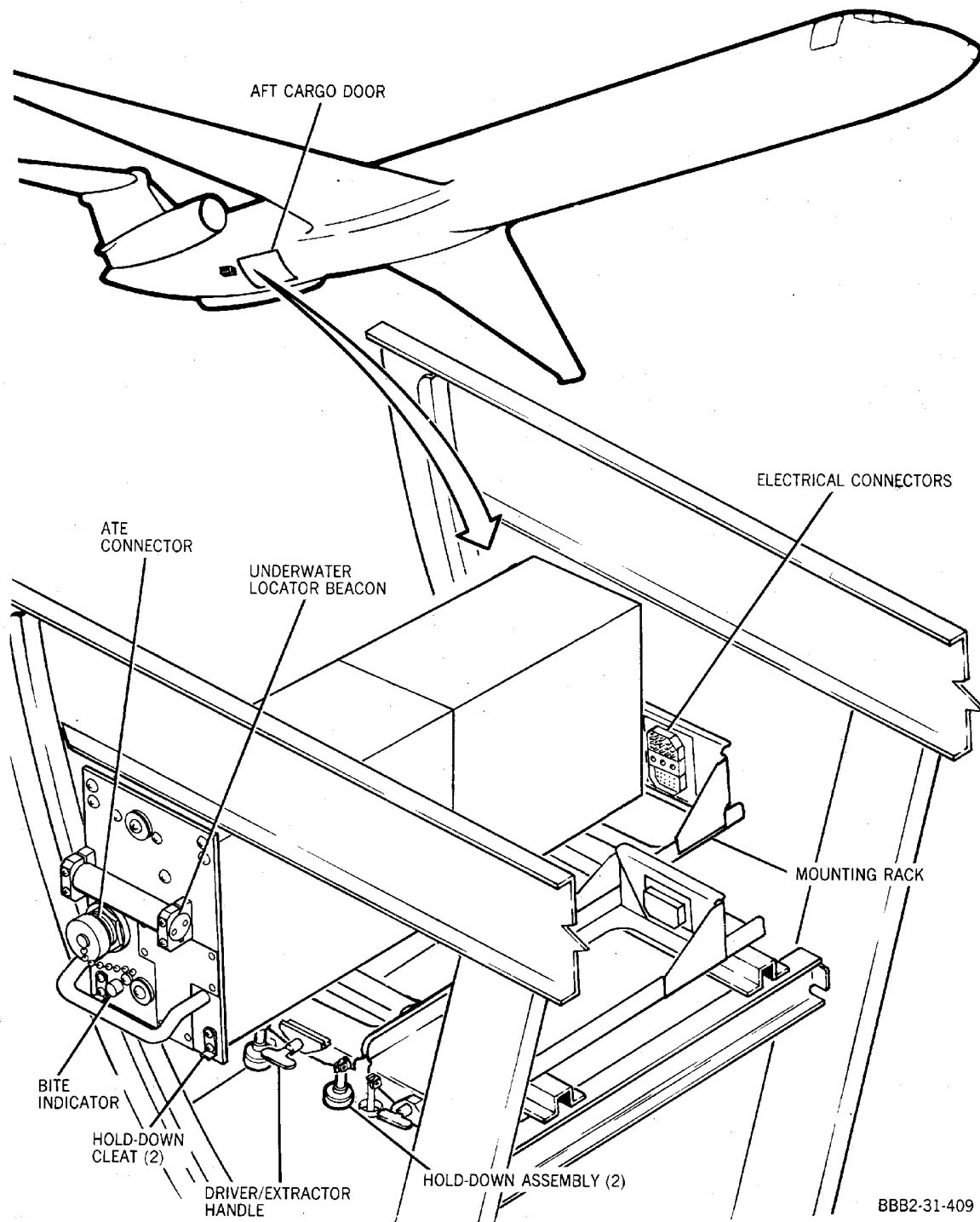
EFFECTIVITY
WJE 886, 887

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Universal Flight Data Recorder -- Removal/Installation
Figure 202/31-31-01-990-802 (Sheet 2 of 2)

EFFECTIVITY
WJE 401-406, 409, 410, 873-879, 881, 883, 884, 892, 893

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DIGITAL FLIGHT DATA RECORDER - ADJUSTMENT/TEST

1. General

A. This procedure contains MSG-3 task card data.

TASK 31-31-01-720-801

2. Functional Check of the Digital Flight Data Recorder

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
31-31-01 P/B 201	DIGITAL FLIGHT DATA RECORDER - MAINTENANCE PRACTICES

B. Prepare for the Functional Check of the Digital Flight Data Recorder

SUBTASK 31-31-01-020-001

- (1) Remove the digital flight data recorder. (DIGITAL FLIGHT DATA RECORDER - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-01/201)

C. Functional Check of the Digital Flight Data Recorder

SUBTASK 31-31-01-510-001

- (1) Send the digital flight data recorder to the shop for a functional check.

SUBTASK 31-31-01-420-001

- (2) Install the digital flight data recorder. (DIGITAL FLIGHT DATA RECORDER - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-01/201)

SUBTASK 31-31-01-710-001

- (3) Do an operational check of the digital flight data recorder. (DIGITAL FLIGHT DATA RECORDER - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-01/201)

D. Job Close-up

SUBTASK 31-31-01-942-001

- (1) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

TASK 31-31-01-720-802

3. Functional Check of the Digital Flight Data Recorder (On-Aircraft)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
31-31-00 P/B 501 Config 1	FLIGHT RECORDER - ADJUSTMENT/TEST
31-31-00 P/B 501 Config 12	SOLID-STATE DIGITAL FLIGHT RECORDER SYSTEM - ADJUSTMENT/TEST
31-31-00 P/B 501 Config 2	FLIGHT RECORDER - ADJUSTMENT/TEST
31-31-00 P/B 501 Config 3	FLIGHT RECORDER - ADJUSTMENT/TEST

EFFECTIVITY WJE ALL	
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B. Prepare for the Functional Check of the Digital Flight Data Recorder

SUBTASK 31-31-01-720-001

- (1) Do a functional check of the digital flight data recorder. (FLIGHT RECORDER - ADJUSTMENT/TEST, PAGEBLOCK 31-31-00/501 Config 1 or FLIGHT RECORDER - ADJUSTMENT/TEST, PAGEBLOCK 31-31-00/501 Config 2 or FLIGHT RECORDER - ADJUSTMENT/TEST, PAGEBLOCK 31-31-00/501 Config 3 or SOLID-STATE DIGITAL FLIGHT RECORDER SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 31-31-00/501 Config 12)

————— END OF TASK —————

EFFECTIVITY
WJE ALL

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FLIGHT DATA ACQUISITION UNIT - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation procedures for the flight data acquisition unit (FDAU).
- B. The flight data acquisition unit is installed on the aft right radio rack in the electrical/electronic (E/E) compartment and is accessible through the E/E compartment access door.
- C. Figure 201 depicts the DMU tray pre-load adjustment. Dimension between rack electrical connector support plate and latch pin is critical at 20.99(±0.30) inches. This tolerance is necessary in order to maintain nominal pre-load and adequate mating of connector pins.

2. Removal/Installation Flight Data Acquisition Units (FDAU)

- A. Remove FDAU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (2) Press release button at top of handles; pull inner portion of handles out and down to release from keeper locking pins.
- (3) Pull unit straight out of rack until electrical connectors are disengaged from mounting rack connectors and remove unit.

- B. Install FDAU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

EFFECTIVITY

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

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UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (2) Visually check FDAU and rack connectors for loose, dirty, or broken pins and wires.
- (3) Make certain that dimension A on FDAU rack is 20.99 inches. (Figure 201)
- (4) Slide FDAU into rack straight, make certain that connectors are properly aligned and that latch handles engage on keeper pins.
- (5) Close locking handles and press firmly until securely locked in place.
- (6) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 401-406, 409, 410, 412, 414, 873, 874, 881, 883, 884, 886, 887, 892, 893

- (7) Perform BITE indicator test of FDAU as follows:
 - (a) Wait 30 seconds after power application to allow system to become fully operable.
 - (b) Press and hold BITE press-to-test indicator lamp on face of FDAU.
 - (c) Verify that BITE lamp comes on.
 - (d) Release indicator and verify that BITE lamp goes off.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (8) Press FAULT RESET switch on face of FDAU, release switch and wait approximately 16 seconds; if FDAU bite indicator is not tripped to display yellow, unit is operable.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

EFFECTIVITY

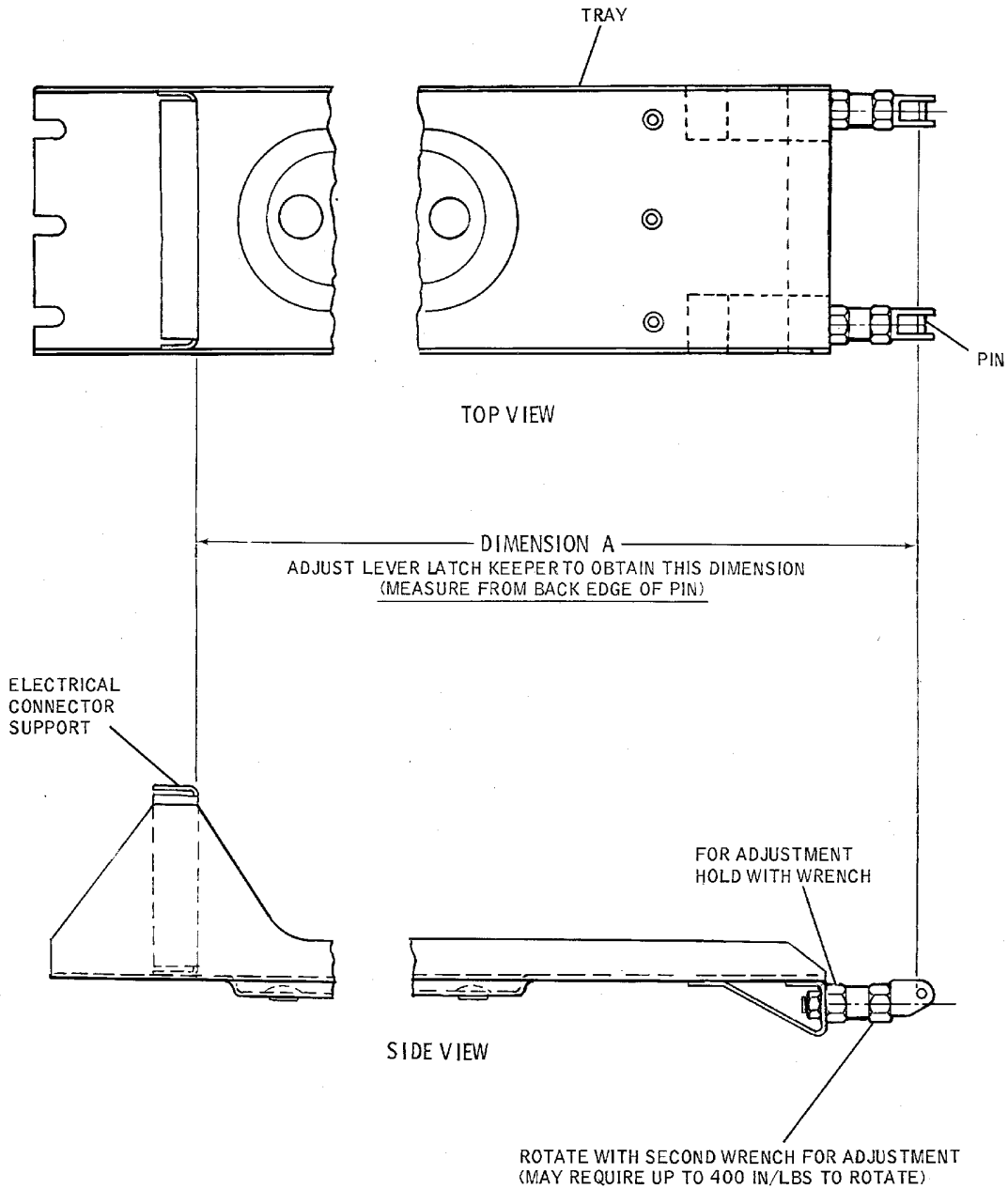
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

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BBB2-31-38

**FDAU Tray Latch Pre-Load Adjustment
Figure 201/31-31-02-990-802**

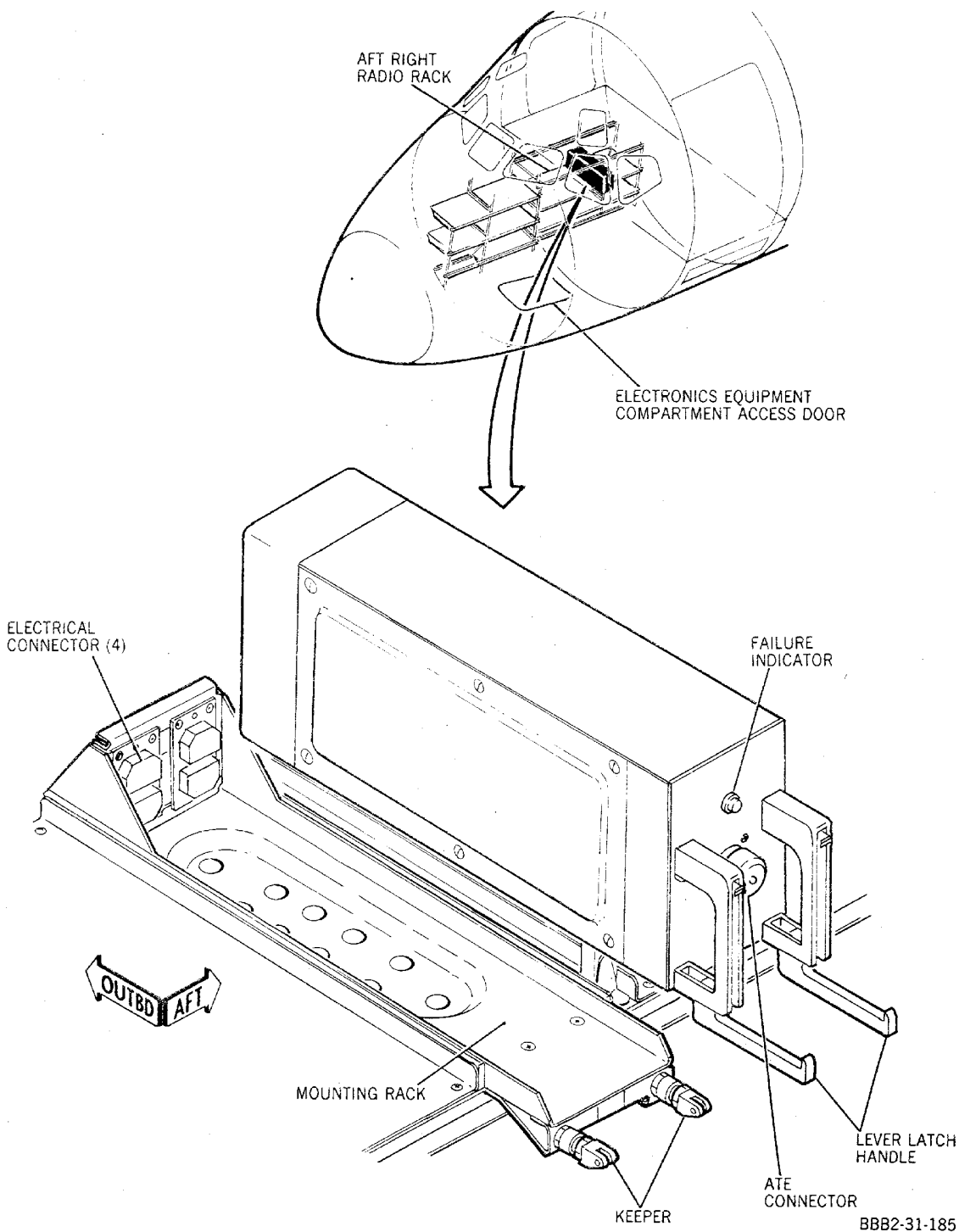
EFFECTIVITY
WJE 401-412, 414-427, 429, 861-866, 868, 869,
871-874, 880, 881, 883, 884, 886, 887, 891-893

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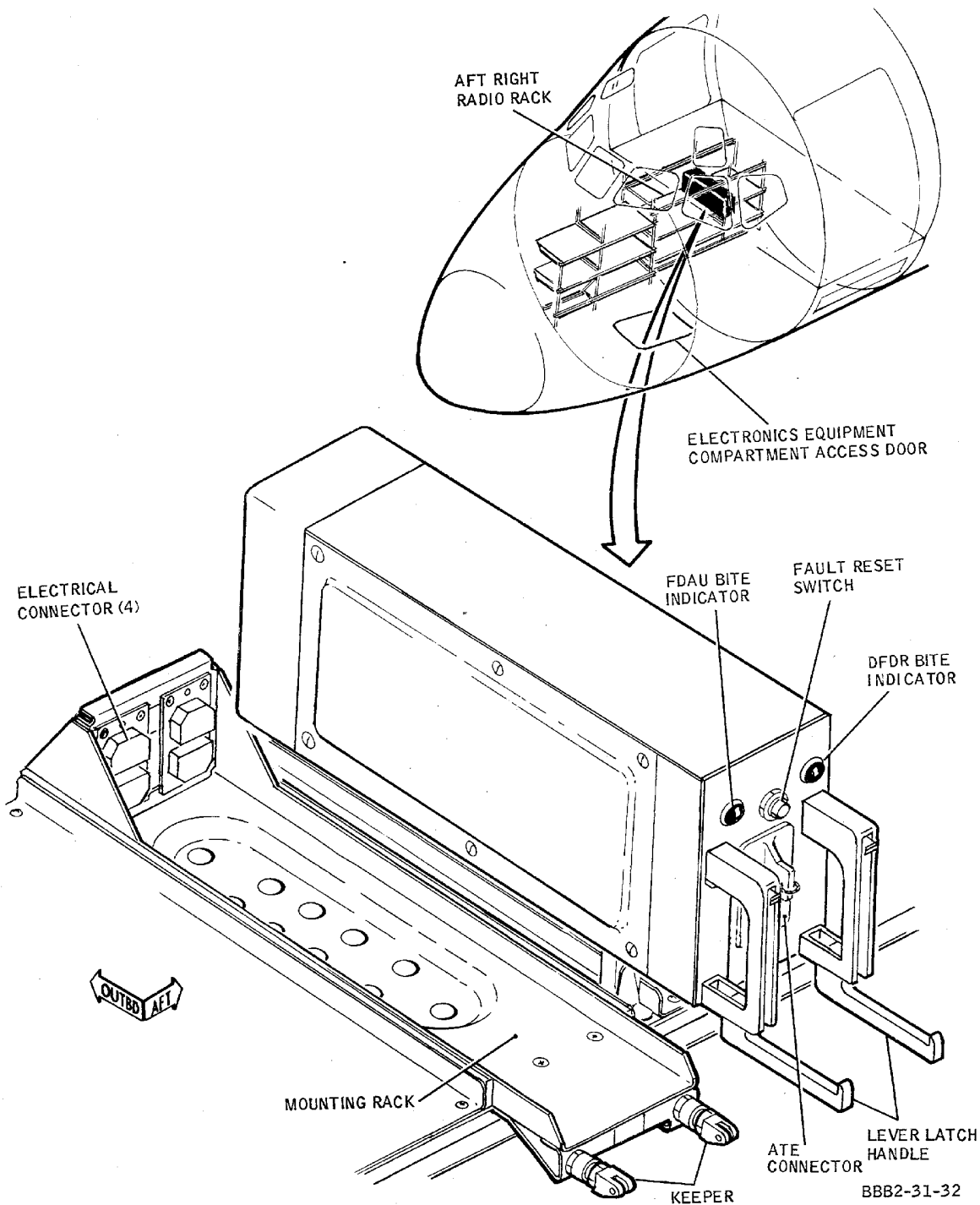


Flight Data Acquisition Unit -- Removal/Installation
Figure 202/31-31-02-990-805 (Sheet 1 of 2)

EFFECTIVITY
WJE 401-404, 412, 414, 873, 874

TP-80MM-WJE

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Flight Data Acquisition Unit -- Removal/Installation
Figure 202/31-31-02-990-805 (Sheet 2 of 2)

EFFECTIVITY
WJE 405-411, 880, 881, 883, 884, 886, 887, 892, 893

TP-80MM-WJE

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DIGITAL FLIGHT DATA ACQUISITION UNIT - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation procedures for the digital flight data acquisition unit (DFDAU).
- B. The digital flight data acquisition unit is installed on the aft right radio rack in the electrical/electronic (E/E) compartment and is accessible through the E/E compartment access door.

2. Removal/Installation Digital Flight Data Acquisition Unit (DFDAU)

- A. Remove DFDAU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 877			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 875-879			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 877			
B	7	B10-329	FLIGHT RECORDER

WJE 875-879

- (2) Unscrew knurled holddown nuts at front end of mounting rack and swing assemblies down.
- (3) Pull unit straight out of rack until electrical connectors are disengaged from mounting rack connectors and remove unit.

- B. Install DFDAU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

EFFECTIVITY	
WJE 875-879	

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UPPER EPC, LEFT RADIO BUS

Row Col Number Name

WJE 877

C 14 B10-331 FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

WJE 875-879

G 21 B10-46 FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

Row Col Number Name

WJE 877

B 7 B10-329 FLIGHT RECORDER

WJE 875-879

- (2) Visually check DFDAU and rack connectors for loose, dirty, or broken pins and wires.
- (3) Slide DFDAU into rack straight, make certain that connectors are properly aligned.
- (4) Press firmly until securely locked in place.
- (5) Engage holddown assembly with lugs on unit, and tighten holddown nuts.

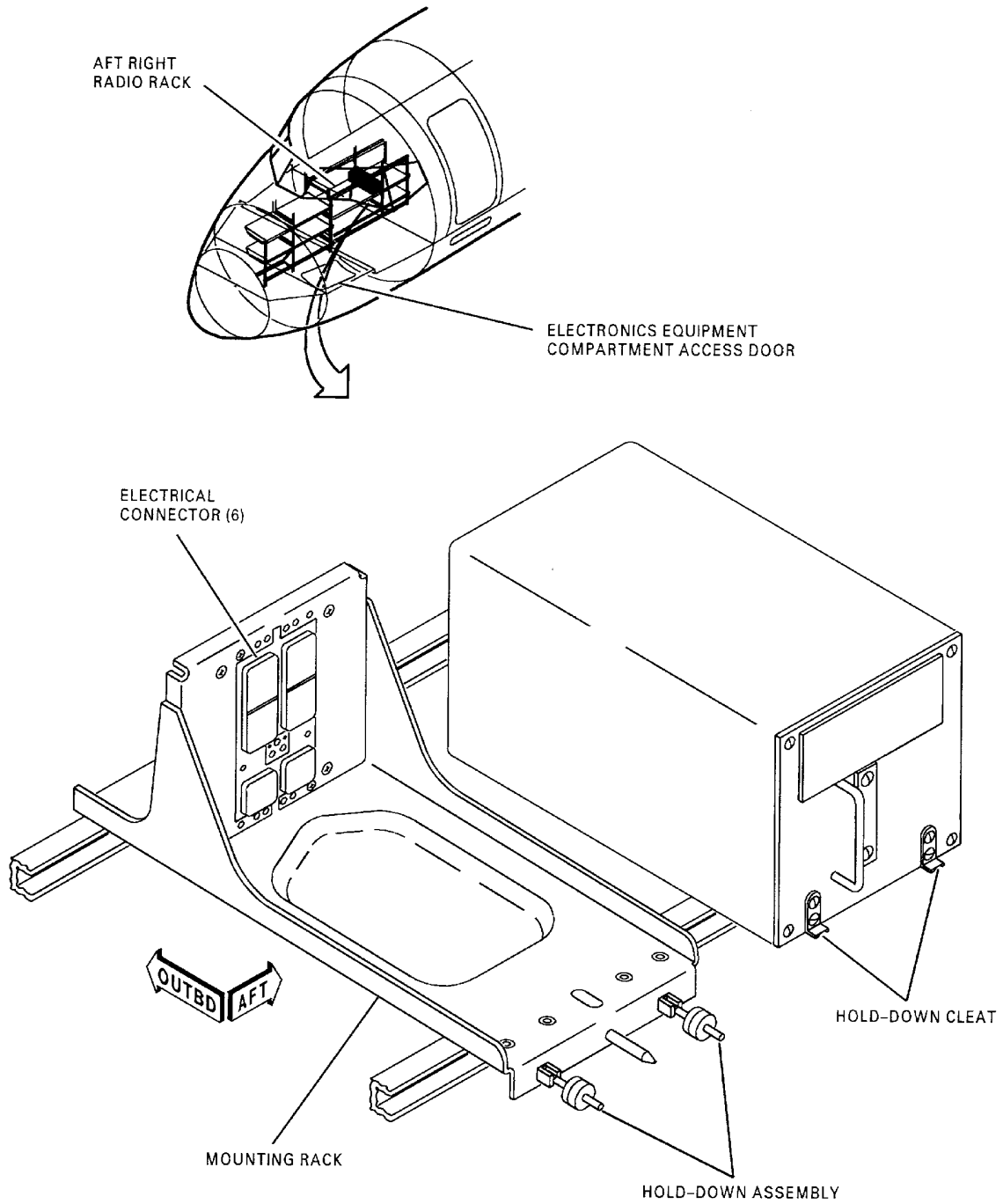
EFFECTIVITY
WJE 875-879

TP-80MM-WJE

31-31-02

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CAG(IGDS)

BBB2-31-1076

Digital Flight Data Acquisition Unit -- Removal/Installation
Figure 201/31-31-02-990-803

EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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FLIGHT DATA ENTRY PANEL - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation, and adjustment/test procedures for the flight data entry panel.
- B. The flight data entry panel is located in the overhead switch panel.

2. Removal/Installation Flight Data Entry Panel

- A. Remove Flight Data Entry Panel

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (2) Loosen camloc fasteners.
- (3) Withdraw unit from panel and disconnect electrical connector.
- (4) Remove flight data entry panel.

- B. Install Flight Data Entry Panel

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

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UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (2) Connect electrical connector to flight data entry panel.
- (3) Position unit in place on panel and tighten camloc fasteners.
- (4) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

WJE 406

- | | |
|-----|---|
| WJE | (5) Press and hold both FDAU and DFDR lights located on FDEP panel. |
| WJE | (6) Check that FDAU and DFDR lights come on and glow brightly. |
| | (7) Open PULL TO DIM switch located on forward overhead switch panel; check that flight data entry panel lights glow dimly. |
| | (8) Close PULL TO DIM switch. |
| WJE | (9) Release both FDAU and DFDR lights. |

WJE 401-404, 873, 874

- (10) Check that flight data entry panel lights glow brightly.
- (11) Open PULL TO DIM switch located on forward overhead switch panel; check that flight data entry panel lights glow dimly.
- (12) Close PULL TO DIM switch.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (13) Press FDEP TEST switch and within 4 seconds perform following:
 - (a) Check that flight data entry panel lights glow brightly.
 - (b) Open PULL TO DIM switch located on forward overhead switch panel; check that flight data entry panel lights glow dimly.

EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,
871-874, 880, 881, 883, 884, 886, 887, 891-893

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WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893 (Continued)

(c) Close PULL TO DIM switch.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

EFFECTIVITY

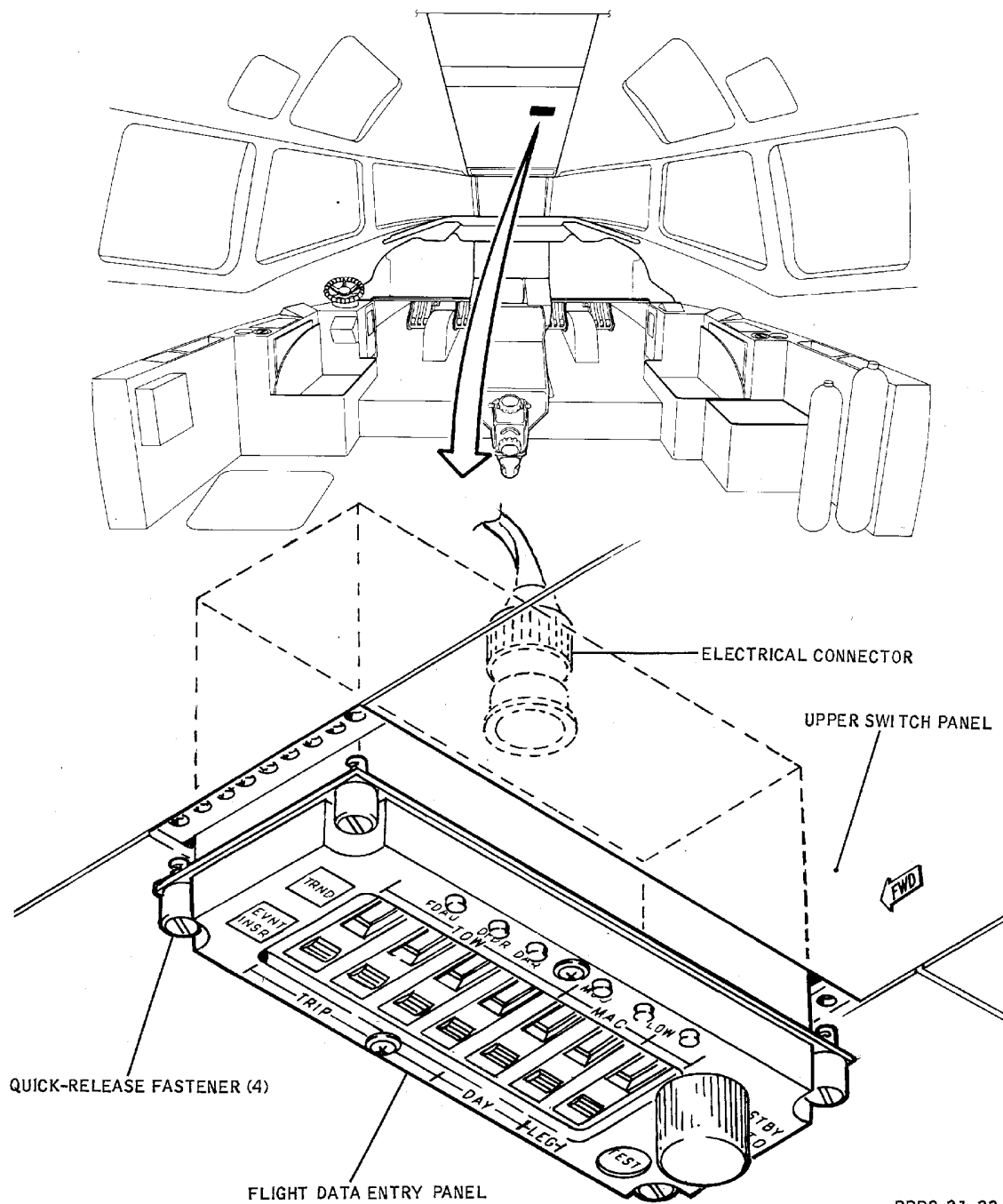
**WJE 401-411, 415-427, 429, 861-866, 868, 869,
871-874, 880, 881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

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BBB2-31-33

Flight Data Entry Panel -- Removal/Installation
Figure 201/31-31-03-990-801 (Sheet 1 of 4)

EFFECTIVITY
WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872,
891

TP-80MM-WJE

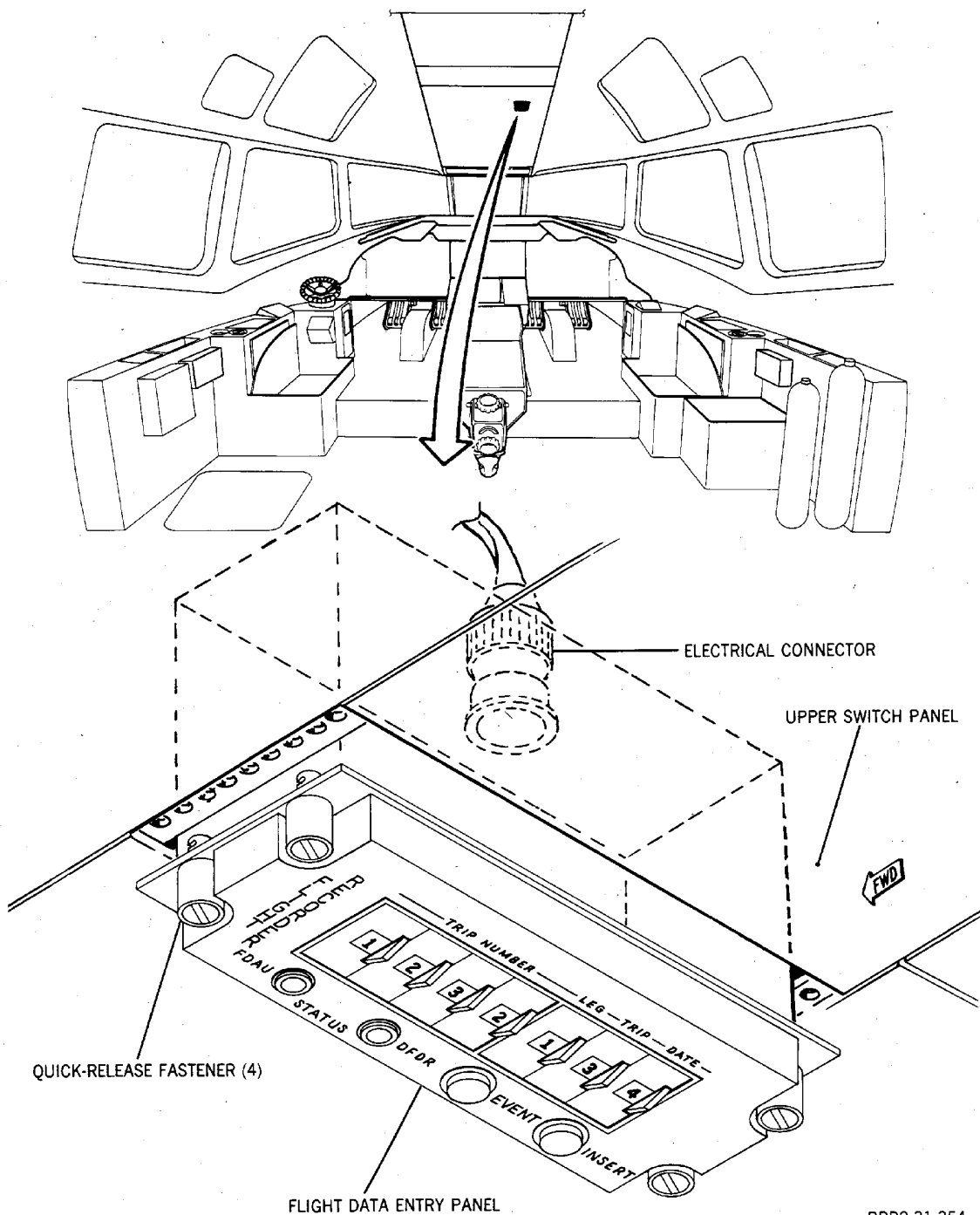
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BBB2-31-354

Flight Data Entry Panel -- Removal/Installation
Figure 201/31-31-03-990-801 (Sheet 2 of 4)

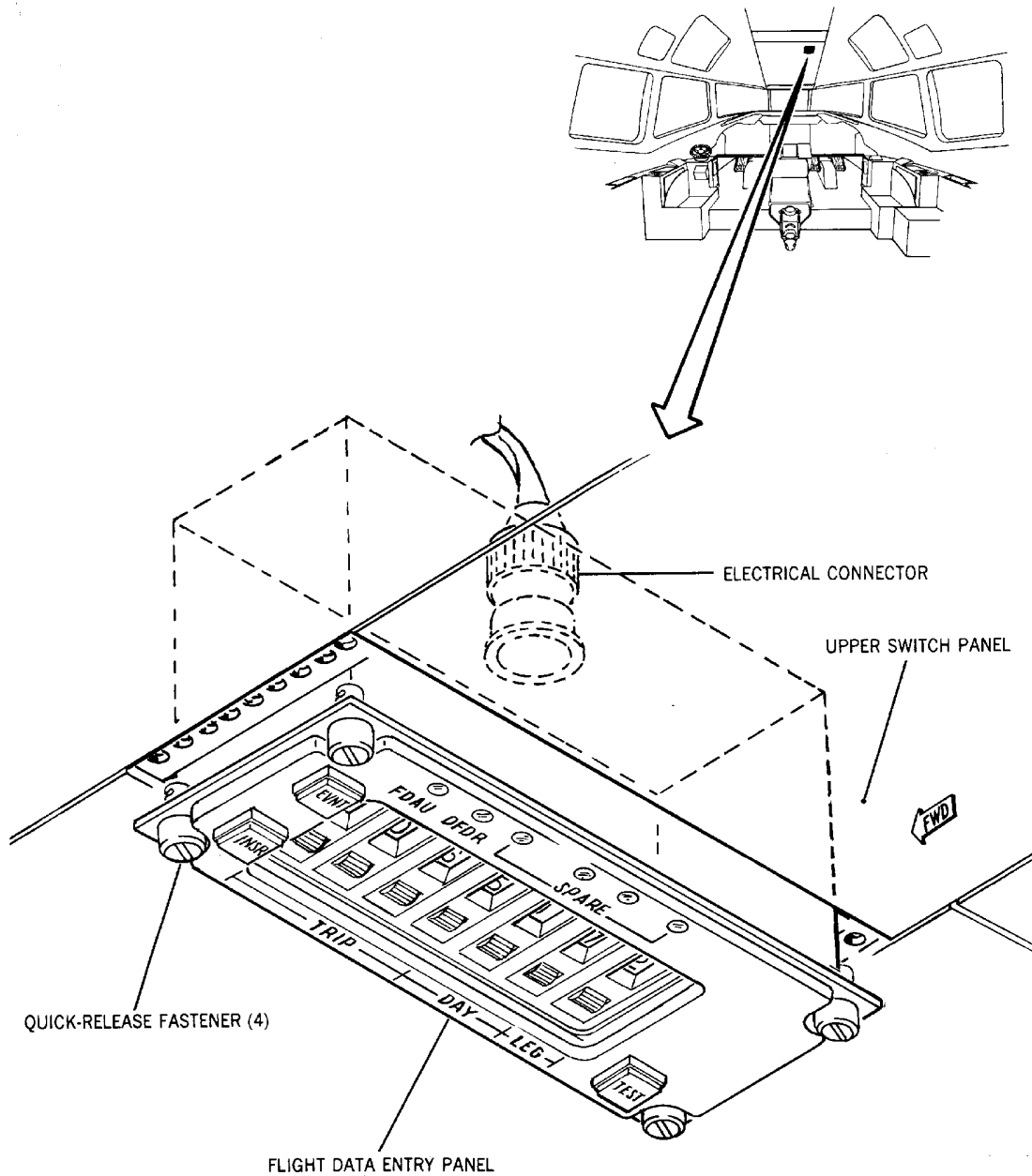
EFFECTIVITY
WJE 401-404, 406, 873, 874

TP-80MM-WJE

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BBB2-31-567

Flight Data Entry Panel -- Removal/Installation
Figure 201/31-31-03-990-801 (Sheet 3 of 4)

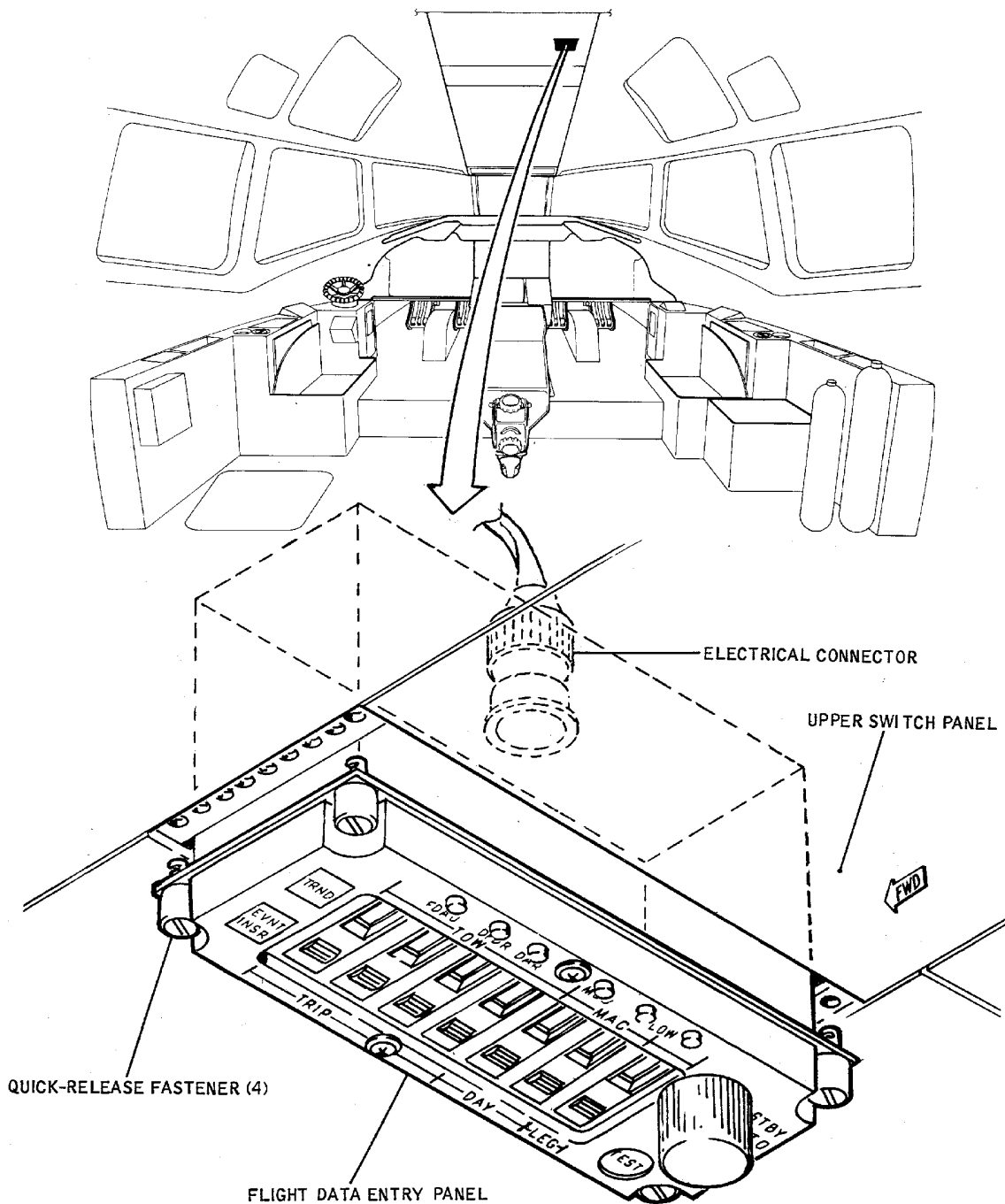
EFFECTIVITY
WJE 405, 409, 881, 883, 884, 886, 887, 892, 893

TP-80MM-WJE

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BBB2-31-86

Flight Data Entry Panel -- Removal/Installation
Figure 201/31-31-03-990-801 (Sheet 4 of 4)

EFFECTIVITY
WJE 407, 408, 411, 880

TP-80MM-WJE

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WJE 401-404

3. Adjustment/Test Flight Data Entry Panel

A. Test Flight Data Entry Panel

- (1) Press FDAU and DFDR STATUS lights, located on face of FDEP.
- (2) Check that FDAU and DFDR STATUS lights come on and glow brightly.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893

4. Adjustment/Test Flight Data Entry Panel

A. Test Flight Data Entry Panel

WJE 873, 874

- (1) Press FDAU and DFDR STATUS lights, located on face of FDEP.
- (2) Check that FDAU and DFDR STATUS lights come on and glow brightly.

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891-893

- (3) Press and hold FDEP TEST switch, located on face of FDEP.

NOTE: Do not hold TEST switch for more than 8 seconds. If TEST switch is held for more than 8 seconds, FDAU synchronization test will be initiated.

- (4) Check that all fault indicator lights and FDEP TEST light come on and glow brightly.
- (5) Release FDEP TEST switch; if test is satisfactory, fault indicator lights go off immediately and TEST light goes off in approximately 4 seconds.
- (6) If test fails, fault indicator lights go off, and FDEP TEST light remains on, remove and replace FDEP.

NOTE: FDEP TEST light can be turned off by pressing FDEP TEST switch again.

- (7) Press and hold FDEP TEST approximately 10 seconds and release. FDEP TEST light will flash as each 4 second synchronization pulse is received and will continue for four frames, then terminate.

EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,
871-874, 880, 881, 883, 884, 886, 887, 891-893

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MD-80 AIRCRAFT MAINTENANCE MANUAL

ACCELEROMETER - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation procedures for the accelerometer.
- B. The accelerometer is located on the inboard bulkhead of the right main gear wheelwell.

2. Removal/Installation Accelerometer

CAUTION: TO REMOVE THE ACCELEROMETER UNIT, REMOVE ONLY THE THREE 3/16-DIA BOLTS IN MOUNTING LUGS OF THE UNIT. DO NOT BREAK LOCKWIRES NOR ATTEMPT TO REMOVE THE FOUR 1/4-DIA BOLTS SECURING THE ACCELEROMETER MOUNTING PLATE.

- A. Remove Accelerometer

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Disconnect electrical connector from accelerometer.
- (3) Remove accelerometer.
- B. Install Accelerometer

EFFECTIVITY	
WJE ALL	

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MD-80 AIRCRAFT MAINTENANCE MANUAL

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Install accelerometer.
 (3) Connect electrical connector to accelerometer.
 (4) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

EFFECTIVITY
 WJE ALL

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AIRCRAFT MAINTENANCE MANUAL**

UPPER EPC, RIGHT RADIO BUS

Row Col Number Name

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893

B 7 B10-329 FLIGHT RECORDER

WJE ALL

C. Test Accelerometer

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

(1) Test accelerometer. (FLIGHT RECORDER, SUBJECT 31-31-00, Adjustment/Test)

WJE ALL

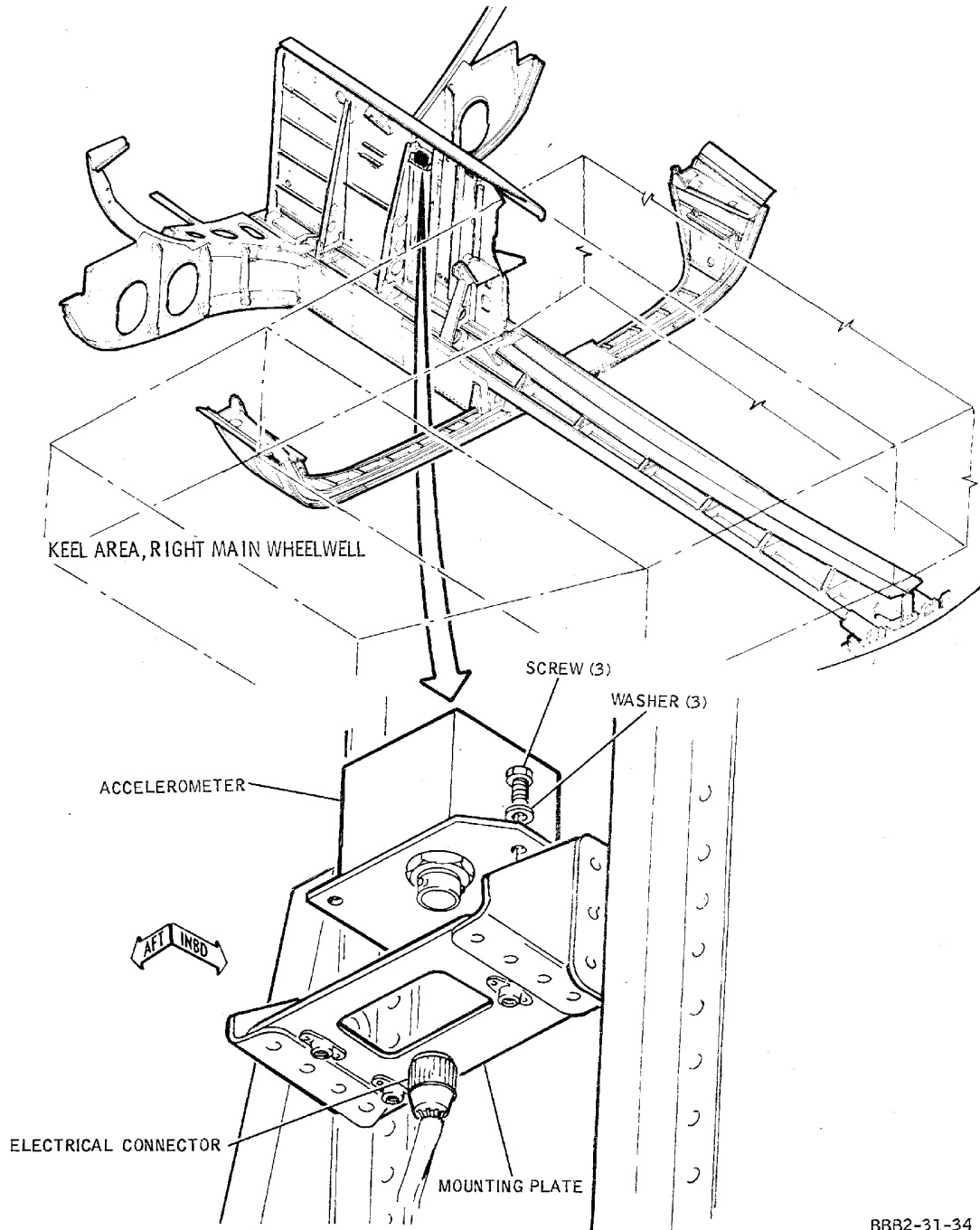
EFFECTIVITY
WJE ALL

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BBB2-31-34

Accelerometer -- Removal/Installation
Figure 201/31-31-04-990-801

EFFECTIVITY
WJE ALL

31-31-04

MD-80 AIRCRAFT MAINTENANCE MANUAL

MANAGEMENT CONTROL UNIT - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation procedures for the Management Control Unit (MCU).
- B. The Management Control Unit (MCU) is installed on shelf 1 of the aft right radio rack in the E/E compartment.

2. Removal/Installation Management Control Unit (MCU)

- A. Remove MCU

WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

- (2) Unscrew knurled holddown nuts at front end of mounting rack and swing holddown assemblies down.
- (3) Remove MCU

- B. Install MCU

WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

- (2) Visually check MCU and rack connectors for loose, dirty, or broken pins or wires.
- (3) Slide MCU straight into rack: ensure that connectors are properly aligned.

WJE 405, 407-409, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

- (4) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

- (5) Press TEST switch, located on face of FDEP.
- (6) Check that all fault indicator lights and TEST light come on and glow brightly.

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871, 872, 884, 891

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- (7) If test is satisfactory, fault indicator lights and FDEP TEST light should go off in approximately 4 seconds.

NOTE: Any status light remaining on indicates a failure of that unit.

- (8) If test fails, MCU fault indicator remains on, remove and replace MCU.
- (9) Following replacement of MCU, insert engine I.D. (2090000 for engine type 209, 2170000 for engine type 217, or 2190000 for engine type 219) by manually rotating thumbwheel switches to enter engine I.D. on FDEP; then, press event/insert button when FDEP mode is in STBY.

NOTE: This allows the MCU software to use the correct exceedance limit values for the particular engine type.

EFFECTIVITY

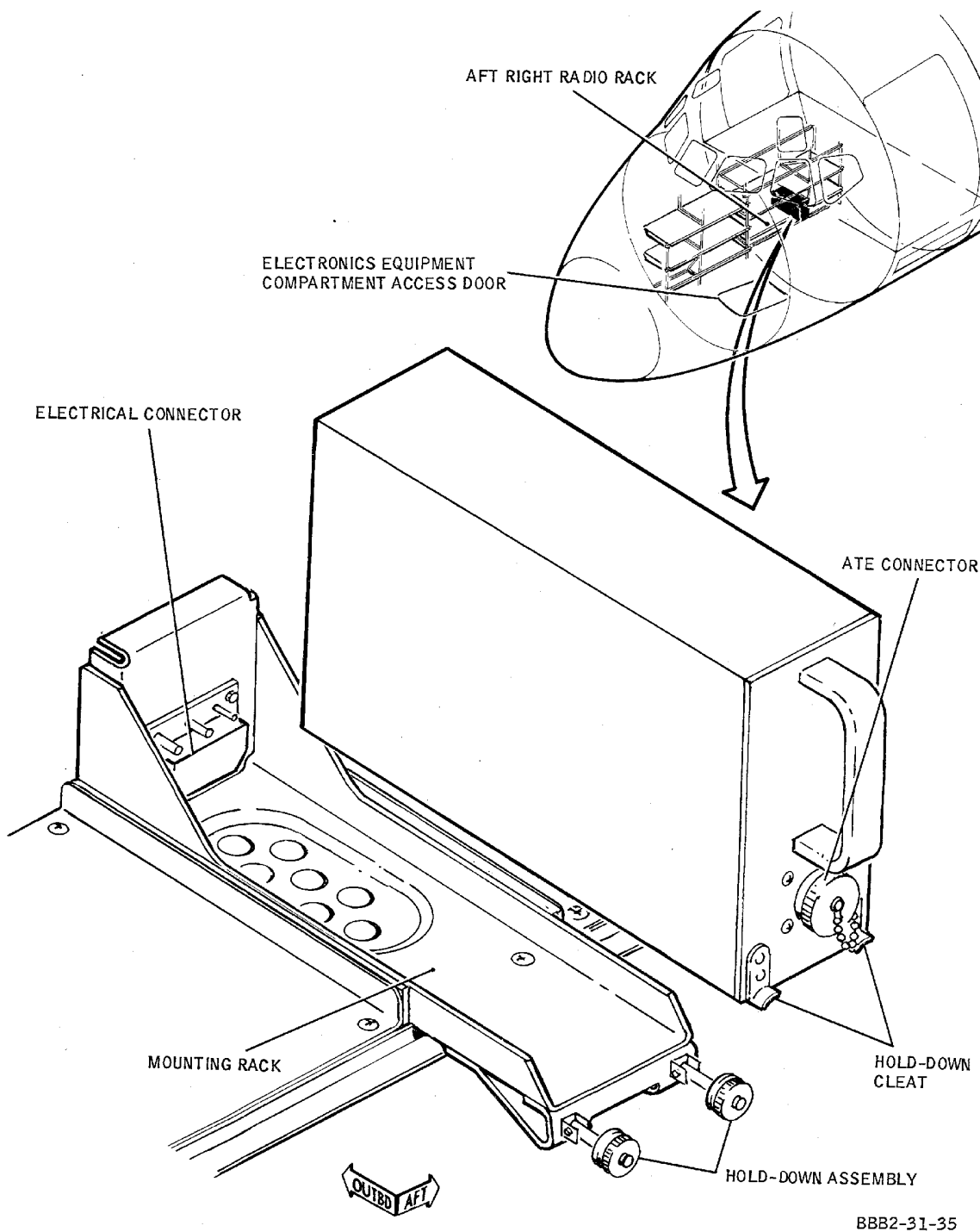
WJE 405, 407-411, 415-427, 429, 861-866, 868, 869,
871, 872, 884, 891

TP-80MM-WJE

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Management Control Unit -- Removal/Installation
Figure 201/31-31-05-990-801

EFFECTIVITY

WJE 405, 407-411, 415-427, 429, 861-866, 868, 869,
871, 872, 884, 891

TP-80MM-WJE

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DIGITAL AIDS RECORDER - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation, and cleaning procedures for the Digital AIDS Recorder.
- B. The Digital AIDS Recorder is located on shelf 2 of the aft right radio rack in the electrical electronic (E/E) compartment.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Cleaner, handwipe Brulin MP1793 DPM 6380-1	Brulin & Company, Inc. Richmond, CA
Soft, lint-free cloth wipers	

3. Removal/Installation Digital AIDS Recorder

- A. Remove Digital AIDS Recorder.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (2) Unscrew knurled holddown nuts at front end of mounting rack and swing holddown assemblies down.
- (3) Remove Digital AIDS Recorder
- B. Install Digital AIDS Recorder

EFFECTIVITY

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (2) Visually check Digital AIDS Recorder and rack connectors for loose, dirty, or broken pins and wires.
- (3) Slide Digital AIDS Recorder into rack; ensure that guide pin bushings and connectors are properly aligned.
- (4) Engage and tighten holddown assemblies.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (5) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (6) Press TEST switch on FDEP. Check that all annunciator lights come on and light in TEST switch on FDEP comes on.
- (7) Release TEST switch on FDEP. Check that TEST switch light remains on for 4 seconds and then goes off.
NOTE: If light remains on past 4 second interval, internal fault in FDEP is indicated.
- (8) If test fails, DAR fault indicator remains on, remove and replace DAR.
- (9) Open DIGITAL AIDS RECORDER & MCU circuit breaker. Check that DAR and MCU annunciator lights on the FDEP come on.
- (10) Close DIGITAL AIDS RECORDER & MCU circuit breaker. Check that DAR and MCU annunciator lights go off.
- (11) Remove cassette from digital aids recorder (DAR). Check that DAR light on FDEP comes on.
- (12) Insert cassette in DAR. Check that DAR light goes off.

NOTE: Do not re-install cassette, if cassette contains recorded data. Re-insertion of the cassette resets the record head to track one which would "write-over" previously recorded data resulting in garbage data upon data reduction.

EFFECTIVITY

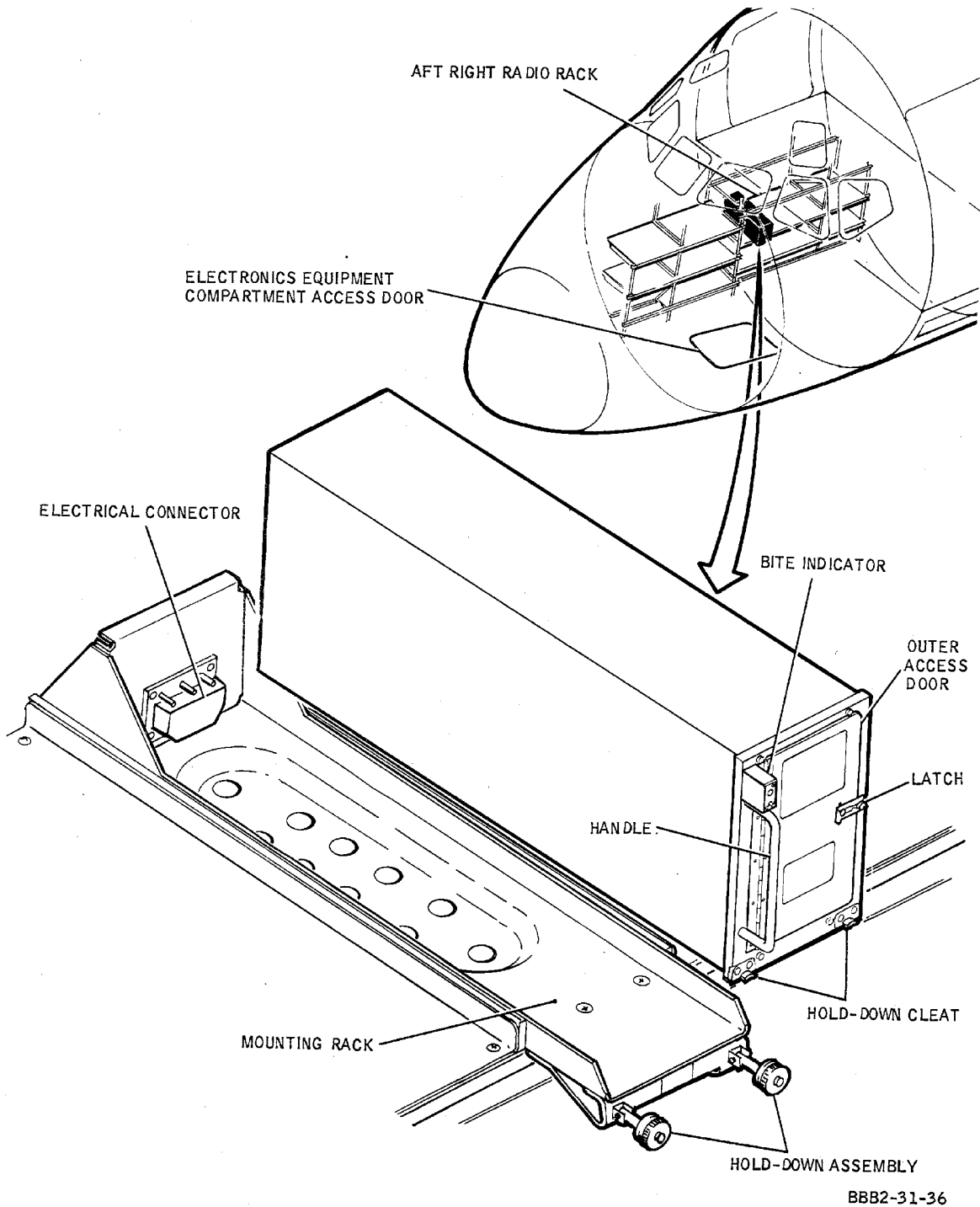
WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

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Digital AIDS Recorder -- Removal/Installation
Figure 201/31-31-06-990-801

EFFECTIVITY
WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

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4. Removal/Installation Digital AIDS Recorder Tape Cassette

- A. Remove Digital AIDS Recorder Tape Cassette
- (1) Open outer door by sliding latch on right edge of door back and swinging door outward to left.
 - (2) Open inner door by rotating handle to OPEN position. This will release door latch and enable door to be swung outward to left.
 - (3) Grasp cassette and pull straight out of recorder.
- B. Install Digital AIDS Recorder Tape Cassette
- (1) Make certain that tape spindles are lined up with cassette spindle receptacles.
 - (2) Place cassette into position on spindles. Press straight in until cassette snaps into place.
NOTE: If cassette is cocked at an angle it will not engage properly. Care must be taken to place cassette squarely on spindles and apply pressure in a straight manner.
 - (3) Close inner door and rotate to LOCKED position.
 - (4) Close outer door and secure latch.
 - (5) Check that TAPE LOW light on FDEP remains off.

5. Cleaning Digital AIDS Recorder

NOTE: This procedure provides the instructions for cleaning the magnetic heads and associated tape drive components in the tape deck of the Digital AIDS Recorder (DAR). This procedure may be performed on the aircraft without disconnecting the recorder.

CAUTION: MAKE SURE THAT HANDS ARE CLEAN AND FREE OF ANY OIL OR GREASE BEFORE REMOVING CASSETTE. OIL OR GREASE CAN CAUSE UNSATISFACTORY OPERATION OR EQUIPMENT DAMAGE.

- A. Prepare for Tape Deck Cleaning

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

CAUTION: TAPE SHOULD NOT BE TOUCHED WITH FINGERS BECAUSE THIS WILL RESULT IN FAULTY RECORDING.

- (2) Install protective cover, provided in front panel housing, on cassette.
- (3) Open tape deck outer access door by sliding latch on right edge of door back and swinging door outward to left.
- (4) Open inner door by rotating handle to OPEN position. This will release door latch and enable door to be swung outward to left.
- (5) Grasp cassette and pull straight out of recorder.

NOTE: The cassette will snap free and come out easily if pulled straight.

EFFECTIVITY

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

31-31-06

TP-80MM-WJE

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CAUTION: TAPE SHOULD NOT BE TOUCHED WITH FINGERS BECAUSE THIS WILL RESULT IN FAULTY RECORDING.

(6) Check that protective shutters on cassette are closed covering tape.

B. Clean Tape Deck

WARNING: HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(1) Using a soft, lint-free wiper moistened with Brulin MP1793 handwipe cleaner, gently clean magnetic heads until no more brown residue collects on wiper.

CAUTION: USE ONLY LIMITED AMOUNT OF CLEANING AGENT ON CAPSTAN. IF SOLVENT IS ALLOWED TO ENTER BEARINGS, THEY WILL BE DAMAGED.

(2) Using a soft, lint-free wiper moistened with Brulin MP1793 handwipe cleaner, clean all brown residue from capstan.

CAUTION: USE ONLY LIMITED AMOUNT OF CLEANING AGENT ON PINCH ROLLER. IF SOLVENT IS ALLOWED TO ENTER BEARINGS, THEY WILL BE DAMAGED.

(3) Using a soft, lint-free wiper moistened with Brulin MP1793 handwipe cleaner, clean all brown oxide residue from pinch roller.

NOTE: Once the brown oxide residue has been removed, the pinch roller should be considered clean. Black discoloration on the wiper should be ignored.

(4) Clean any residue from bottom of tape transport with soft brush.

C. Return System to Normal

(1) Obtain fresh cassette to install in DAR.

NOTE: Cassette should never be reinstalled in DAR until it has been erased and rewound. Initializer circuits in DAR cause it to begin recording on track one whenever cassette is installed. This will result in loss of data when cassette is removed and reinstalled.

(2) Grasp cassette and place in tape deck against shutter levers.

(3) Press cassette straight in against shutter levers until latched in place.

NOTE: Cassette snaps into place sharply. Once in place, a small amount of play in the catch can be felt.

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AIRCRAFT MAINTENANCE MANUAL**

- (4) Close inner door and rotate handle to LOCKED position.
- (5) Close outer door and secure latch.
- (6) Perform as applicable

Remove the safety tag and close this circuit breaker:

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (7) Provide electrical power. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)
- (8) Rotate selector switch on FDEP to FAST position.
- (9) Check that fault indicator on front of DAR shows black. If it shows yellow, reset indicator once and check that it remains black. Using flashlight, check that capstan is turning. If not turning, remove cassette and install again.

NOTE: Power must be turned off to reset indicator.
- (10) Rotate MODE selector switch to STANDBY position.

EFFECTIVITY

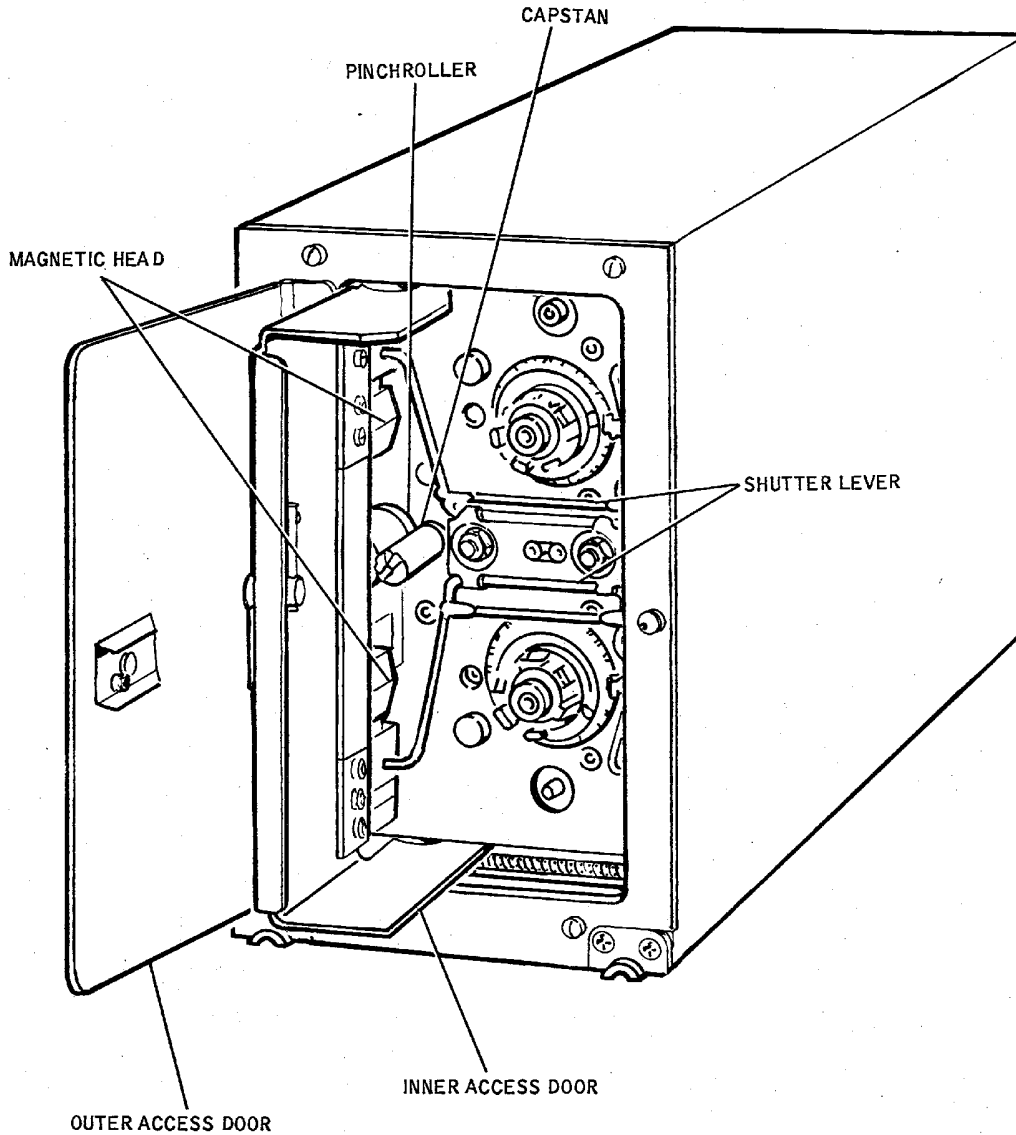
WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872, 891

31-31-06

TP-80MM-WJE

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BBB2-31-37

Digital AIDS Recorder -- Cleaning
Figure 202/31-31-06-990-802

EFFECTIVITY
WJE 410, 415-427, 429, 861-866, 868, 869, 871, 872,
891

TP-80MM-WJE

31-31-06

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MD-80 AIRCRAFT MAINTENANCE MANUAL

POWER LEVER ANGLE POTENTIOMETER - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation instructions for the power lever angle potentiometers.
- B. The potentiometers are located on the throttle switch unit in the subpedestal. Access is through access doors 4302 and 4201 in the nose landing gear compartment, behind the weather radar.
- C. Removal/installation procedures for the potentiometers are identical.

2. Removal/Installation Power Lever Angle Potentiometer

A. Remove Potentiometer

- (1) Make certain throttle/thrust reverser levers are in idle position.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (3) Obtain access to potentiometer through nose gear compartment.
- (4) Remove nut, washer, and bolt from arm.
- (5) Disconnect and tag electrical leads from potentiometer.
- (6) Remove potentiometer from bracket and arm.

B. Install Potentiometer

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

EFFECTIVITY

WJE 406-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

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UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

- (2) Install potentiometer to bracket and through arm so that flat on shaft of potentiometer is positioned to permit installation of bolt, washer, and nut.
- (3) Install bolt, washer, and nut.
- (4) Connect electrical leads to potentiometer.
- (5) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	B10-329	FLIGHT RECORDER

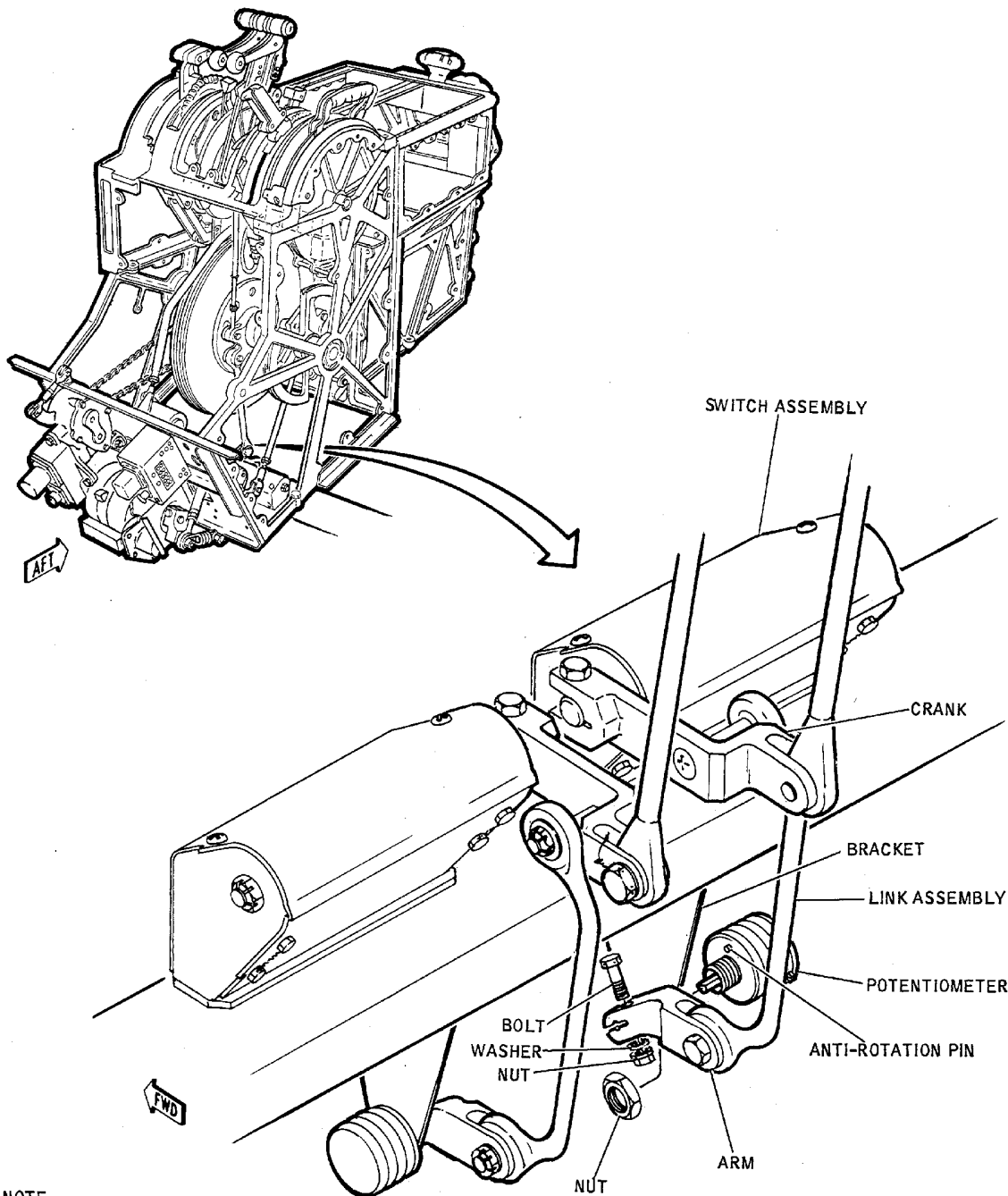
EFFECTIVITY

WJE 406-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891

31-31-08

TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



NOTE:
RIGHT INSTALLATION SHOWN,
LEFT INSTALLATION TYPICAL.

BBB2-31-120

**Power Lever Angle Potentiometer -- Removal/Installation
Figure 201/31-31-08-990-801**

<p>EFFECTIVITY WJE 406-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 891</p>

31-31-08

MD-80 AIRCRAFT MAINTENANCE MANUAL

BRAKE PEDAL POSITION POTENTIOMETER - MAINTENANCE PRACTICES

1. General

- A. Two brake pedal position potentiometers are mounted on the brake torque tube support bracket assembly. These synchro type potentiometers input data to the digital flight data recorder by relaying information when brakes are applied.
- B. Access to the potentiometers is through external access door 4201A in the avionics compartment.
- C. Removal/installation procedures for the potentiometers are identical.

2. Removal/Installation Brake Pedal Position Potentiometer

- A. Remove Potentiometer (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Disconnect and tag electrical leads from terminal strip.
 - (3) Loosen potentiometer drive arm clamping bolt at potentiometer shaft.
 - (4) Remove potentiometer from mounting bracket and retain cleats for reinstallation.
- B. Install Potentiometer

EFFECTIVITY
WJE ALL

31-31-09

MD-80 AIRCRAFT MAINTENANCE MANUAL

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Make certain rudder pedals are in neutral position.
- (3) Position potentiometer on mounting bracket and install attaching screws using existing cleats.
NOTE: Potentiometer shaft should insert in drive arm without binding and should be free to rotate.
- (4) Rotate potentiometer shaft until scribe mark on shaft aligns with electrical lead exit on potentiometer.
- (5) Tighten potentiometer drive arm clamping bolt at potentiometer shaft.
- (6) Determine wire length and connect electrical leads to terminal strip.
- (7) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER



31-31-09

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893 (Continued)

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE ALL

G	21	B10-46	FLIGHT RECORDER
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UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893

B	7	B10-329	FLIGHT RECORDER
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WJE ALL

- (8) Test brake pedal position potentiometer (if installed). (FLIGHT RECORDER, SUBJECT 31-31-00, Adjustment/Test)

NOTE: Make certain parking brake is released prior to making test.

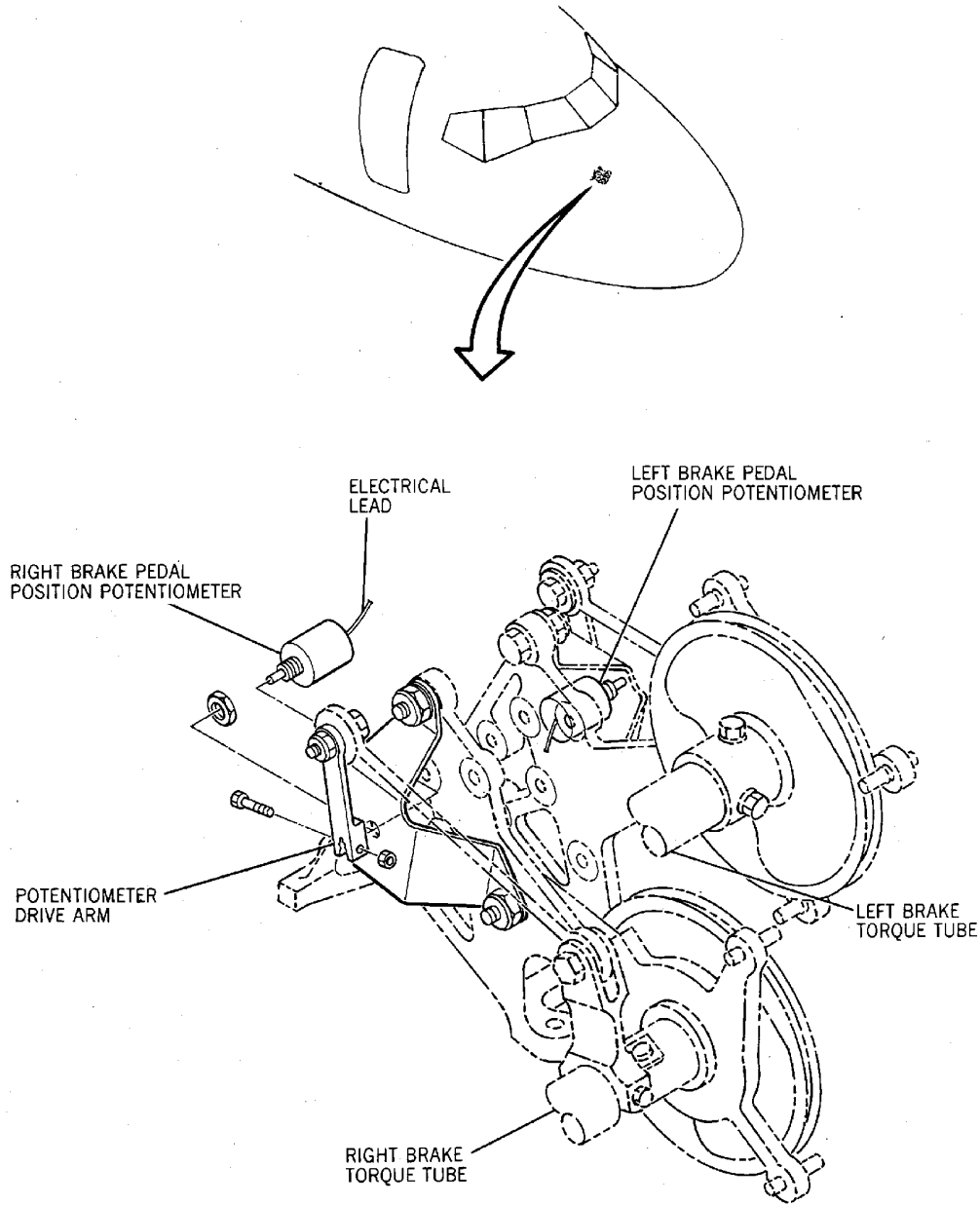
EFFECTIVITY
WJE ALL

TP-80MM-WJE

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BBB2-31-272

Brake Pedal Position Potentiometer -- Removal/Installation
Figure 201/31-31-09-990-801

EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-31-09

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MD-80 AIRCRAFT MAINTENANCE MANUAL

BRAKE PEDAL PRESSURE TRANSDUCERS - MAINTENANCE PRACTICES

1. General

- A. Two brake pedal pressure transducers, one in each main wheel well, transmit brake pressure input data to the digital flight data recorder.
- B. Access to the transducers is by opening the main wheel well doors.
- C. Removal/installation for the transducers are identical.

2. Removal/Installation of Brake Pedal Pressure Transducers

- A. Remove Transducer

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Disconnect electrical connector.
 - (3) Disconnect marriage clamp (on aircraft with S/B 31-25 accomplished).
 - (4) Remove transducer from tee fitting.
- B. Install Transducer

EFFECTIVITY	
WJE ALL	

31-31-10

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
B	7	B10-329	FLIGHT RECORDER

WJE ALL

- (2) Thread transducer on tee fitting and tighten.
- (3) Connect marriage clamp (on aircraft with S/B 31-25 accomplished).
- (4) Connect electrical connector.
- (5) Remove the safety tags and close these circuit breakers:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	21	B10-45	FLIGHT RECORDER

UPPER EPC, LEFT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893			
C	14	B10-331	FLIGHT RECORDER

UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
G	21	B10-46	FLIGHT RECORDER



31-31-10

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

UPPER EPC, RIGHT RADIO BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877, 880, 881, 883, 884, 886, 887, 891-893

B	7	B10-329	FLIGHT RECORDER
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WJE ALL

- (6) Bleed the brake system MAIN GEAR WHEEL BRAKES - MAINTENANCE PRACTICES, PAGEBLOCK 32-42-01/201

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

- (7) Test brake pressure input to Flight Recorder. (FLIGHT RECORDER, SUBJECT 31-31-00, Adjustment/Test.)

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (8) Test brake pressure transducers (FLIGHT RECORDER, SUBJECT 31-31-00, Adjustment/Test.).

WJE ALL

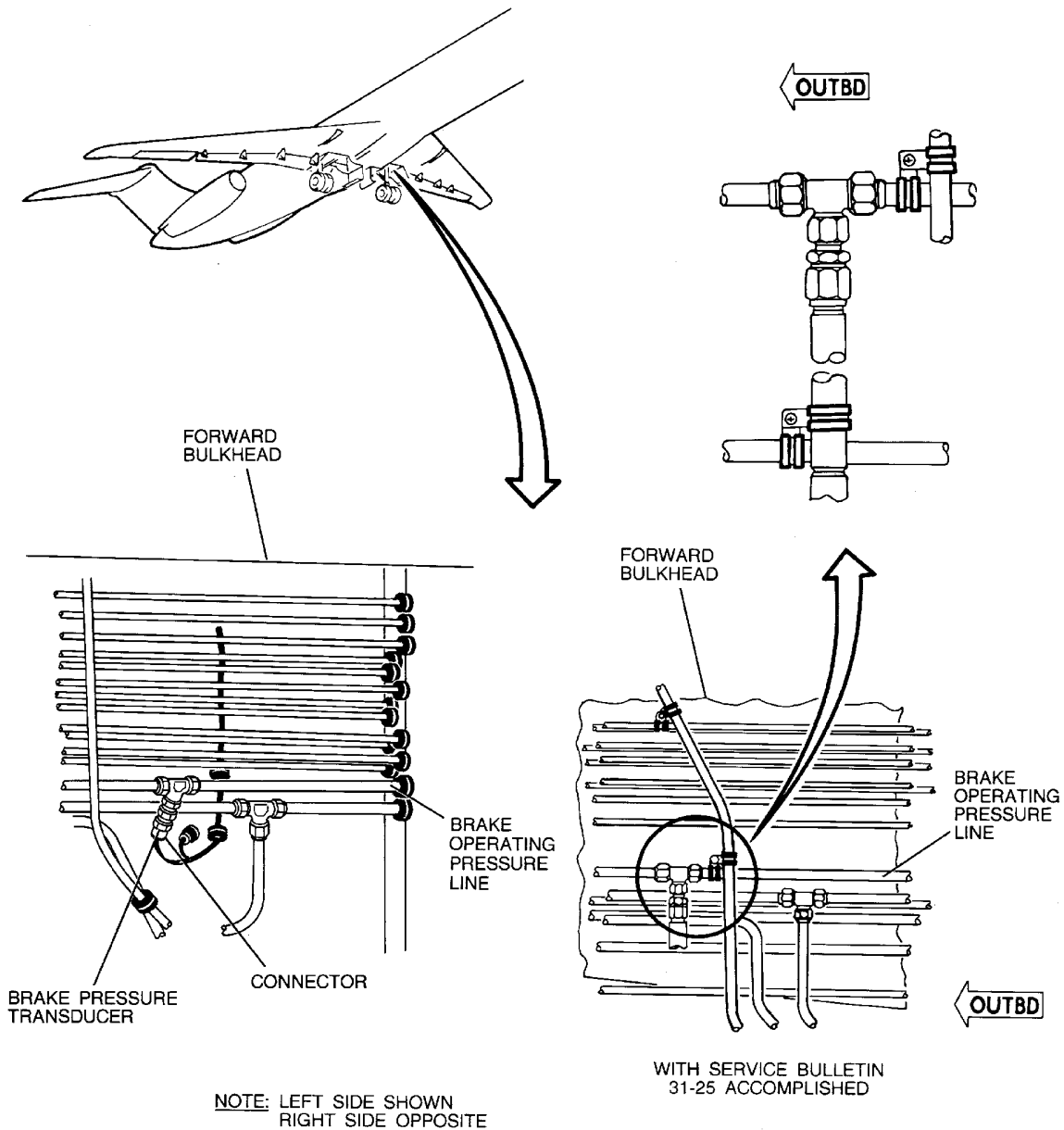
EFFECTIVITY
WJE ALL

TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



LEFT WING WHEEL WELL
(VIEW LOOKING FWD)

BBB2-31-273A

Brake Pressure Transducers -- Removal/Installation
Figure 201/31-31-10-990-801

EFFECTIVITY
WJE ALL

31-31-10

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL

PERFORMANCE MAINTENANCE RECORDER - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation, and cleaning procedures for the Performance Maintenance Recorder (PMR).
- B. The Performance Maintenance Recorder is located on shelf 2 of the aft right radio rack in the electrical electronic (E/E) compartment.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Cleaner handwipe Brulin MP1793 DPM 6380-1	Brulin & Company, Inc. Richmond, CA
Long handled cotton cleaning swabs	

3. Removal/Installation Performance Maintenance Recorder

- A. Remove Performance Maintenance Recorder

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

- (2) Unscrew knurled holddown nuts at front end of mounting rack and swing holddown assemblies down.
- (3) Remove Performance Maintenance Recorder.

- B. Install Performance Maintenance Recorder

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

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- (2) Visually check Performance Maintenance Recorder and rack connectors for loose, dirty, or broken pins and wires.
- (3) Slide Performance Maintenance Recorder into rack; ensure that guide pin bushings and connectors are properly aligned.
- (4) Engage and tighten holddown assemblies.
- (5) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

- (6) Press ANNUN/DIGITAL LTS TEST switch on the overhead switch panel. Check that all annunciator lights on FDEP come on.
- (7) Release ANNUN/DIGITAL LTS TEST switch on overhead switch panel.
- (8) If test fails, PMR fault indicator remains on, remove and replace PMR.
- (9) Open PERFORMANCE MAINTENANCE RECORDER circuit breaker. Check that PMR annunciator light on the FDEP comes on.
- (10) Close PERFORMANCE MAINTENANCE RECORDER circuit breaker. Check that PMR annunciator light goes off.
- (11) Remove cassette from digital aids recorder. Check that PMR light on FDEP comes on.
- (12) Insert cassette in PMR. Check that PMR light goes off.

NOTE: Do not re-install cassette, if cassette contains recorded data. Re-insertion of the cassette resets the record head to track one which would "write-over" previously recorded data resulting in garbage data upon data reduction.

4. Removal/Installation Performance Maintenance Recorder Tape Cassette

- A. Remove Performance Maintenance Recorder Tape Cassette
 - (1) Open outer door by releasing two 1/4 turn latches and swinging door outward to left.
 - (2) Release cassette by lifting red lever fully upwards.
 - (3) Grasp cassette and pull straight out of recorder.
 - (4) Record date and time of removal on cassette label.
- B. Install Performance Maintenance Recorder Tape Cassette
 - (1) Record airplane's name, date, and time of installation on cassette label. Install one cassette.
 - (2) With red lever in UP position insert cassette into PMR.
 - (3) Secure cassette by placing red lever fully down.
 - (4) Close outer door and secure 1/4 turn latches.
 - (5) Check that TAPE LOW light on FDEP remains off.

5. Cleaning Performance Maintenance Recorder

NOTE: This procedure provides the instructions for cleaning the magnetic heads and associated tape drive components in the tape deck of the Performance Maintenance Recorder (PMR). This procedure may be performed on the airplane without disconnecting the recorder.

CAUTION: MAKE SURE THAT HANDS ARE CLEAN AND FREE OF ANY OIL OR GREASE BEFORE REMOVING CASSETTE. OIL OR GREASE CAN CAUSE UNSATISFACTORY OPERATION OR EQUIPMENT DAMAGE.

- A. Prepare for Tape Deck Cleaning

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

- (2) Open tape deck access door by releasing 1/4 turn latches on right edge of door back and swinging door outward to left.
- (3) Release cassette by lifting red lever fully upwards.
- (4) Grasp cassette and pull straight out of recorder.

CAUTION: TAPE SHOULD NOT BE TOUCHED WITH FINGERS BECAUSE THIS WILL RESULT IN FAULTY RECORDING.

- (5) Check that protective shutter on cassette is closed covering tape.

B. Clean Tape Deck

WARNING: HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

CAUTION: DO NOT TOUCH MAGNETIC HEADS WITH FINGERS. EQUIPMENT DAMAGE MAY RESULT.

- (1) Using a long cleaning swab moistened with Brulin MP1793 handwipe cleaner, gently clean magnetic heads until no more brown residue collects on wiper.

CAUTION: USE ONLY LIMITED AMOUNT OF CLEANING AGENT ON CAPSTAN. IF SOLVENT IS ALLOWED TO ENTER BEARINGS, THEY WILL BE DAMAGED.

- (2) Using a long cleaning swab moistened with Brulin MP1793 handwipe cleaner, clean all brown residue from capstan.

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CAUTION: USE ONLY LIMITED AMOUNT OF CLEANING AGENT ON PINCH ROLLER. IF SOLVENT IS ALLOWED TO ENTER BEARINGS, THEY WILL BE DAMAGED.

- (3) Using a long cleaning swab moistened with Brulin MP1793 handwipe cleaner, clean all brown oxide residue from pinch roller.

NOTE: Once the brown oxide residue has been removed, the pinch roller should be considered clean. Black discoloration on the wiper should be ignored.

- (4) Clean any residue from bottom of tape transport with soft brush.

C. Return System to Normal

- (1) Obtain fresh cassette to install in PMR.

NOTE: A cassette should never be reinstalled in the PMR until it has been erased and rewound. The initializer circuits in the PMR cause it to begin recording on track one whenever the cassette is installed. This will result in the loss of data when a cassette is removed and reinstalled.

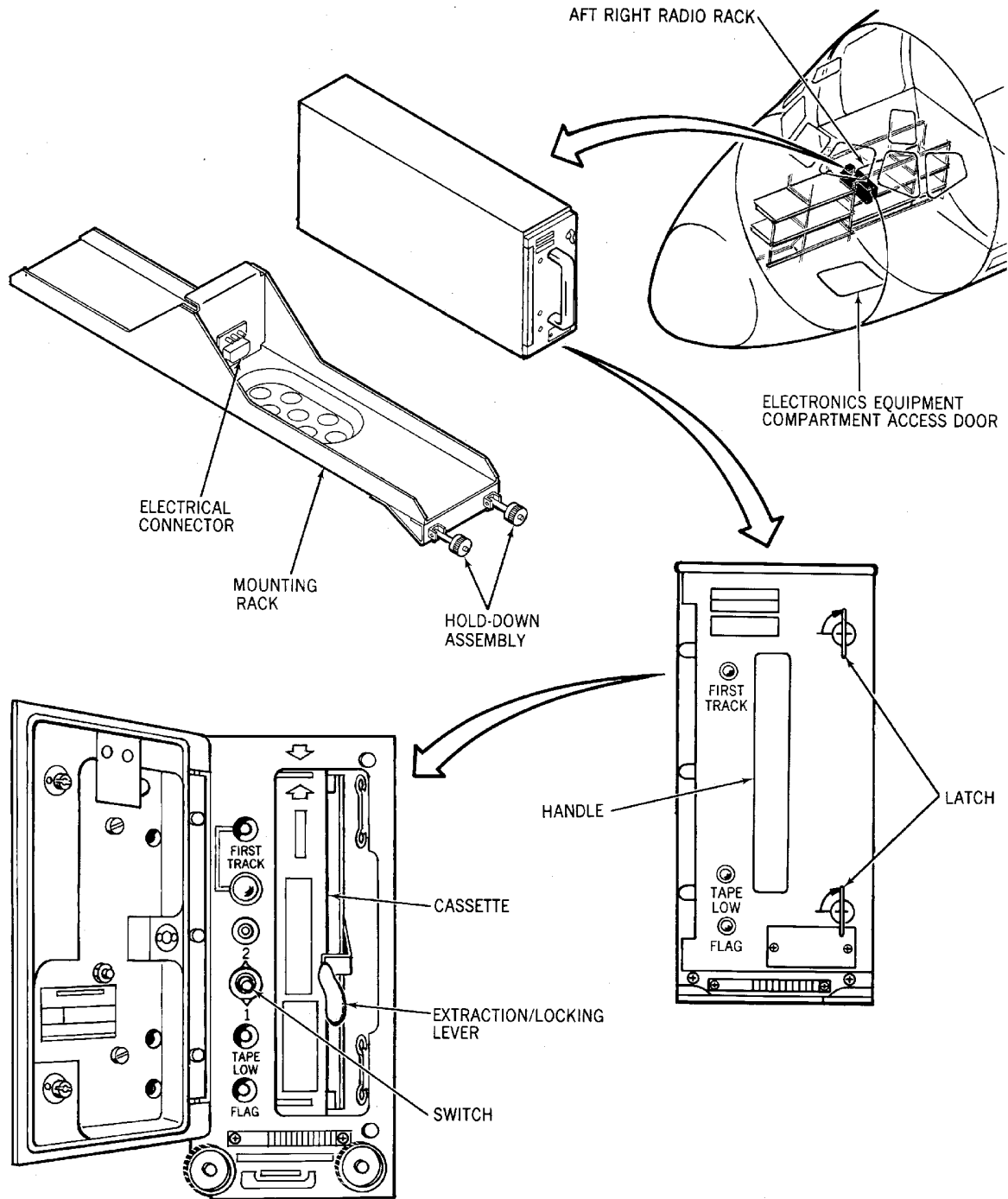
- (2) Insert cassette into PMR.
- (3) Secure cassette by placing red lever fully down.
- (4) Close outer door and secure latches.
- (5) Remove the safety tag and close this circuit breaker:

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	B10-328	DIGITAL AIDS RECORDER & MCU

- (6) Provide electrical power. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)
- (7) Check that TAPE LOW and FLAG indicators are off.

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BBB2-31-505A

Performance Maintenance Recorder -- Removal/Installation
Figure 201/31-31-11-990-801

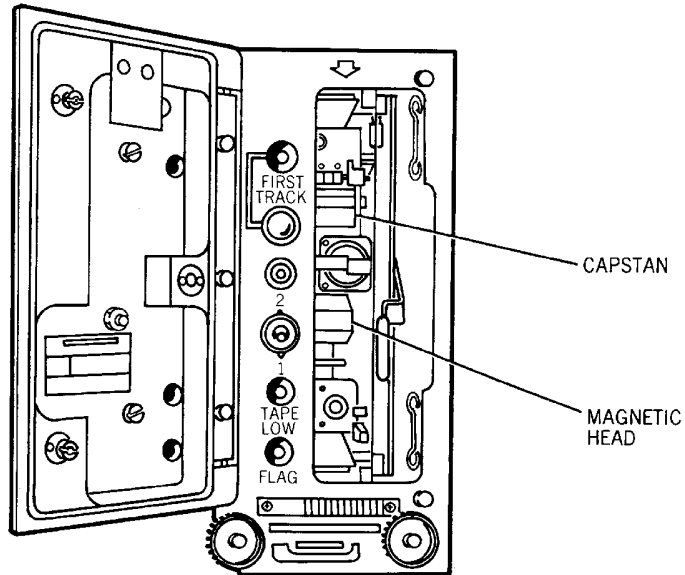
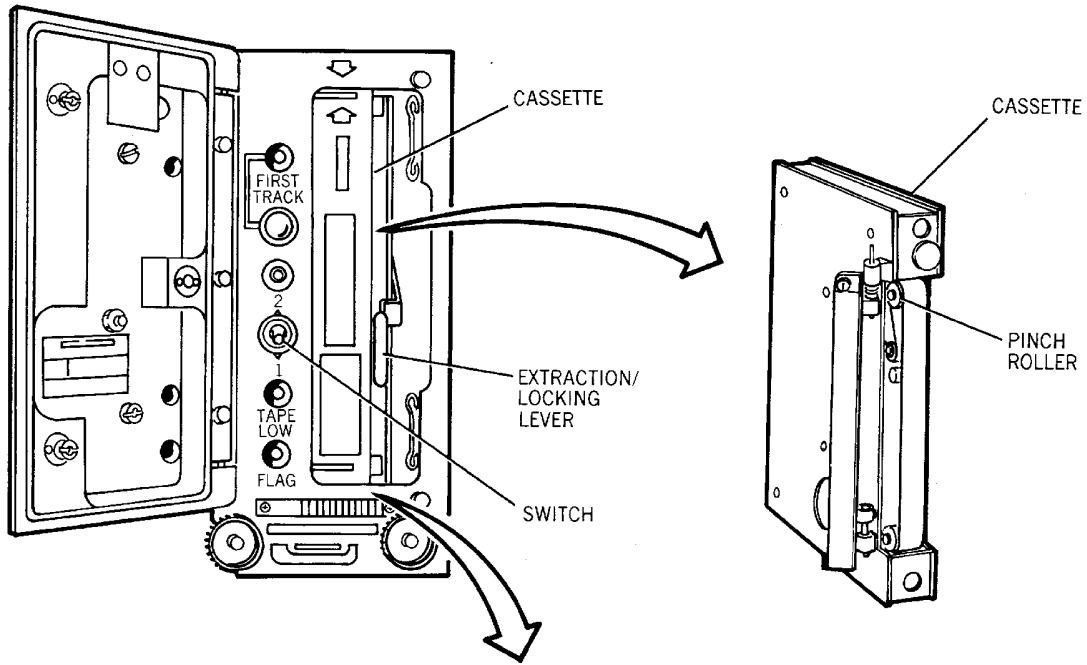
EFFECTIVITY
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BBB2-31-616

Performance Maintenance Recorder -- Cleaning
Figure 202/31-31-11-990-802

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WJE 406

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UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides servicing, removal/ installation, and adjustment/test procedures for the flight recorder underwater locator beacon.
- B. The underwater locator beacon is located on the front panel of the flight recorder in the aft accessory compartment.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Table 201

Name and Number	Manufacturer
Freon DPM 157	
Lubricant, (810-346) DPM 5367	Dukane
Multimeter, Fluke (Model 8025A)	Fluke
Split hose	
Test set, ultrasonic (42A12 series)	Dukane
Ocilloscope, Tektronic model 503, 504, or 5440	Tektronic Inc.
Test set, acoustic ATS-260	Datasonics
Test set, Pinglite (PL-3)	DuKane
Tester, Pinglite (Model PL1)	Dukane
Torque wrench (0 to 100 inch-pound range)	Commercially available
Wrench, spanner, (810-325)	Fairchild

3. Servicing Underwater Locator Beacon

- A. Replace Battery

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CAUTION: BATTERY REPLACEMENT SHOULD BE ACCOMPLISHED IN A DUST-FREE AREA.

- (1) Hold body of beacon with split hose and remove end cap marked "BATTERY ACCESS" with spanner wrench.
- (2) Remove shock cushion and O-ring from end cap. Discard O-ring.
- (3) Remove battery.

NOTE: If shock cushion surrounding battery comes out, re-install immediately.

- (4) Install new battery replacement date label, enclosed with new battery, on beacon body.

CAUTION: MAKE SURE THE POLARITY IS CORRECT. INCORRECT POLARITY CAN CAUSE PERMANENT DAMAGE TO THE BEACON.

- (5) Install new battery with end marked "INSERT THIS END" first as indicated by arrow.

WARNING: FREON IS AN AGENT THAT IS AN ASPHYXIANT AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS LISTED BELOW WHEN FREON IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET FREON IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (6) Clean thread and O-ring groove in beacon body and end cap by wiping thoroughly with freon.

WARNING: LUBRICANT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LUBRICANT IS USED.

- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET THE LUBRICANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.

WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

CAUTION: FOREIGN MATTER CAN DAMAGE THREADS OR ALLOW WATER LEAKAGE.

- (7) Apply thin coating of lubricant on new O-ring and install in groove of end cap.
- (8) Install shock cushion on end cap.

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WJE ALL

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- (9) Lubricate threads of end cap and install in beacon body. Tighten with hand force on spanner wrench only.
- (10) Perform adjustment/test (Paragraph 5.).

4. Removal/Installation Underwater Locator Beacon

A. Remove Beacon

CAUTION: DO NOT CLAMP IN VISE.

- (1) Remove four screws and washers from mounting bracket.
- (2) Remove beacon from mounting cradle.

B. Install Beacon

- (1) Prior to beacon installation, make certain that battery has at least three months remaining, if not, replace beacon battery (Paragraph 3.).
- (2) Make certain beacon case and switch are free of grease film.
- (3) Install beacon so markings and battery replacement date label can be read with switch end down.
- (4) Install flat washer and screw on mounting bracket and tighten to torque of 50 to 60 inch-pounds (5.65 to 6.78 N·m).
- (5) Perform adjustment/test Paragraph 5..

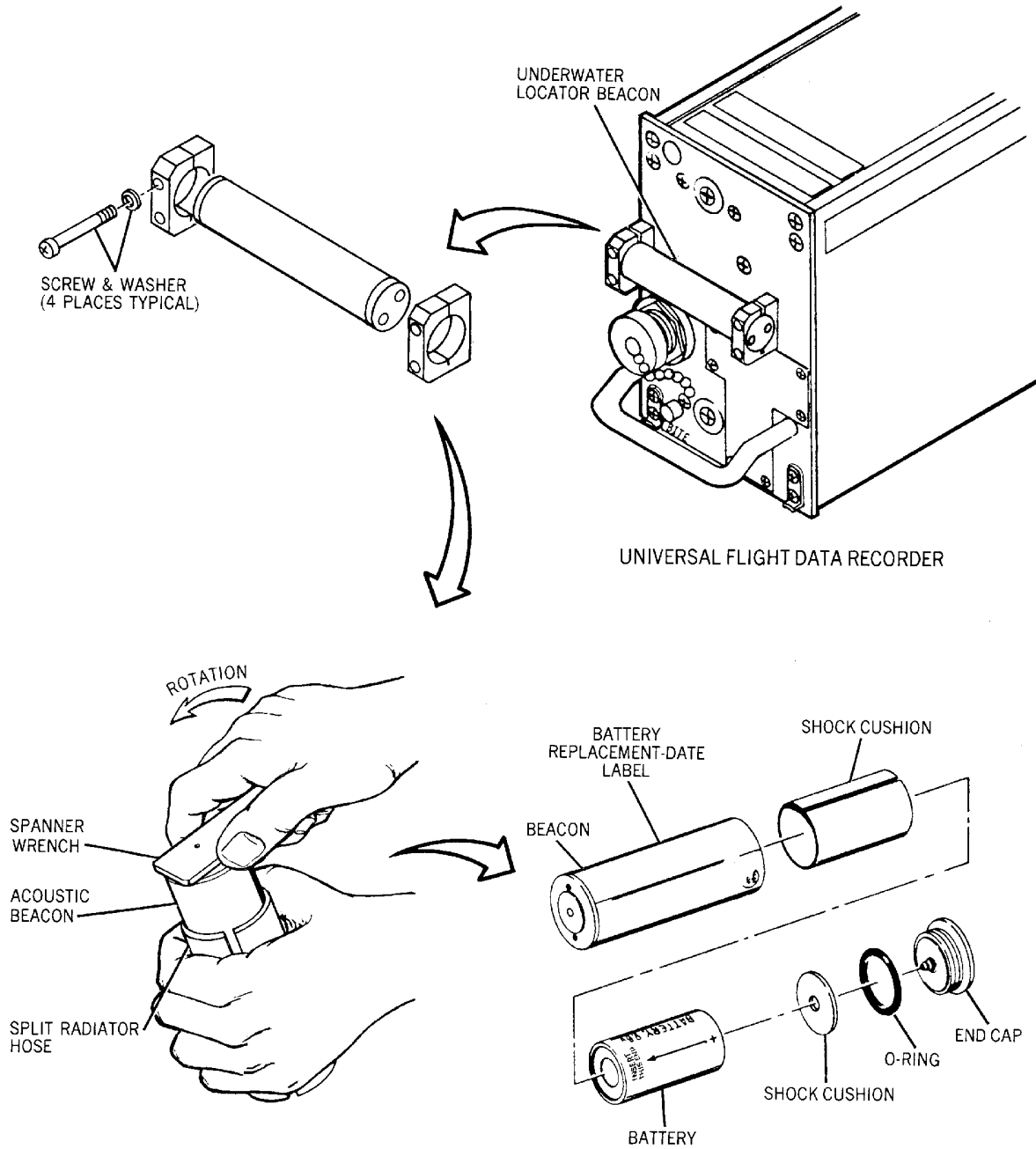
EFFECTIVITY
WJE ALL

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BBB2-31-569A

Underwater Locator Beacon - Removal/Installation
Figure 201/31-31-12-990-801 (Sheet 1 of 3)

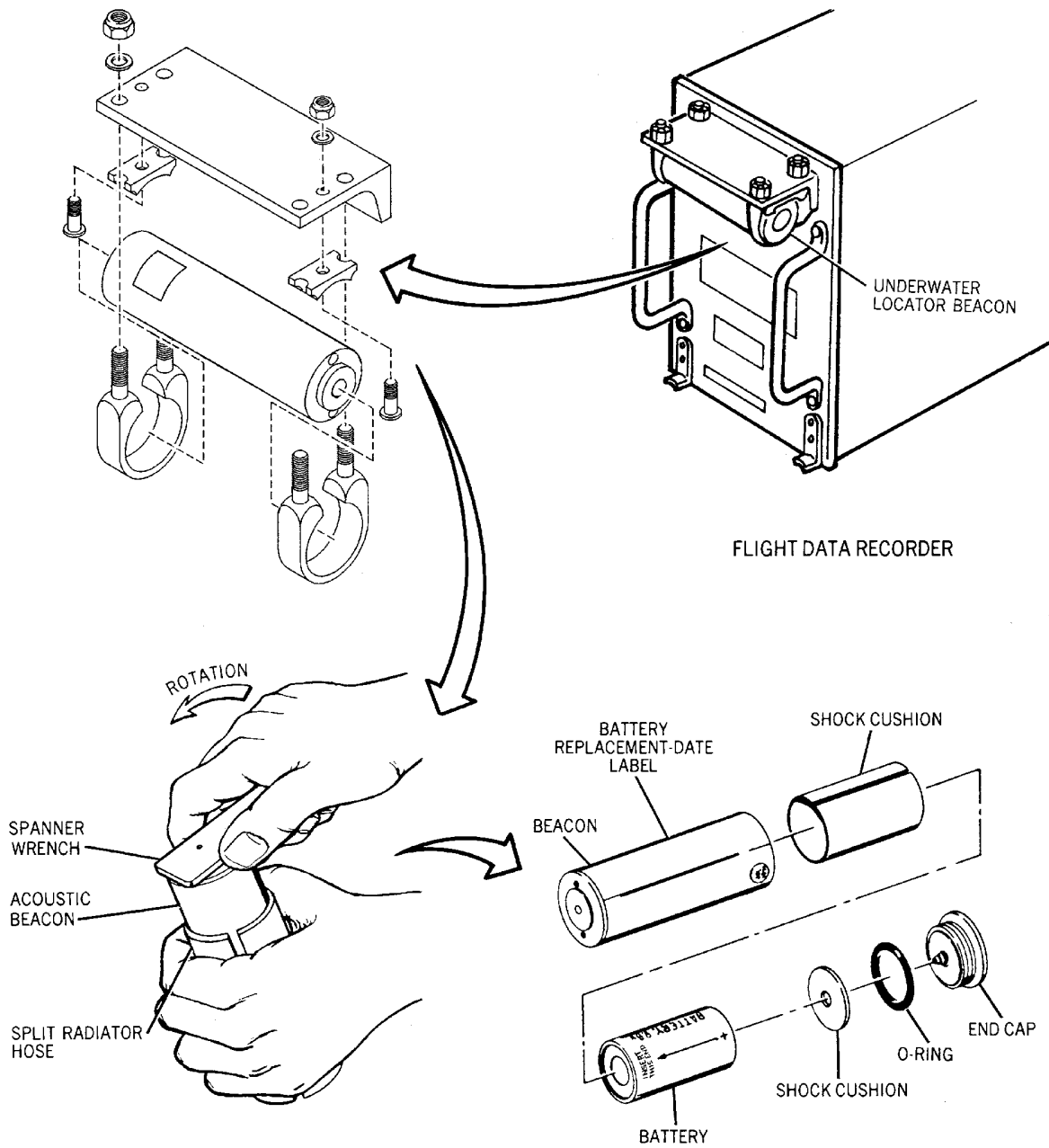
EFFECTIVITY
WJE 401-406, 409, 410, 412, 414-427, 429, 861-866,
868, 869, 871-879, 881, 883, 884, 891-893

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BBB2-31-791A

Underwater Locator Beacon - Removal/Installation
Figure 201/31-31-12-990-801 (Sheet 2 of 3)

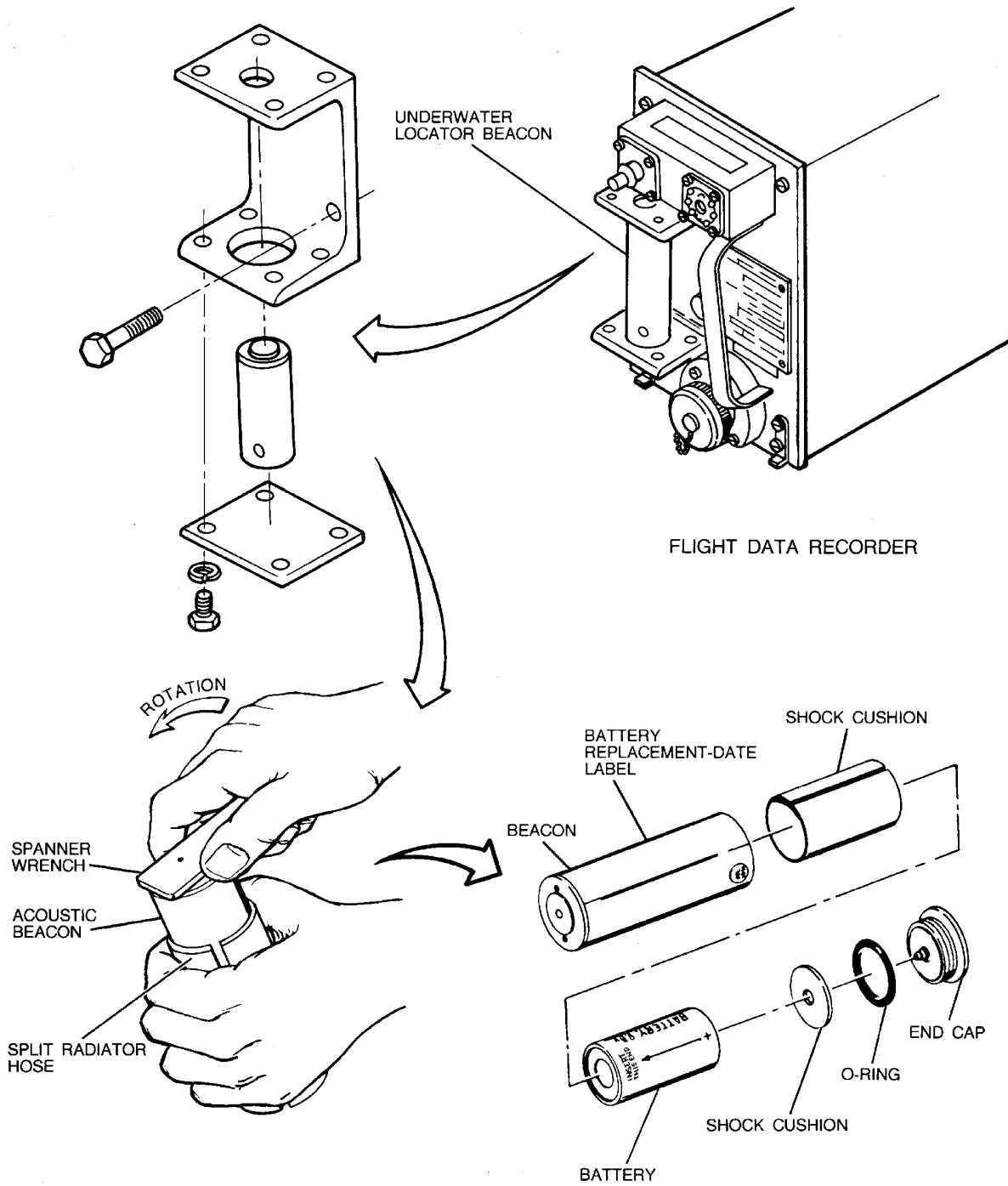
EFFECTIVITY
WJE 407, 408, 411, 880

TP-80MM-WJE

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BBB2-31-1032

Underwater Locator Beacon - Removal/Installation
Figure 201/31-31-12-990-801 (Sheet 3 of 3)

EFFECTIVITY
WJE 886, 887

TP-80MM-WJE

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5. Adjustment/Test Underwater Locator Beacon

A. Test Beacon

NOTE: This Adjustment/Test must only be accomplished following on-aircraft change of the Underwater Locator Beacon Battery. If batteries are changed in the shop, an equivalent Adjustment/Test of the Underwater Locator Beacon Battery must be accomplished in the shop.

NOTE: Any of the Adjustment/Test methods of the underwater locator beacon test may be used.

(1) Perform operational test using ultrasonic test set as follows (Figure 202):

NOTE: An Ultrasonic test set 42A12 (series) is used to test DK100, DK120 and ELP-362D Underwater Locator Beacon (ULB).

- (a) Place input selector switch in ultrasonic test set in INT position.
- (b) Set tuning control between 35 and 45 kHz. Activate test set by jingling keys near microphone.
- (c) Using flexible conductor, establish temporary short across beacon water switch (across center pin to case). Tune test set for best signal.
- (d) Determine pulse rate by counting pulses for 10 seconds and divide by 10. Pulse repetition should be approximately one pulse per second.
- (e) Show the output display on a calibrated oscilloscope to identify the pulse duration.
- (f) To find the approximate frequency of operation, tune test set for zero beat with the acoustic signal and read the frequency of the dial setting.

NOTE: Operation in air will yield a slower pulse repetition rate and a longer pulse duration.

- A rapid or accelerating pulse rate indicates an expired battery.
- If normal operation does not occur after installation of new battery, or physical damage is apparent, replace the beacon.

(2) Perform operational test using Pinglite tester PL1 as follows (Figure 203):

NOTE: A Pinglite Tester model (PL-1) is used to test DK100 ULB only.

- (a) Using flexible conductor, establish temporary short across beacon water switch (across center pin to case).
- (b) Press end of Pinglite tester PL1 to beacon body approximately one inch (25.4 mm) from switch end.
- (c) Depress and hold, PUSH TO OPERATE, switch on Pinglite tester PL1. BEACON ACTIVE WHEN FLASHING light will flash with each output pulse of beacon indicating beacon is operating. Release switch.

(3) Perform the operational test using Pinglite test set PL-3 as follows (Figure 205):

NOTE: A Pinglite (PL-3) test set is used to test DK100 and DK120 ULB only.

- (a) Remove velcro collar from PL-3 test set.
- (b) Put spring end of PL-3 on water switch end of ULB, make sure center spring touches water switch pin.
- (c) Listen for 3-4 audible pings and LED indicator will flash to indicate a good battery.

(4) Perform the operational test using ATS-260 acoustic test set as follows (Figure 206):

NOTE: An Acoustic Test Set ATS-260 is used to test an ELP-362D ULB only.

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- (a) Attach cable clip directly to ELP-362D housing.

NOTE: You do not have to remove the ELP-362D from the mounting frame to conduct the test.

- (b) Push and hold PUSH TO TEST switch.
- (c) Apply ATS-260 probe to center of ELP-362D end cap labeled KEEP CLEAN.
- (d) Check battery condition by observing green and red indicators on ATS-260 tester.
- If green indicator is on, battery is good.
 - If red indicator is on, battery should be replaced.
 - A flashing amber light and audible tone shows the battery is operating properly.
 - When the amber light is not flashing and no tone is heard, the battery is not operating properly.

- (5) With a multimeter perform ULB battery test as follows:

NOTE: Use a multimeter with an impedance of 10 megohms to perform this test.

- (a) Clean ULB case and water switch with mild detergent and soft cloth.
- (b) Put negative (-) lead of multimeter on water switch pin and positive (+) lead on ULB case, or the mounting kit if installed.
- (c) Read the multimeter. Check the battery CODE on the ULB label. Minimum acceptable voltage for the DK100 is 7.10V with no code, 3.55V with Code A, 3.00V with code B, and 2.97 with codes C or D. If the battery voltage is below the minimum acceptable voltage, replace the battery Paragraph 3.A., or replace the ULB Paragraph 4..
- (6) Perform off-current test procedures with multimeter as follows (Figure 204):
- (a) Off-Current Test - Connect test leads of multimeter (Figure 204). Check for current leakage between battery and beacon body. Leakage should be less than two microamperes.
- 1) One milliampere of Off-Current will exhaust a new battery in 30 to 40 days. Beacons with greater than two microamperes of Off-Current should be replaced Paragraph 4.. Such units are not field repairable but can be rebuilt by the manufacturer.

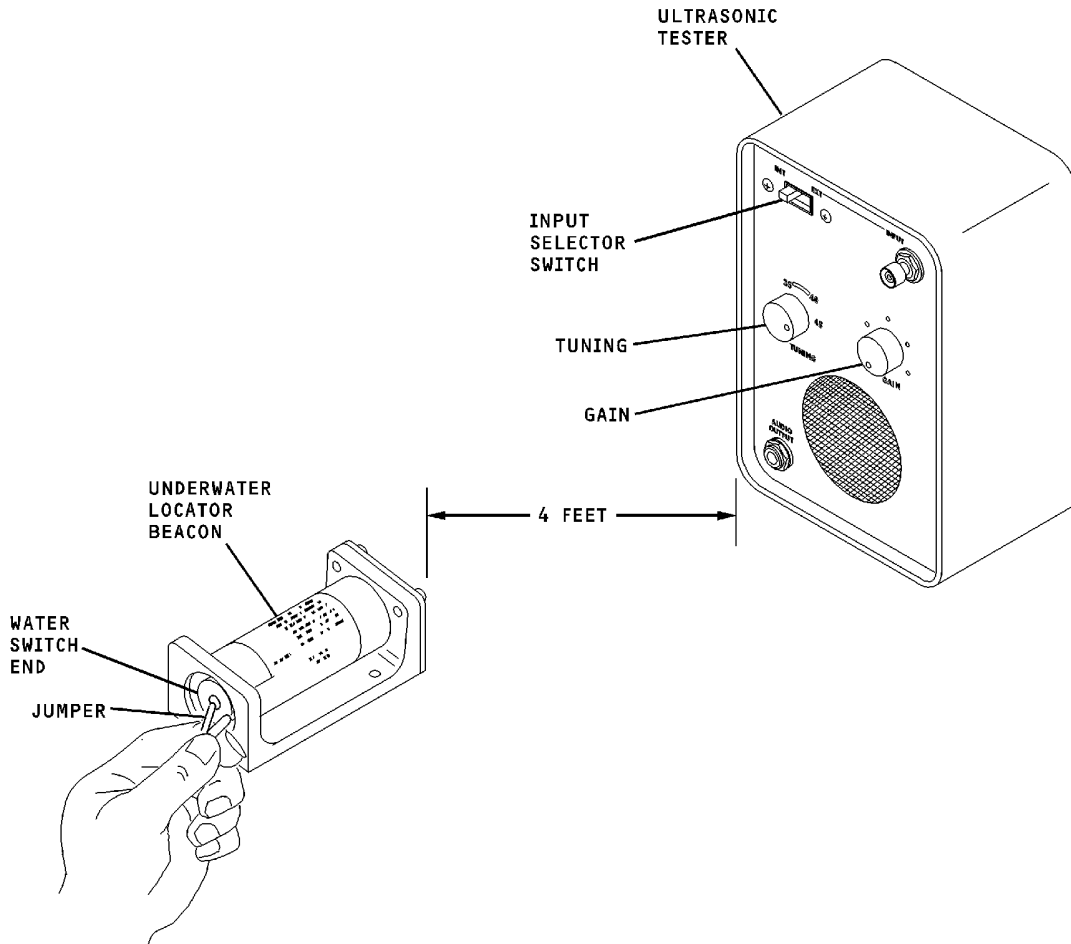
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WJE ALL

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CAG(IGDS)

BBB2-31-1764

Ultrasonic Test Set
Figure 202/31-31-12-990-802

EFFECTIVITY
WJE ALL

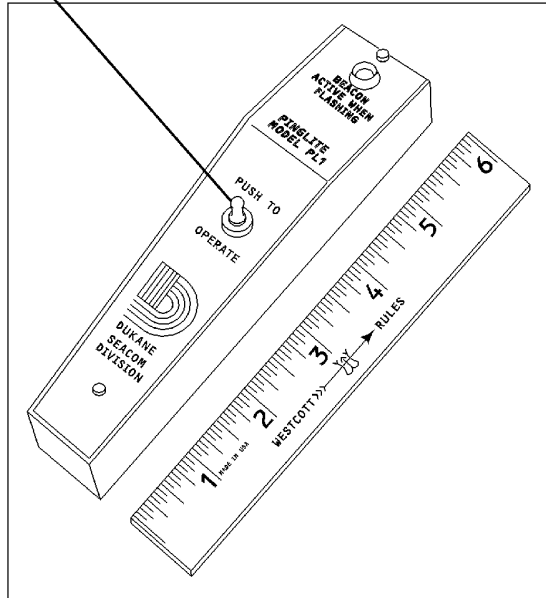
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PUSH TO OPERATE SWITCH

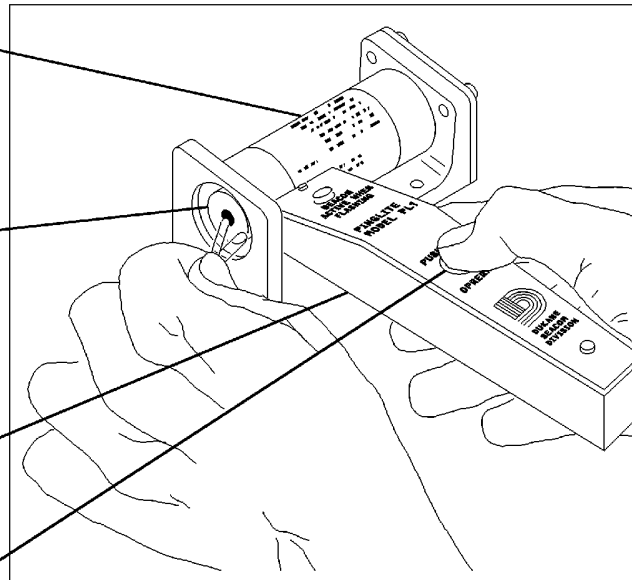


UNDERWATER LOCATOR BEACON

WATER SWITCH END

PINGLITE TESTER PL 1

PUSH TO OPERATE SWITCH



CAG(IGDS)

BBB2-31-851A

**Test Point of the Pinglite Tester PL1
Figure 203/31-31-12-990-803**

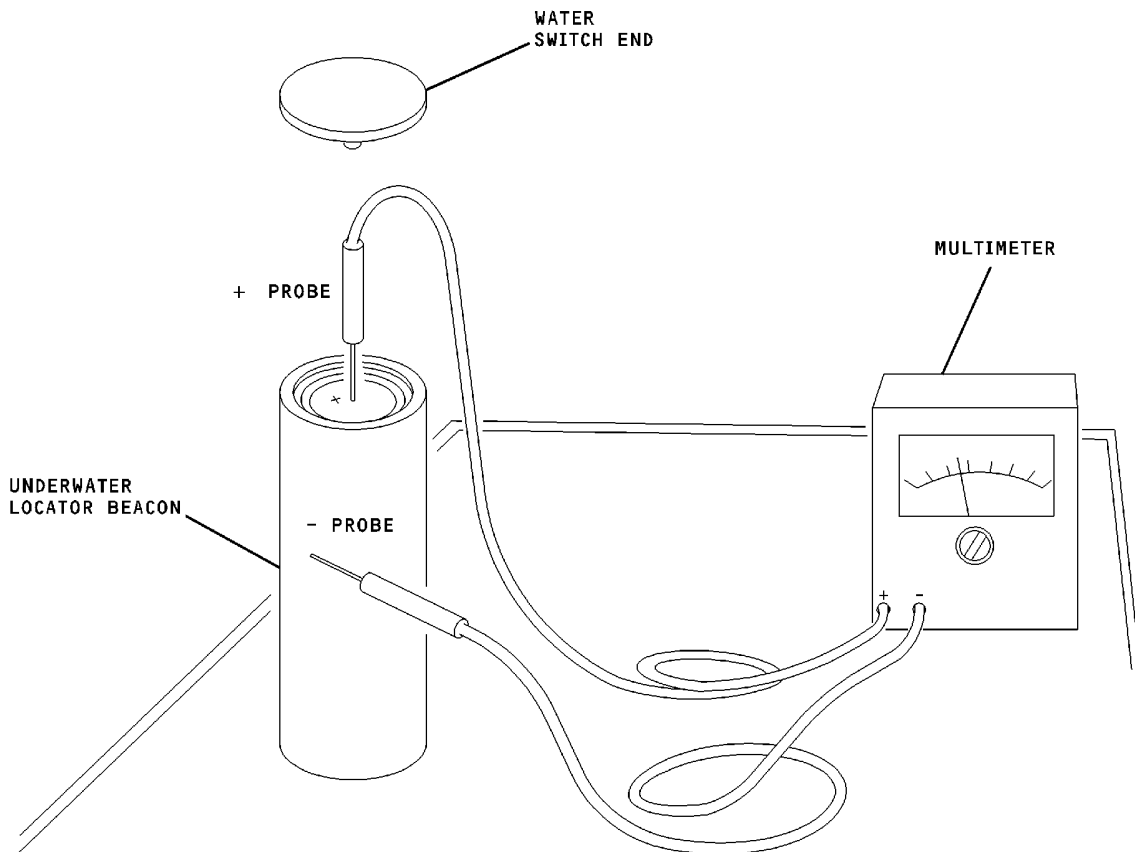
EFFECTIVITY
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CAG(IGDS)

BBB2-31-852A

Off Current Test
Figure 204/31-31-12-990-804

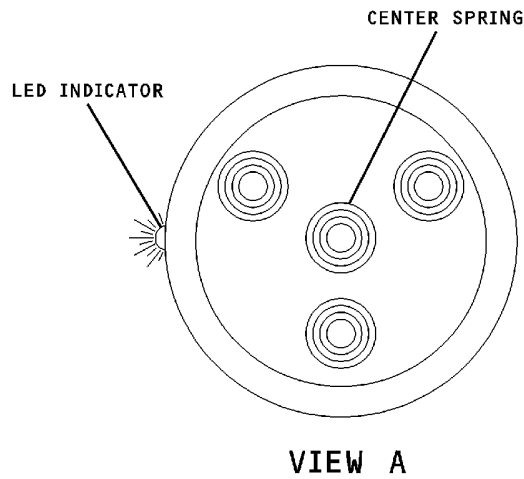
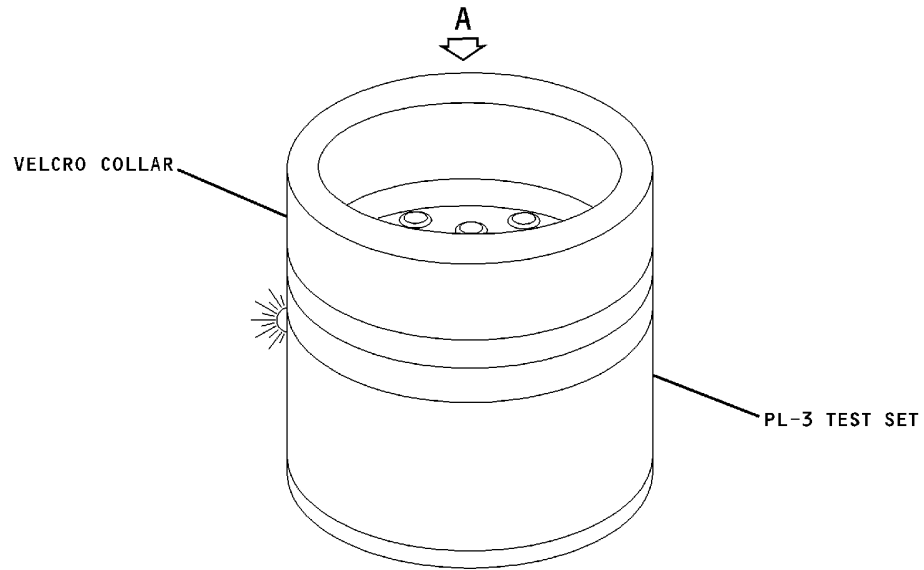
EFFECTIVITY
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CAG(IGDS)

BBB2-31-1765

Pinglite Test Set PL-3
Figure 205/31-31-12-990-805

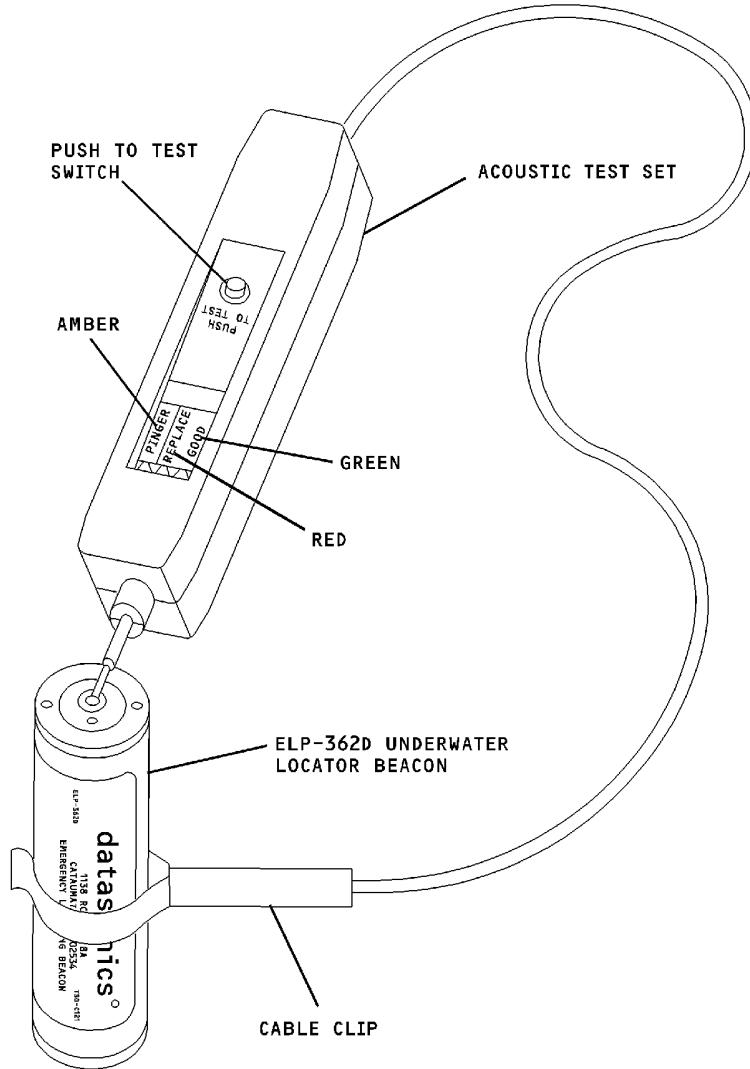
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CAG(IGDS)

BBB2-31-1766

Acoustic Test Set ATS-260
Figure 206/31-31-12-990-806

EFFECTIVITY
WJE ALL

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UNDERWATER LOCATOR BEACON - REMOVAL/INSTALLATION

1. General

A. This procedure contains MSG-3 task card data.

TASK 31-31-12-901-801

2. Discard the Flight Data Recorder Underwater Locator Beacon Battery

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
31-31-12 P/B 201 Config 1	UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES
52-30-00 P/B 001 Config 1	CARGO - DESCRIPTION AND OPERATION

B. Prepare to Discard the Flight Data Recorder Underwater Locator Beacon Battery

SUBTASK 31-31-12-010-001

(1) Open the aft cargo compartment door. (CARGO - DESCRIPTION AND OPERATION, PAGEBLOCK 52-30-00/001 Config 1)

SUBTASK 31-31-12-010-002

(2) Open access panel.

C. Discard the Flight Data Recorder Underwater Locator Beacon Battery

SUBTASK 31-31-12-020-001

(1) Remove the flight data recorder underwater locator beacon battery. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-12/201 Config 1)

SUBTASK 31-31-12-901-001

(2) Discard the flight data recorder underwater locator beacon battery.

SUBTASK 31-31-12-410-001

(3) Install the flight data recorder underwater locator beacon battery. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 31-31-12/201 Config 1)

D. Job Close-up

SUBTASK 31-31-12-410-003

(1) Close access door.

SUBTASK 31-31-12-942-001

(2) Remove all the tools and equipment from the work area. Make sure the area is clean.

SUBTASK 31-31-12-410-002

(3) Close the cargo compartment door. (CARGO - DESCRIPTION AND OPERATION, PAGEBLOCK 52-30-00/001 Config 1)

————— **END OF TASK** —————

EFFECTIVITY WJE ALL	
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CENTRAL AURAL WARNING - DESCRIPTION AND OPERATION

1. General

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- A. The central aural warning system provides distinctive aural and vocal indications when critical or potentially hazardous conditions exist, thus alerting the flight crew of the need for immediate attention or action. The system provides voice messages stored digitally on read only memory modules to supplement some of the tone warnings. Each voice message is preceded by an associated warning tone. The voice message and its associated tone warning is cycled one second tone, then followed by one second voice message, for the duration of the warning period.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

NOTE: The volume level of the voice messages is dependent on the unit that is installed. Earlier aircraft, that have CAWS unit P/N H05A0035-3 or -4 installed, have a single volume level that is noticeably louder than the P/N H05A0035-10 unit (installed on later aircraft). The -10 unit has three levels of audio output. These levels are based on aircraft flight mode as follows: level 3 (low) is attained on the ground (landing gear down) with airspeed less than 50 knots; level 2 (medium) is attained in flight with landing gear up; level 1 (loudest) is attained with airspeed greater than 50 knots with landing gear down. MD-80 Service Bulletin 31-40, in conjunction with MDESC Service Bulletin 31-3, has been issued to provide modification information for the -3 and -4 units to produce three reduced levels like the -10.

WJE 886, 887, 892

- B. The central aural warning system provides distinctive aural indication when critical or potentially hazardous conditions exist, thus alerting the flight crew of the need for immediate attention or action. The tone warning is cycled one second tone for the duration of the warning period.

WJE ALL

2. Description

- A. Components of the Central Aural Warning System include the central aural warning unit located on the forward right radio rack in the electrical/electronics compartment and two speakers located, one each, in the captain's and first officer's consoles.
- B. The central aural warning unit is completely solid state and is housed in a standard 1/2 short ATR case, with a rotary TEST SELECT switch, and a MALFUNCTION warning light, a PUSH TO TEST switch, mounted on the front panel (Figure 1). Within the case are five printed circuit cards for the following:
- Signal conditioning
 - Microprocessor control
 - Solid state memory for aural and vocal warnings
 - Audio output
 - Redundant supplementary stall recognition system (SSRS) board.
- C. There are twelve defined warning channels which are described as follows:
- (1) Fire Warning

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal warning is activated when a fire is detected by the fire protection system in any one or more engines or the APU. Reset capabilities are provided in the engine fire detection system, the APU fire warning cancels after three cycles.

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WJE 886, 887, 892

- (b) Aural warning is activated when a fire is detected by the fire protection system in any one or more engines or the APU. Reset capabilities are provided in the engine fire detection system, the APU fire warning cancels after three cycles.

WJE ALL

- (2) Overspeed Warning
 - (a) Overspeed Condition

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- 1) Aural and vocal warning is activated when an overspeed condition is detected by either air data computer. An overspeed condition exists with the following requirements.
 - a) Maximum allowable airspeed (VMO) exceeded.
 - b) Altitude valid.
 - c) Airspeed valid.

NOTE: Overspeed warning is not activated for air data computer failures. A MAX SPD WARN TEST switch on the forward overhead switch panel is provided for testing audible and vocal portion of overspeed warning system.

WJE 886, 887, 892

- 2) Aural warning is activated when an overspeed condition is detected by either air data computer. An overspeed condition exists with the following requirements.
 - a) Maximum allowable airspeed (VMO) exceeded.
 - b) Altitude valid.
 - c) Airspeed valid.

NOTE: Overspeed warning is not activated for air data computer failures. A MAX SPD WARN TEST switch on the forward overhead switch panel is provided for testing the audible portion of overspeed warning system.

WJE ALL

- (3) Landing Gear Warning
 - (a) Unsafe Landing Condition.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

Aural and voice warning is activated by an unsafe landing configuration and is defined by either of the following conditions:

WJE 886, 887, 892

Aural warning is activated by an unsafe landing configuration and is defined by either of the following conditions:

WJE ALL

- 1) Gears not down and locked and flaps in approach configuration (over 28.5° flaps).

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- 2) Gears not down and locked, throttle(s) in idle position, airspeed less than 210 knots, altitude less than 1200 feet. Aural warning can be manually silenced in this condition if flaps are not in approach configuration (less than 28.5°).

WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

- 3) Gears not down and locked, throttle(s) in idle position, airspeed less than 210 knots. Aural warning can be manually silenced in this condition if flaps are not in approach configuration (less than 28.5°).

WJE ALL

- (4) Takeoff Warning
 - (a) Activation.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

Aural and voice warning is activated when the following conditions exist:

WJE 886, 887, 892

Aural warning is activated when the following conditions exist:

WJE ALL

- 1) Aircraft on the ground.

WJE 401-403, 405, 409, 412, 873, 874, 880, 881, 883, 884, 892 PRE MD80-31-034; WJE 404 PRE MD80-31A037

- 2) Either throttle advances.

WJE 404 POST MD80-31A037

- 3) Both throttles advance.

WJE ALL

- 4) Any one or combination of the following:
 - a) Slats not in takeoff position.
 - b) Spoiler extended.
 - c) Flaps not in takeoff position.
 - d) Horizontal stabilizer not in green band position.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- e) Park brake not released.

WJE 401-404, 412, 414, 875-879

- f) Autobrake not in takeoff position.

WJE 405, 406, 409, 410, 881, 883, 884

- g) On some aircraft with auto brake system, autobrake not in takeoff position.

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 886, 887, 892, 893

- 5) Park brake not released.

WJE ALL

- (5) Cabin Altitude Warning

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal warning is activated when cabin low pressure sensor detects a cabin pressure exceeding the 10,000 foot level. Aural warning is automatically reset after 5 seconds. Reset is cancelled when cabin pressure decreases below the 10,000 foot level.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891, 892

- (b) Aural warning is activated when cabin low pressure sensor detects a cabin pressure exceeding the 10,000 foot level. Aural warning is automatically reset after 5 seconds. Reset is cancelled when cabin pressure decreases below the 10,000 foot level.

WJE ALL

- (6) Autopilot Disconnect

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal warning is activated when either autopilot is disengaged. Reset capability is available by pressing the AP disconnect button.

WJE 886, 887, 892

- (b) Aural warning is activated when either autopilot is disengaged. Reset capability is available by pressing the AP disconnect button.

WJE ALL

- (7) Horizontal Stabilizer in Motion

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (a) Aural warning is activated when the stabilizer movement is one-half degree or more from a given rest position and every half degree thereafter. Vocal warning is activated if stabilizer motion is not pilot initiated; however, on some aircraft the vocal warning is activated if the suitcase handles or the alternate trim levers, or both, are used to control the stabilizer. No reset is provided within the aural warning unit.

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 893

Aural warning is activated when the stabilizer movement is one degree or more from a given rest position and every half degree thereafter. Vocal warning is activated if stabilizer motion is not pilot initiated; however, on some aircraft the vocal warning is activated if the suitcase handles or the alternate trim levers, or both, are used to control the stabilizer. No reset is provided within the aural warning unit.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

NOTE: The words STABILIZER MOTION will follow sounding of the horn if four inputs are received within 30 seconds and the flight crew is not using the primary trim switch. The voice warning will continue until the stabilizer stops moving (no inputs for a 10 second period).

WJE 886, 887, 892

- (b) Aural warning is activated when the stabilizer movement is one degree or more from a given rest position and every half degree thereafter. No reset is provided within the aural warning unit.

WJE ALL

- (8) Altitude Alert Annunciation

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WJE ALL

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal annunciation is activated when either altitude alert system detects deviation from a preselected altitude. Aural warning unit annunciates the first alert signal received but not the signal from the other systems if the signal occurs within 5 seconds of each other.

WJE 886, 887, 892

- (b) Aural annunciation is activated when either altitude alert system detects deviation from a preselected altitude. Aural warning unit annunciates the first alert signal received but not the signal from the other systems if the signal occurs within 5 seconds of each other.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (9) Evacuation Alert
 - (a) Aural annunciation is activated to alert the flight and cabin crew members of an emergency evacuation situation. Vocal warning is also activated in the flight compartment.

WJE ALL

- (10) Slats Extended (Overspeed) Warning

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal annunciation is activated when the slats are in the extended position and airspeed exceeds 280 (± 2.5) knots. No reset capability is provided in the aural warning unit.

WJE 886, 887, 892

- (b) Aural annunciation is activated when the slats are in the extended position and airspeed exceeds 280 (± 2.5) knots. No reset capability is provided in the aural warning unit.

WJE ALL

- (11) Speed Brake Warning

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal annunciation is activated when the flaps and spoilers are extended and the aircraft is in the flight mode.

WJE 886, 887, 892

- (b) Aural annunciation is activated when the flaps and spoilers are extended and the aircraft is in the flight mode.

WJE ALL

- (12) Supplementary Stall Recognition (SSRS)

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (a) Aural and vocal annunciation is activated when the stall warning computer senses a stall condition. STALL lights located on the glareshield will come on and flash.

WJE 886, 887, 892

- (b) Aural annunciation is activated when the stall warning computer senses a stall condition. STALL lights located on the glareshield will come on and flash.

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WJE 401-406, 409, 410, 412, 414, 875-879, 881, 883, 884

WJE 401-404, 410, 412, 414, 875-879, 881, 883

(13) Autobrake Warning

WJE 405, 406, 409, 884

Autobrake Warning (Effective on some aircraft)

WJE 401-406, 409, 410, 412, 414, 875-879, 881, 883, 884

(a) Aural and voice annunciation should be activated when the following conditions exist:

- 1) Aircraft on the ground.
- 2) Either throttle advanced.
- 3) Any one or combination of the following:
 - a) autobrake armed and autospoilers not armed.
 - b) autospoilers armed and autobrake not armed.

WJE ALL

3. Operation

- A. Normal operation of the central aural warning system will occur when the 28 vdc buses are energized and the circuit breakers are closed. Input signals supplied to the central aural warning unit from various systems monitored are warnings for critical or potentially hazardous conditions. The input signal may be from a switch sensor or relay closure and the warnings will be annunciated aurally and in some instances, vocally, in both the left console and right console speakers.
- B. A warning light on the face of the aural warning unit and on the overhead switch panel comes on to indicate a failure of the unit.

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891, 892

NOTE: If light comes on the aural warning unit and not the annunciator panel, this indicates the fault no longer exists, but the aural warning unit must be bench checked to reset the malfunction light (internal reset switch). If any of the thirty-four (34) input buffers or their sensors are non-functioning, this will have no effect on the malfunction light and will not cause it to come on.

WJE 410, 873, 874, 893

NOTE: When light comes on, the aural warning unit must be removed and bench checked to reset malfunction light. If light comes on the aural warning unit and not the annunciator panel, this indicates the fault no longer exists, but the aural warning unit must be bench checked to reset the malfunction light (internal reset switch). If any of the thirty-four (34) input buffers or their sensors are non-functioning, this will have no effect on the malfunction light and will not cause it to come on.

WJE ALL

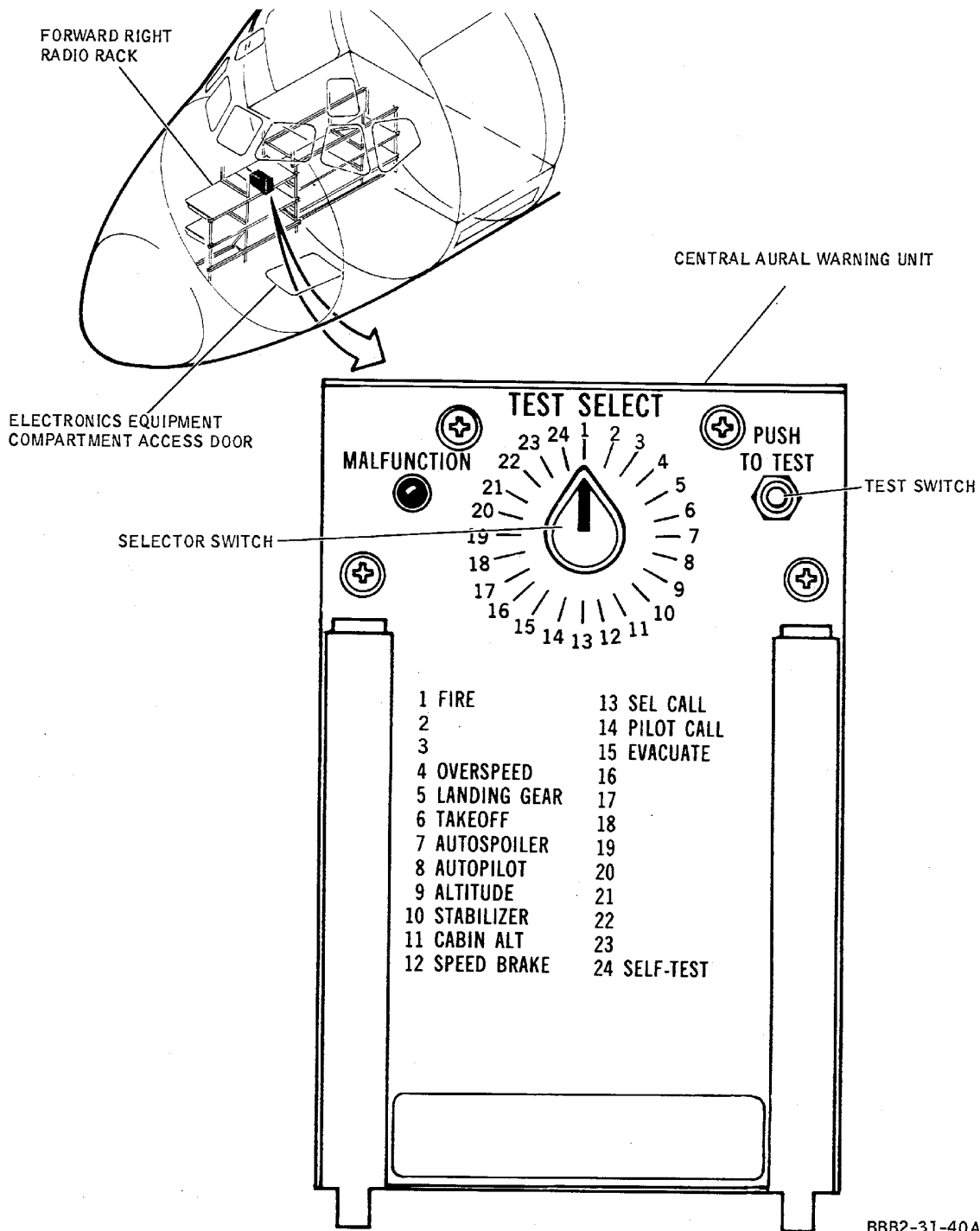
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**Central Aural Warning
Figure 1/31-51-00-990-801**

EFFECTIVITY
WJE 401-411, 415-427, 429, 861-866, 868, 869,
871-881, 883, 884, 886, 887, 891-893

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CENTRAL AURAL WARNING - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides test procedures to insure that applied power is connected to the correct pins of the central aural warning unit. The schematic diagrams are also in this section. (Figure 201 or Figure 202)
- B. Further checks to the central aural warning system, not included in the tests listed in this section, can be accomplished in the following Chapter/Sections of the maintenance manual: Altitude alert and autopilot disconnect, AUTOPILOT - MAINTENANCE PRACTICES, PAGEBLOCK 22-10-00/201 Config 1 or AUTOPILOT - MAINTENANCE PRACTICES, PAGEBLOCK 22-10-00/201 Config 3; takeoff warning, GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 27-00-00/201; horizontal stabilizer in motion, HORIZONTAL STABILIZER MOTION WARNING SENSOR - MAINTENANCE PRACTICES, PAGEBLOCK 27-40-11/201; landing gear, LANDING GEAR POSITION AND WARNING SWITCHES - MAINTENANCE PRACTICES, PAGEBLOCK 32-60-01/201; supplementary stall, STALL WARNING SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-19-00/201.

2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

Table 201

Name and Number	Manufacturer
Power Verification Tool	Commercially available
Test Adapter, CADC Remote (5963440-1)	Douglas Aircraft Co.
Test Set, Pitot-Static System with remote (TTU 205D)	Kollsman
Tester, Air Data	Commercially available

3. Adjustment/Test Central Aural Warning System (CAWS)

- A. Test Power Verification

NOTE: This test is performed to insure that applied power is connected to correct pins of central aural warning unit, thus preventing damage to central aural warning unit when system is energized.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

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LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- (2) Remove central aural warning unit, located in forward right radio rack.
(PAGEBLOCK 31-51-02/201)
- (3) Connect power verification tool to rack mounted connector.
NOTE: Selector switch should be in OFF position.
- (4) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
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OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	17	B10-105	RADIO ALTMETER-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- (5) Rotate selector switch on power verification tool to each position as follows and observe meter deflection:

Table 202

Selector Position		Deflection
CAWS	DC-1	24 VDC (±6)
CAWS	DC-2	24 VDC (±6)
CAWS	DC-3	24 VDC (±6)
A/S-1	VALID	24 VDC (±6)
A/S-2	VALID	24 VDC (±6)
ALT-1	VALID	24 VDC (±6)
ALT-2	VALID	24 VDC (±6)
OVERSPEED-1		24 VDC (±6)
OVERSPEED-2		24 VDC (±6)
FAIL OUT		22 VDC (±8)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (6) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
			WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893
R	37	B1-851	CAWS FAIL ANN

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WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893
(Continued)

(Continued)

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

C	1	B10-316	AIR DATA CMPTR-1
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UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	17	B10-105	RADIO ALTMETER-1
---	----	---------	------------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	12	B10-317	AIR DATA CMPTR -2
---	----	---------	-------------------

- (7) Remove power verification tool from rack mounted connector.
- (8) Install central aural warning unit. (PAGEBLOCK 31-51-02/201)
- (9) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB
---	----	--------	------------------------------------

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
---	----	--------	--

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893

R	37	B1-851	CAWS FAIL ANN
---	----	--------	---------------

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

C	1	B10-316	AIR DATA CMPTR-1
---	---	---------	------------------

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	17	B10-105	RADIO ALTMETER-1
---	----	---------	------------------

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UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

B. Test Fire Warning

NOTE: This test is performed to verify interface between fire detection sensors and central aural warning unit.

- (1) Set L. ENG loop selector switch on engine fire detection system to position "B".
- (2) Set R. ENG loop selector switch on engine fire detection system to position "A".
- (3) Set APU loop selector switch on engine fire detection system to position "A".
- (4) Loop B Test - Left Engine

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

Press and hold LOOP B TEST button on center instrument panel, check that fire warning bell sounds followed by words: "Fire Left Engine".

WJE 886, 887, 892

Press and hold LOOP B TEST button on center instrument panel, check that fire warning bell sounds.

WJE ALL

NOTE: Fire warning bell will decrease after three cycles.

- (5) Release LOOP B TEST button, check that fire warning silences.
- (6) Set L. ENG loop selector switch on engine fire detection system to position "A".
- (7) Set R. ENG loop selector switch on engine fire detection system to position "B".
- (8) Loop B Test - Right Engine

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

Press and hold LOOP B TEST button on center instrument panel, check that fire warning bell sounds followed by words: "Fire Right Engine".

WJE 886, 887, 892

Press and hold LOOP B TEST button on center instrument panel, check that fire warning bell sounds.

WJE ALL

NOTE: Fire warning bell will decrease after three cycles.

- (9) Release LOOP B TEST button, check that fire warning silences.

C. Test Overspeed Warning

NOTE: This test is performed to verify interface between overspeed sensors, air data computer and central aural warning unit.

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WJE ALL

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- (2) Connect CADC Remote Test Adapter P1 adapter plug to P4 connector on front panel of CADC-1 and P2 plug to P4 connector on front panel of CADC-2.

NOTE: All self-test switches in OFF position.

- (3) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- (4) Set CADC-1 FUNCTION TEST switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker sounds followed by word: "Overspeed".
- (5) Set CADC-1 FAILURE WARNING switch on adapter to ON position. Check that overspeed warning clacker silences.
- (6) Release PUSH TO TEST button on adapter, set CADC-1 FUNCTION TEST and FAILURE WARNING switches to OFF position.
- (7) Set MAX SPD WARN TEST switch on overhead panel to SYSTEM 1. Check that overspeed warning clacker sounds followed by word: "Overspeed".
- (8) Set MAX SPD WARN TEST switch to OFF position. Check that overspeed warning silences.
- (9) Set CADC-2 FUNCTION TEST switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker sounds followed by word: "Overspeed".
- (10) Set CADC-2 FAILURE WARNING switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker silences.
- (11) Release PUSH TO TEST button on adapter, set CADC-2 FUNCTION TEST and FAILURE WARNING switches to OFF position.
- (12) Set MAX SPD WARN TEST switch on Overhead Panel to SYSTEM 2. Check that overspeed warning clacker sounds followed by word: "Overspeed".
- (13) Set MAX SPD WARN TEST switch to OFF position. Check that overspeed warning silences.

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (14) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- (15) Remove CADC Remote Test Adapter from P4 connector on front panel of CADC-1 and CADC-2.

- (16) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

- D. Test Cabin Altitude Warning

NOTE: This test is performed to verify interface between cabin altitude pressure switch and central aural warning unit.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

- (2) Remove vent plug from cabin altitude pressure switch located at station 256-L.
- (3) Connect STATIC output of pitot-static test set to cabin altitude pressure switch.
- (4) Close STATIC VENT valve on pitot-static test set.
- (5) Close PITOT VENT valve on pitot-static test set.
- (6) Close STATIC SOURCE valve on pitot-static test set.

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- (7) Close PRESSURE SOURCE valve on pitot-static test set.
- (8) Using a suitable seal or cap, seal PITOT output fitting of pitot-static test set.
- (9) Open CROSS BLEED valve of pitot-static test set.
- (10) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

WJE 405-411, 875-881, 883, 884

NOTE: On aircraft equipped with a chime warning for cabin pressure, make certain the following circuit breaker is closed:

WJE 401-404, 406-408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875, 876, 878, 879, 881, 883, 891

- (11) Remove the safety tags and close these circuit breakers:

LOWER EPC, LEFT DC POWER

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	23	B1-560	CABIN PRESSURE CHIME

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	23	B1-560	CABIN PRESSURE CHIME

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

- (12) Place NO SMOKING and FASTEN SEAT BELT switches located on overhead switch panel in AUTO position.

WJE 875, 876

- (13) Place CHIME and SEAT BELTS switches located on pilot's overhead switch panel in AUTO position.

WJE 877-879

- (14) Place NO SMOKING and FASTEN SEAT BELT switches located on overhead switch panel in AUTO position.

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WJE ALL

CAUTION: BEFORE PERFORMING FOLLOWING STEP, VERIFY THAT GROUND LOCKS HAVE BEEN INSTALLED AND PROPERLY SECURED TO ALL THREE (3) LANDING GEARS.

- (15) Pull out landing gear selector handle, on pedestal, and move out of GEAR DN detent.
- (16) Pump test set vacuum pump and adjust VACUUM SOURCE valve to slowly increase altitude to 9,750(±250) feet (2971.3(±76.2) m).

NOTE: Do not exceed 3000 feet/min rate.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (17) Check that cabin altitude warning sounds followed by words: "Cabin Altitude".

WJE 886, 887, 892

- (18) Check that cabin altitude warning sounds.

WJE 401-412, 414, 873, 874, 880, 881, 883, 884, 886, 887, 892, 893

- (19) Check that NO SMOKING and FASTEN SEAT BELT signs in cabin come on.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (20) Check that NO SMOKING and FASTEN SEAT BELT signs in cabin are on and cabin chime sounds.

WJE 405-411, 875-881, 883, 884

- (21) Cabin chime should activate on aircraft with cabin chime.

WJE ALL

- (22) Check that CABIN ALT light on overhead annunciator panel comes on.
- (23) Check that MASTER WARNING light on glareshield comes on.
NOTE: Cabin altitude warning should silence after approximately 5 seconds.
- (24) Press MASTER WARNING light on glareshield and check that MASTER WARNING light on glareshield goes off.
- (25) Slowly open STATIC VENT valve on test set to decrease altitude to 9,250 (+750,-1250) feet (2819.4(+228.6, -381.0) m).
NOTE: Do not exceed 3000 feet/min rate.
- (26) Check that CABIN ALT light on overhead annunciator panel goes off.
- (27) Check that NO SMOKING and FASTEN SEAT BELT signs in cabin go off.
- (28) Slowly open STATIC VENT valve on test set to decrease altitude to 0(±250) feet (0(±76.2) m).

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (29) Open these circuit breakers and install safety tags:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING
W	30	B1-365	PASSENGER WARNING SIGNS

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LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING

LOWER EPC, LEFT DC POWER

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406-408, 411, 412, 414, 881, 883			
P	23	B1-560	CABIN PRESSURE CHIME

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 875, 876, 878, 879, 891			
P	23	B1-560	CABIN PRESSURE CHIME

WJE ALL

P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
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UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	23	B1-366	PASSENGER WARNING SIGNS

- (30) Move landing gear selector handle to GEAR DN detent.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 877-881, 883, 884, 886, 887, 891-893

- (31) Place NO SMOKING and FASTEN SEAT BELT switches located on overhead switch panel in OFF position.

WJE 875, 876

- (32) Place CHIME and SEAT BELT switches located on overhead switch panel in OFF position.

WJE ALL

- (33) Disconnect pitot-static test set from cabin altitude pressure switch.
 (34) Install vent plug to cabin altitude pressure switch.
 (35) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	21	B1-364	CABIN LOW PRESSURE WARNING
W	30	B1-365	PASSENGER WARNING SIGNS

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING

LOWER EPC, LEFT DC POWER

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406-408, 411, 412, 414, 881, 883			
P	23	B1-560	CABIN PRESSURE CHIME

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WJE 401-404, 406-408, 411, 412, 414, 881, 883 (Continued)

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 875, 876, 878, 879, 891			
P	23	B1-560	CABIN PRESSURE CHIME

WJE ALL

P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
---	----	--------	--

UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	23	B1-366	PASSENGER WARNING SIGNS

E. Test Slats Extended Warning

NOTE: This test is performed to verify interface between central air data computer-1, proximity electronics unit and central aural warning unit.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	27	B1-403	HYD POWER TRANSFER UNIT CONTROL
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

- (2) Place STATIC AIR selector switch on captain's corner gusset to NORM position.
- (3) Connect air data tester to captain's pitot tube.

NOTE: Personnel should be cleared from all surfaces before movements are actuated. Hydraulic test stand fixture may be utilized to operate aircraft surfaces if it is more desirable.

- (4) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

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LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	27	B1-403	HYD POWER TRANSFER UNIT CONTROL
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (5) Place TRANS HYD PUMPS switch, on F/O's instrument panel, in ON position. Switch guard must be moved to operate switch.

WJE 886, 887, 892

- (6) Place ALT HYD PUMPS switch, on F/O's instrument panel, in ON position. Switch guard must be moved to operate switch.

WJE ALL

- (7) Place AUX HYD PUMPS switch, on F/O's instrument panel, in ON position.
- (8) Set FLAP/SLAT handle on "0" position.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (9) Slowly adjust pitot pressure on air data tester to obtain an airspeed of 280(±5) knots. Check that overspeed warning clacker sounds followed by words: "Slat Overspeed".

WJE 886, 887, 892

- (10) Slowly adjust pitot pressure on air data tester to obtain an airspeed of 280 (+5) knots. Check that overspeed warning clacker sounds.

WJE ALL

- (11) Set FLAP/SLAT handle to "UP-RET" position. Check that overspeed warning silences.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (12) Slowly turn pitot pressure on air data tester to atmospheric pressure. Check that airspeed indicator reads "0".
- (13) Place TRANS HYD PUMPS switch, on F/O's instrument panel, in OFF position. Switch guard must be secured after operation of switch.

WJE 886, 887, 892

- (14) Slowly turn pitot pressure on air data tester to atmospheric pressure.
- (15) Place ALT HYD PUMPS switch, on F/O's instrument panel, in OFF position. Switch guard must be secured after operation of switch.

WJE ALL

- (16) Place AUX HYD PUMPS switch, on F/O's instrument panel, in OFF position.

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (17) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	27	B1-403	HYD POWER TRANSFER UNIT CONTROL
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

- (18) Disconnect air data tester from captain's pitot tube.
 (19) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	27	B1-403	HYD POWER TRANSFER UNIT CONTROL
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

WJE ALL

- F. Test Speed Brake

NOTE: This test is performed to verify interface between flap handle, spoiler handle switches and central aural warning unit.

WARNING: BEFORE PRESSURIZING HYDRAULIC SYSTEMS, MAKE CERTAIN THAT LANDING GEAR GROUND LOCKPINS ARE INSTALLED AND THAT APPLICABLE CONTROLS ARE IN CORRECT POSITION TO PREVENT INADVERTENT OPERATION OF LANDING GEAR AND FLIGHT CONTROL SYSTEMS.

- (1) Pressurize left and right hydraulic systems. (PAGEBLOCK 29-00-00/201)

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WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
L	30	B1-24	RIGHT GROUND CONTROL RELAY

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
L	33	B1-24	RIGHT GROUND CONTROL RELAY

WJE ALL

- (3) Set spoiler handle on center pedestal to EXT position.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (4) Set Flap/Slat handle on center pedestal to 15° position. Check that speed brake warning horn sounds followed by words: "Speed Brake".

WJE 886, 887, 892

- (5) Set Flap/Slat handle on center pedestal to 15° position. Check that speed brake warning horn sounds.

WJE ALL

- (6) Set spoiler handle on center pedestal to RET position. Check that speed brake warning silences.
- (7) Set Flap/Slat handle on center pedestal to UP/RET position.
- (8) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
L	30	B1-24	RIGHT GROUND CONTROL RELAY

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WJE 417, 419, 421, 423, 865, 869, 871, 872 (Continued)

(Continued)

UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
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L	33	B1-24	RIGHT GROUND CONTROL RELAY
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WJE 401-409, 411, 412, 414, 875-881, 883, 884, 892

G. Test Auto Brake Warning

NOTE: This test is part of takeoff warning test. (PAGEBLOCK 27-00-00/201)

- (1) Place switch on auto brake control panel to OFF position.
- (2) Advance throttle levers on center pedestal to full forward position.

WJE 401-409, 411, 412, 414, 875-881, 883, 884

- (3) Arm Rejected Takeoff (RTO) spoiler switches by squeezing speed brake lever. Check that takeoff warning horn sounds followed by word: "Autobrake".

WJE 892

- (4) Arm Rejected Takeoff (RTO) spoiler switches by squeezing speed brake lever. Check that takeoff warning horn sounds.

WJE 401-409, 411, 412, 414, 875-881, 883, 884, 892

- (5) Set auto brake control switch in T.O. position. Check that takeoff warning silences.

WJE 401-409, 411, 412, 414, 875-881, 883, 884

- (6) Disarm RTO spoiler switches by releasing speed brake lever. Check that takeoff warning horn sounds followed by words: "Autospoiler".

WJE 892

- (7) Disarm RTO spoiler switches by releasing speed brake lever. Check that takeoff warning horn sounds.

WJE 401-409, 411, 412, 414, 875-881, 883, 884, 892

- (8) Set the auto brake control switch to OFF position. Check that takeoff warning silences.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

H. Test Evacuation Alert Warning

NOTE: This test is part of Evacuation Warning System.

WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

(PAGEBLOCK 25-65-00/501)

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (1) Place EVAC SIGNAL master switch, located on overhead switch panel, to ARM position.
- (2) Place EVAC SIGNAL COMMAND switch, located on overhead switch panel, in ON position.
NOTE: Protection guard on switch must be released to position switch.
- (3) Check that evacuation alert warning sounds, in cockpit, followed by word: "Evacuate".
- (4) Check that evacuation alert aural warning comes on at forward drop ceiling panel and mid cabin attendants panel.

EFFECTIVITY
WJE ALL

31-51-00

TP-80MM-WJE

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)

- (5) Place EVAC SIGNAL COMMAND switch, located on overhead switch panel, to OFF position.
- (6) Place EVAC SIGNAL master switch, located on overhead switch panel, to OFF position.
- (7) Check that evacuation alert warning silences.
- (8) Place EVAC SIGNAL master switch, located on overhead switch panel, to ARM position.
- (9) Place EVAC switch, located on mid attendants panel, in ON position.
- (10) Check that evacuation alert warning sounds, in cockpit, followed by word: "Evacuate".
- (11) Check that evacuation alert aural warning comes on at forward drop ceiling panel and mid cabin attendants panel.
- (12) Place EVAC switch, located on attendants panel, to OFF position.
- (13) Check that evacuation alert warning silences at all three locations.
- (14) Place EVAC SIGNAL master switch, located on overhead switch panel, to OFF position.

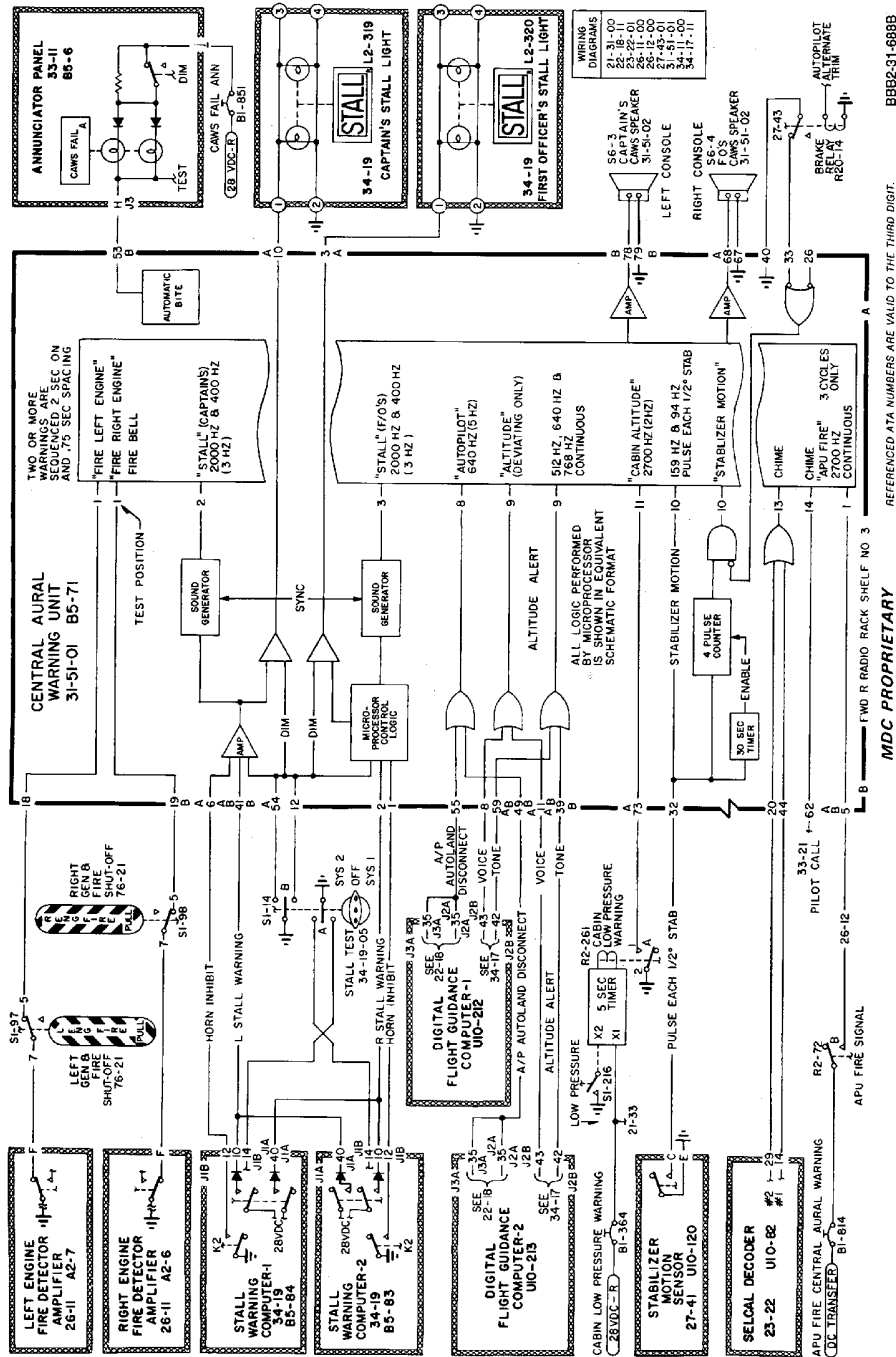
EFFECTIVITY
WJE ALL

TP-80MM-WJE

31-51-00

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MD-80
AIRCRAFT MAINTENANCE MANUAL

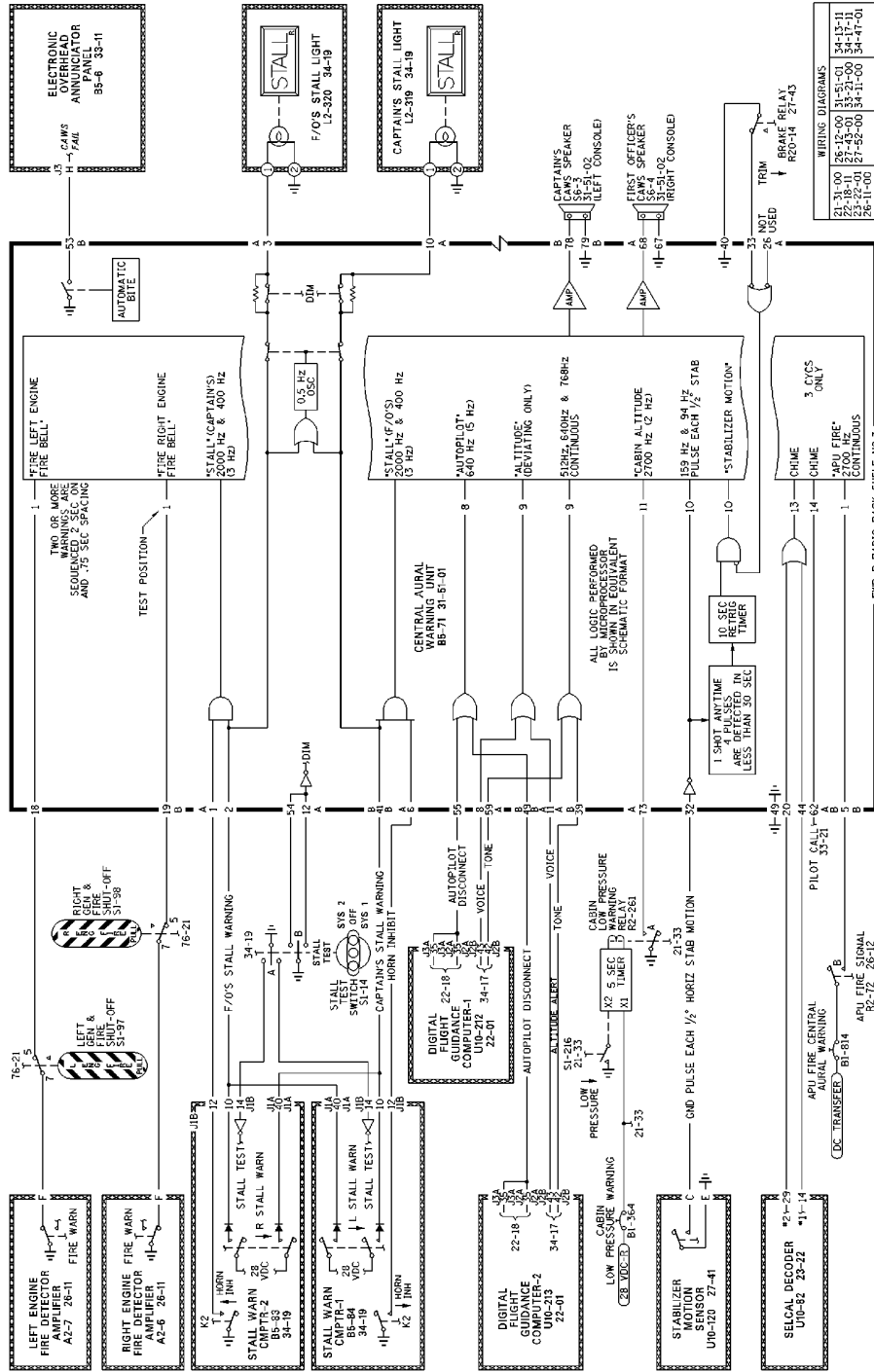


Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 1 of 8)

EFFECTIVITY
WJE 407, 408, 410, 411, 880

31-51-00

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BBB2-31-1133A

MDC PROPRIETARY

CAG(IGDS)

26-11-00	26-12-00	31-51-01	34-11-11
27-18-01	27-22-01	27-52-00	34-11-00
28-11-00	28-11-01	28-11-02	34-11-00

Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 2 of 8)

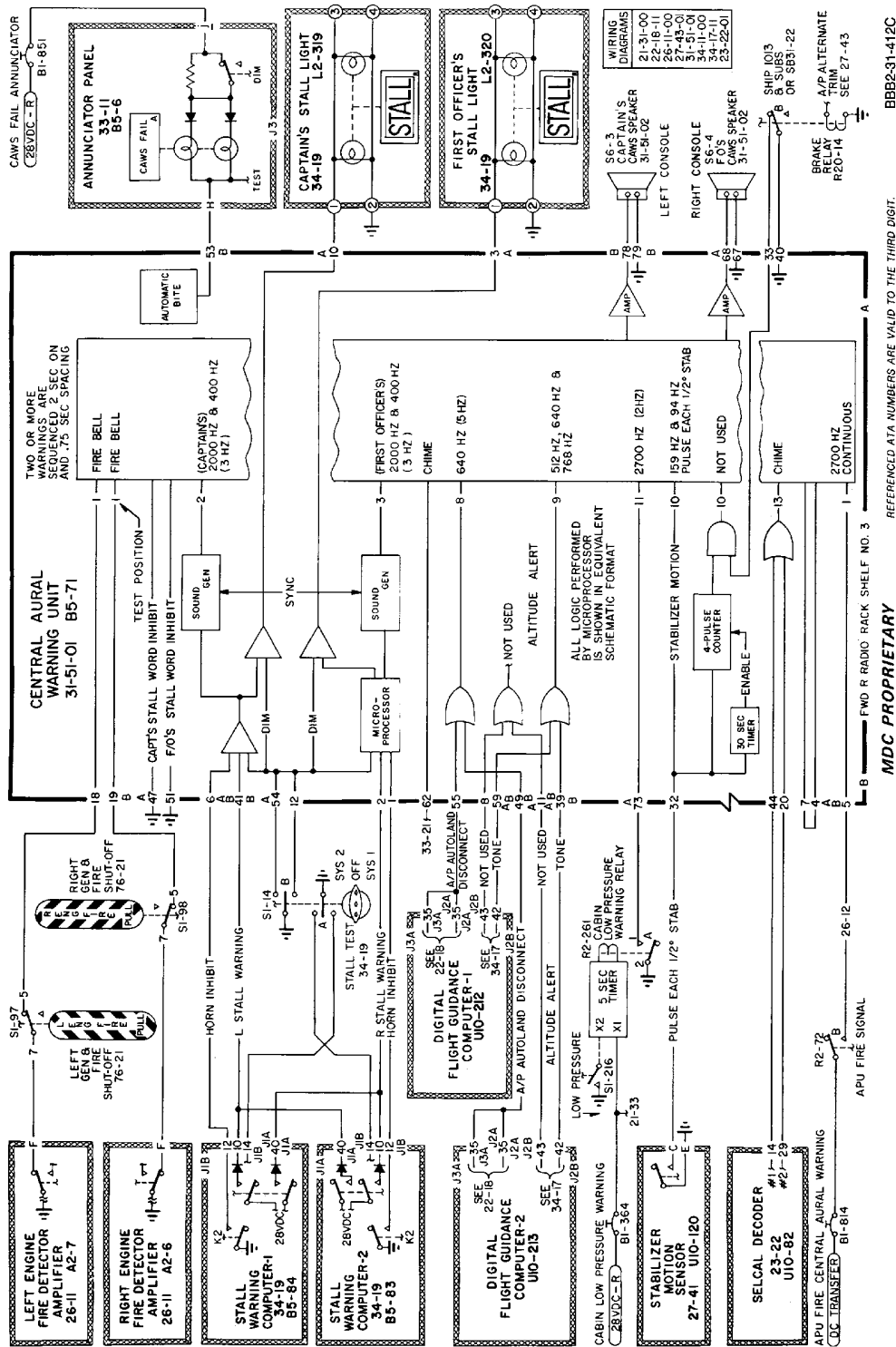
EFFECTIVITY
WJE 401-404, 412, 414

31-51-00

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TP-80MM-WJE

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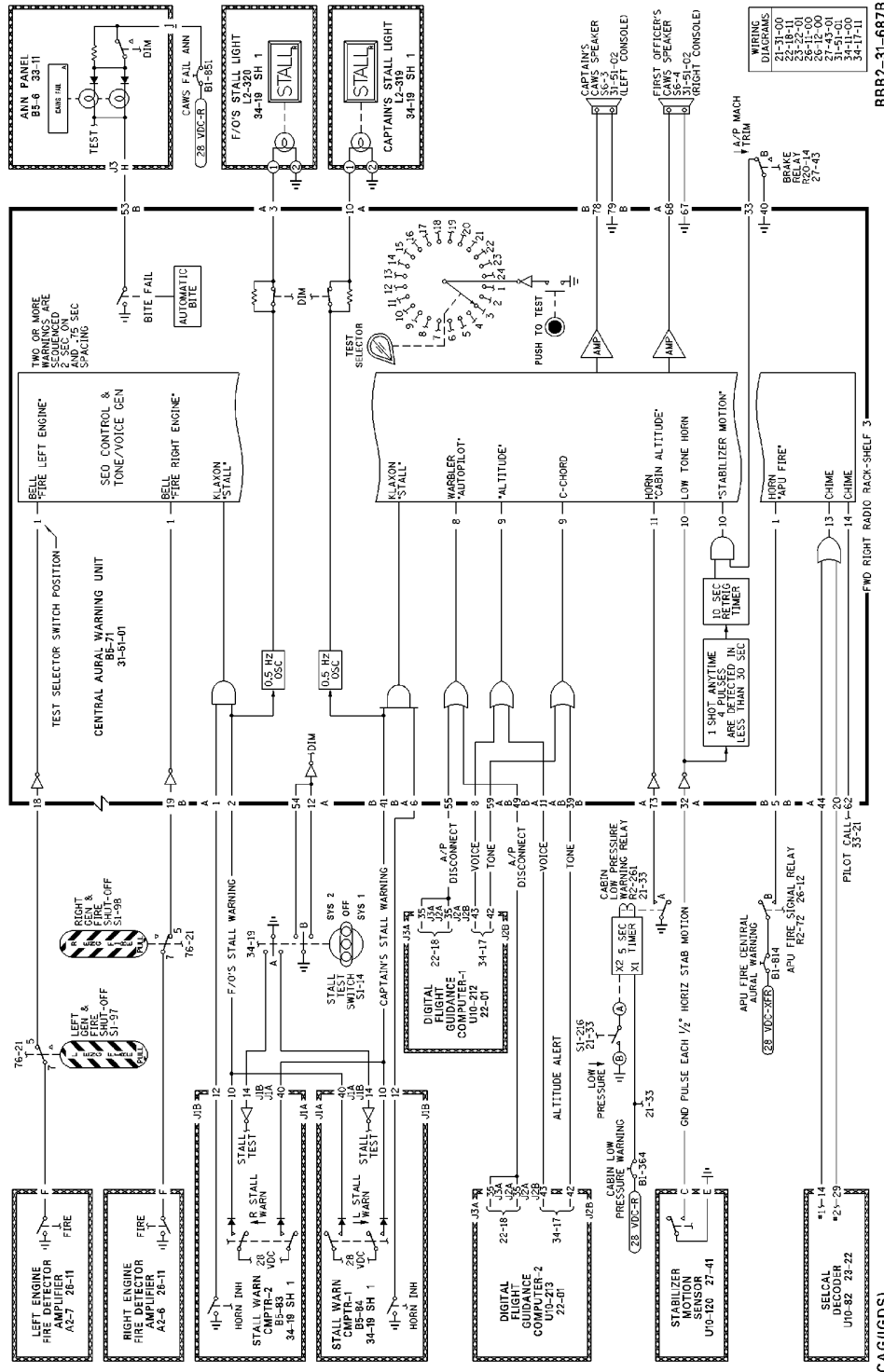


Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 3 of 8)

EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-51-00

MD-80 AIRCRAFT MAINTENANCE MANUAL

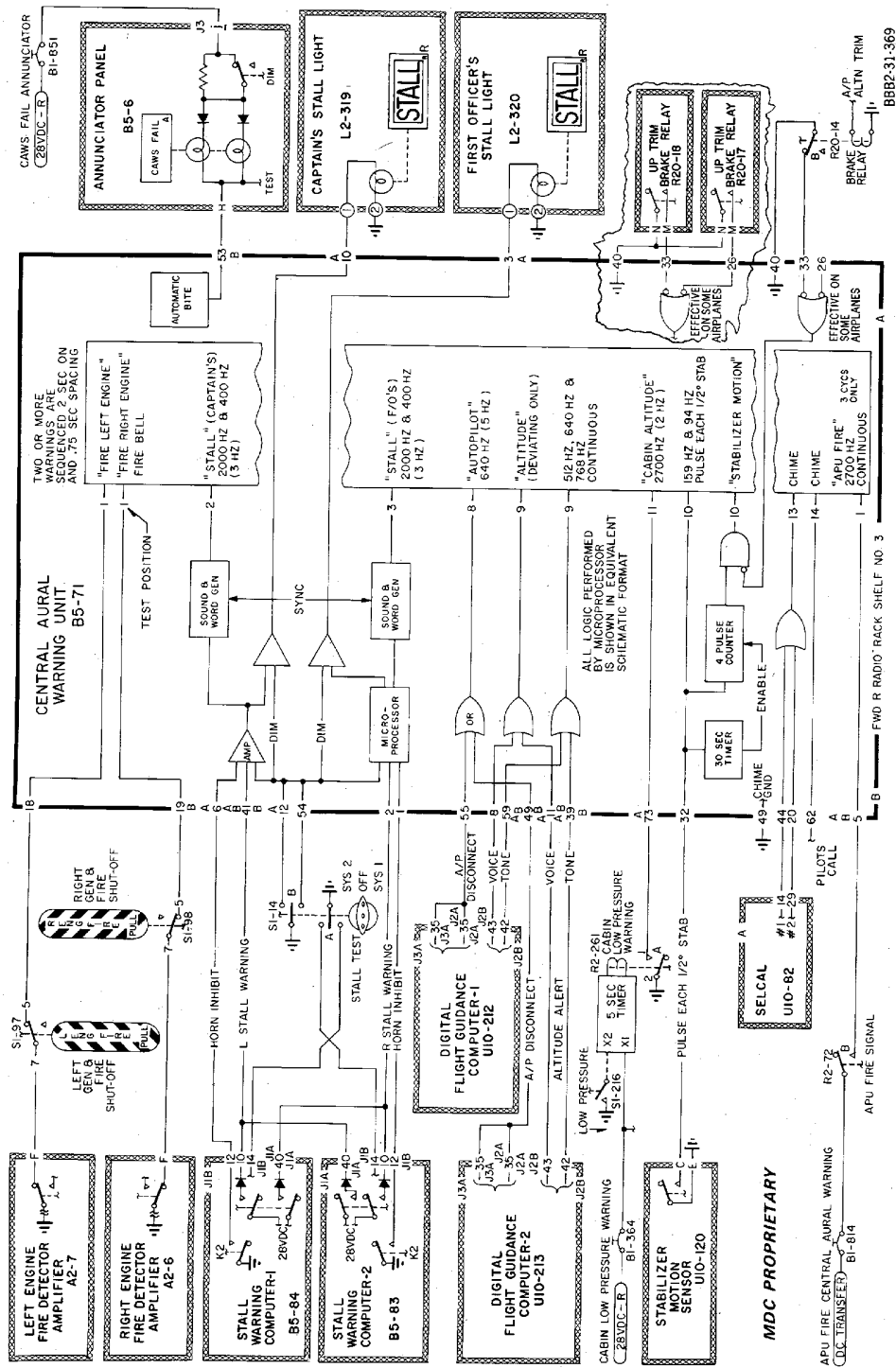


Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 4 of 8)

EFFECTIVITY
WJE 405, 406, 409, 881, 883, 884

31-51-00

MD-80 AIRCRAFT MAINTENANCE MANUAL

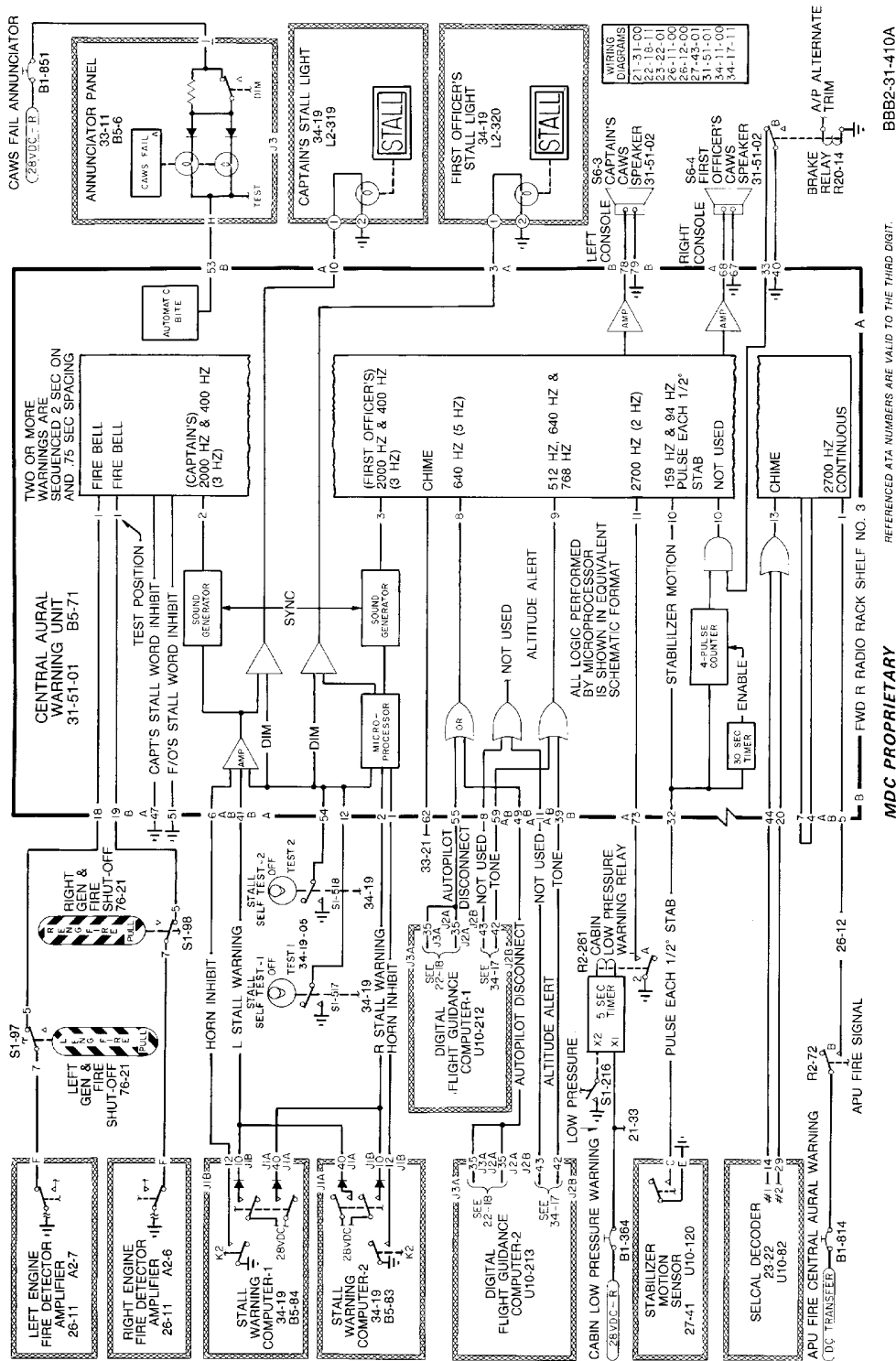


Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 5 of 8)

EFFECTIVITY
WJE 873, 874, 893

31-51-00

MD-80
AIRCRAFT MAINTENANCE MANUAL



Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 6 of 8)

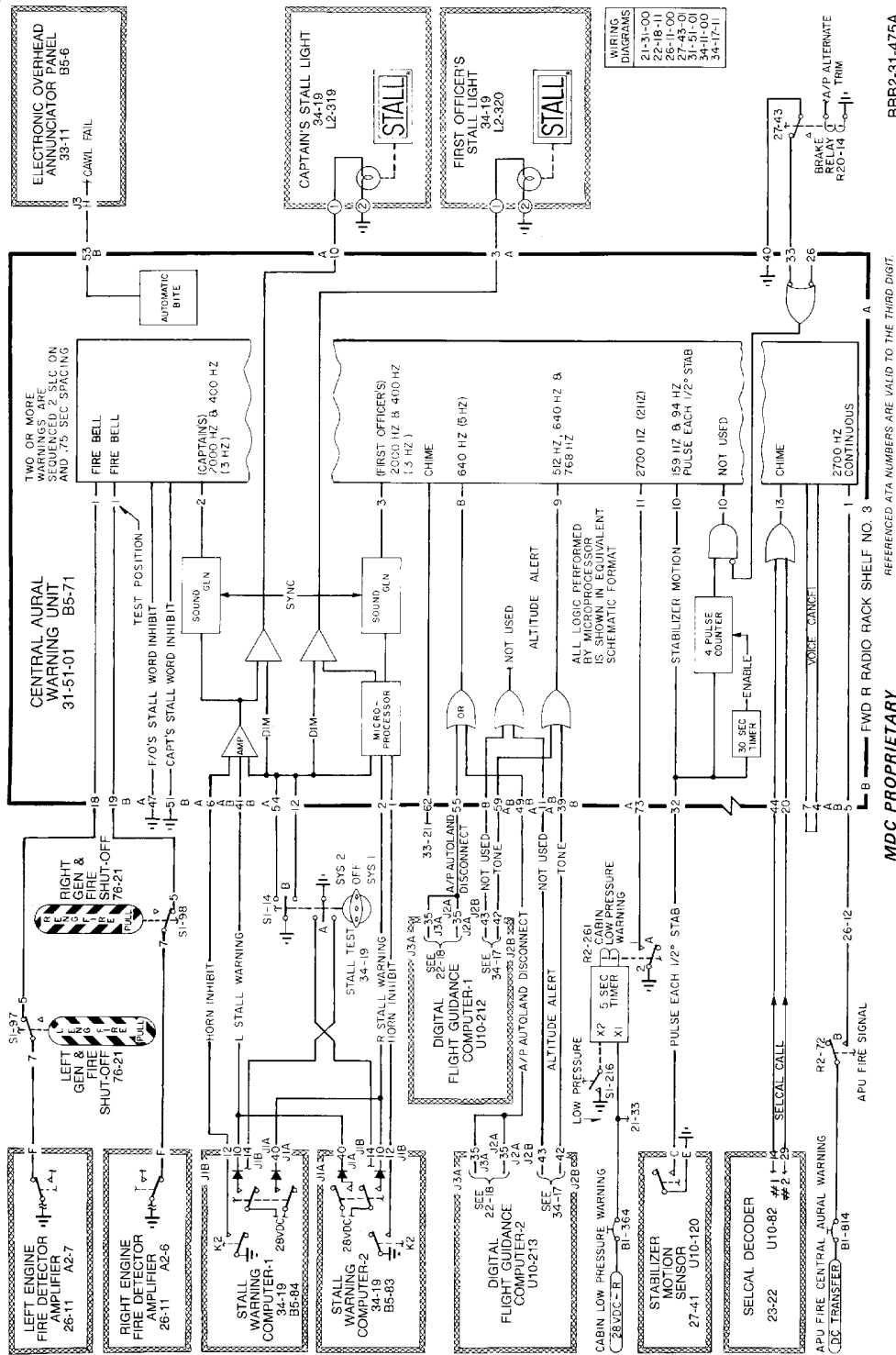
EFFECTIVITY
WJE 892

31-51-00

TP-80MM-WJE

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**MD-80
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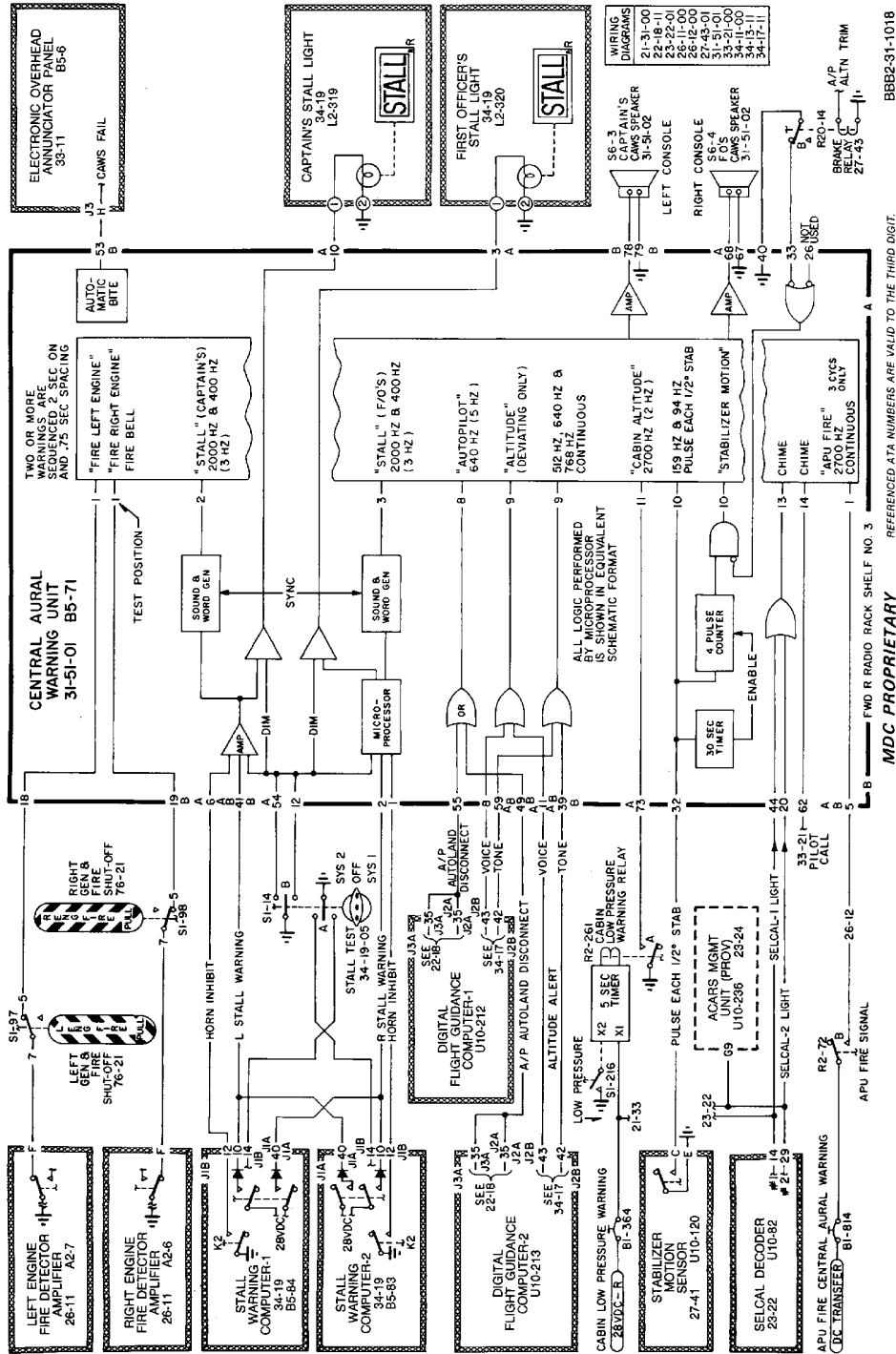


**Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 7 of 8)**

EFFECTIVITY
WJE 886, 887

31-51-00

MD-80 AIRCRAFT MAINTENANCE MANUAL

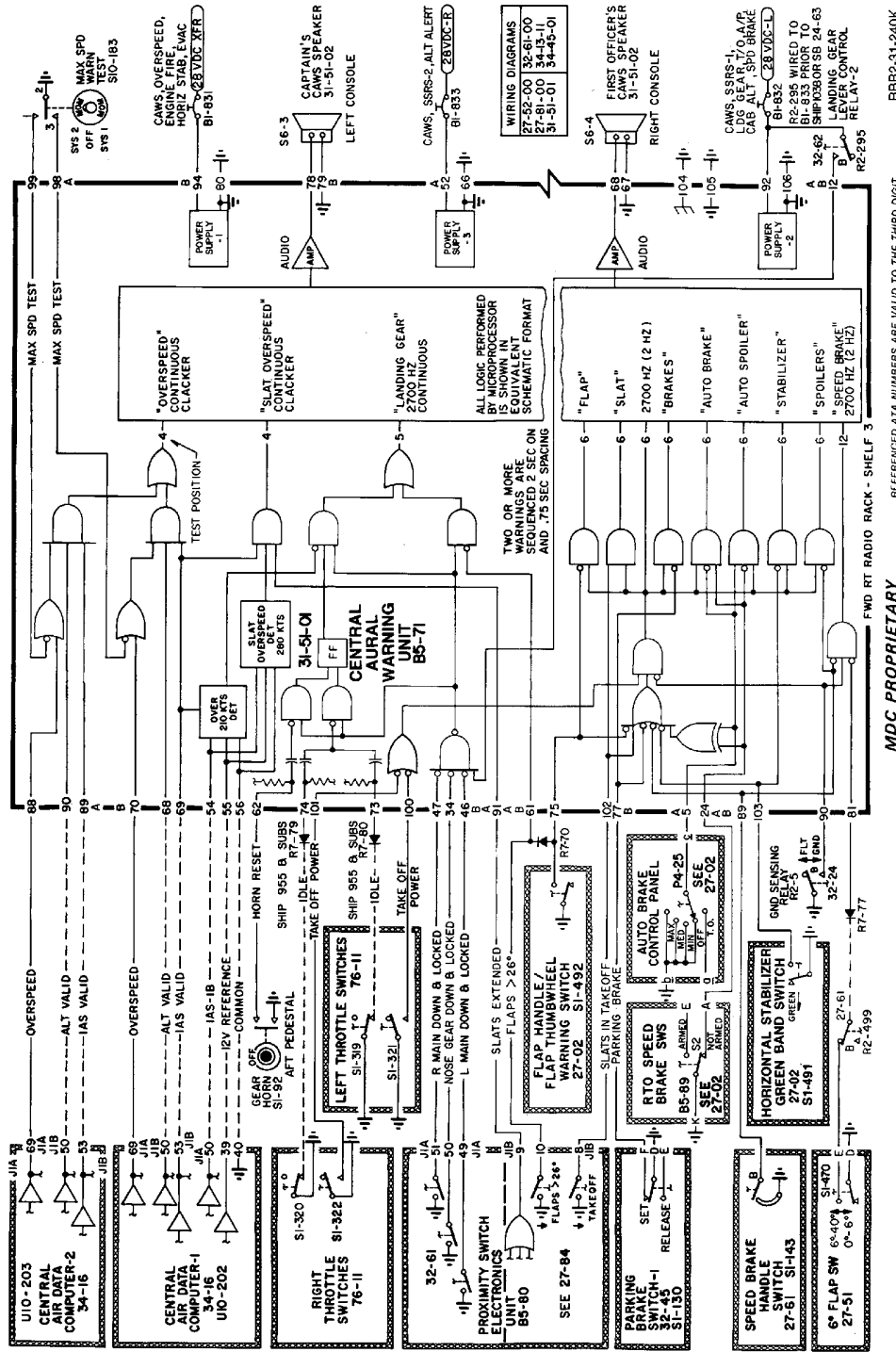


Central Aural Warning System Schematic
Figure 201/31-51-00-990-803 (Sheet 8 of 8)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

31-51-00

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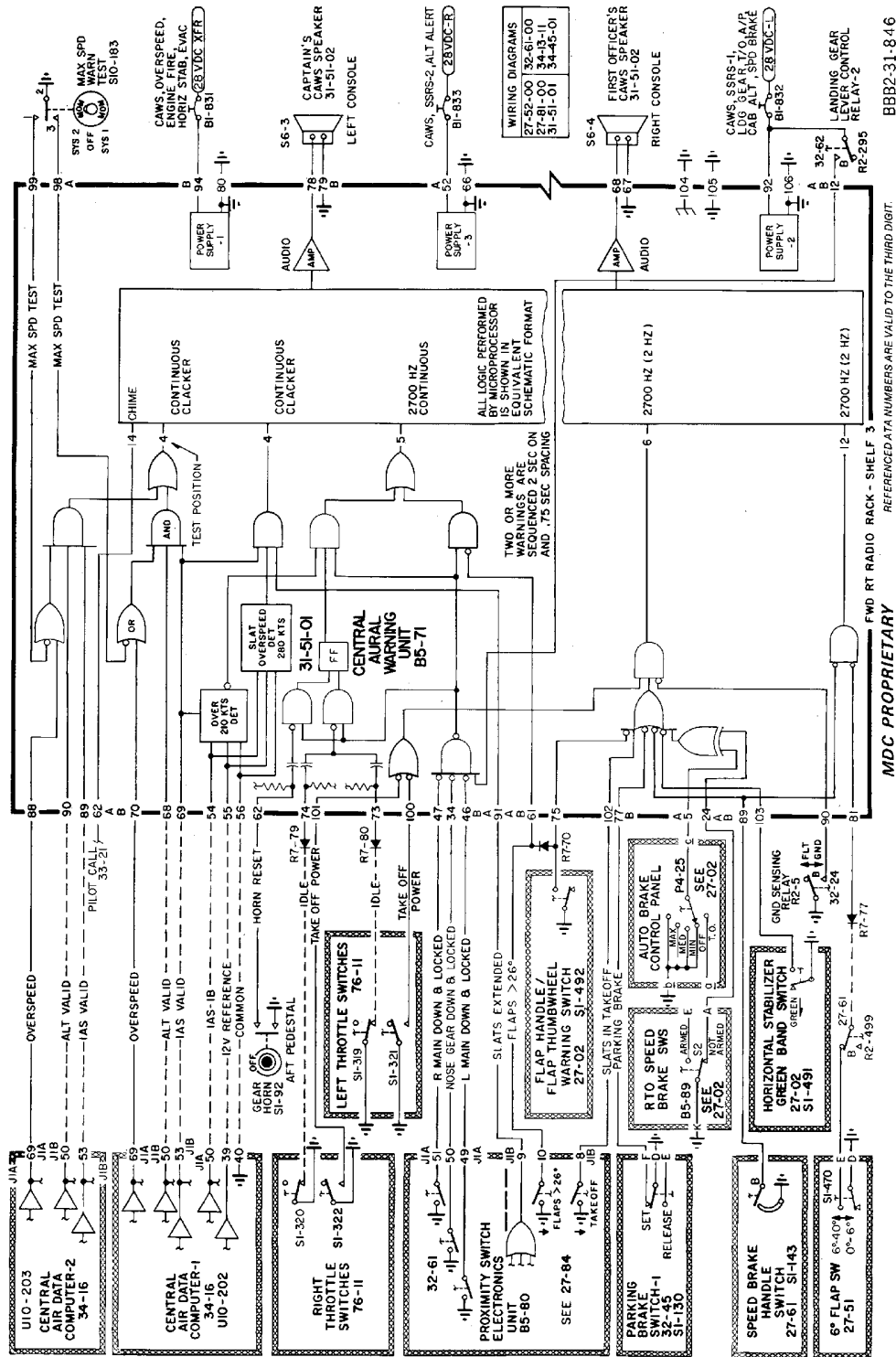


Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 1 of 11)

EFFECTIVITY
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 2 of 11)

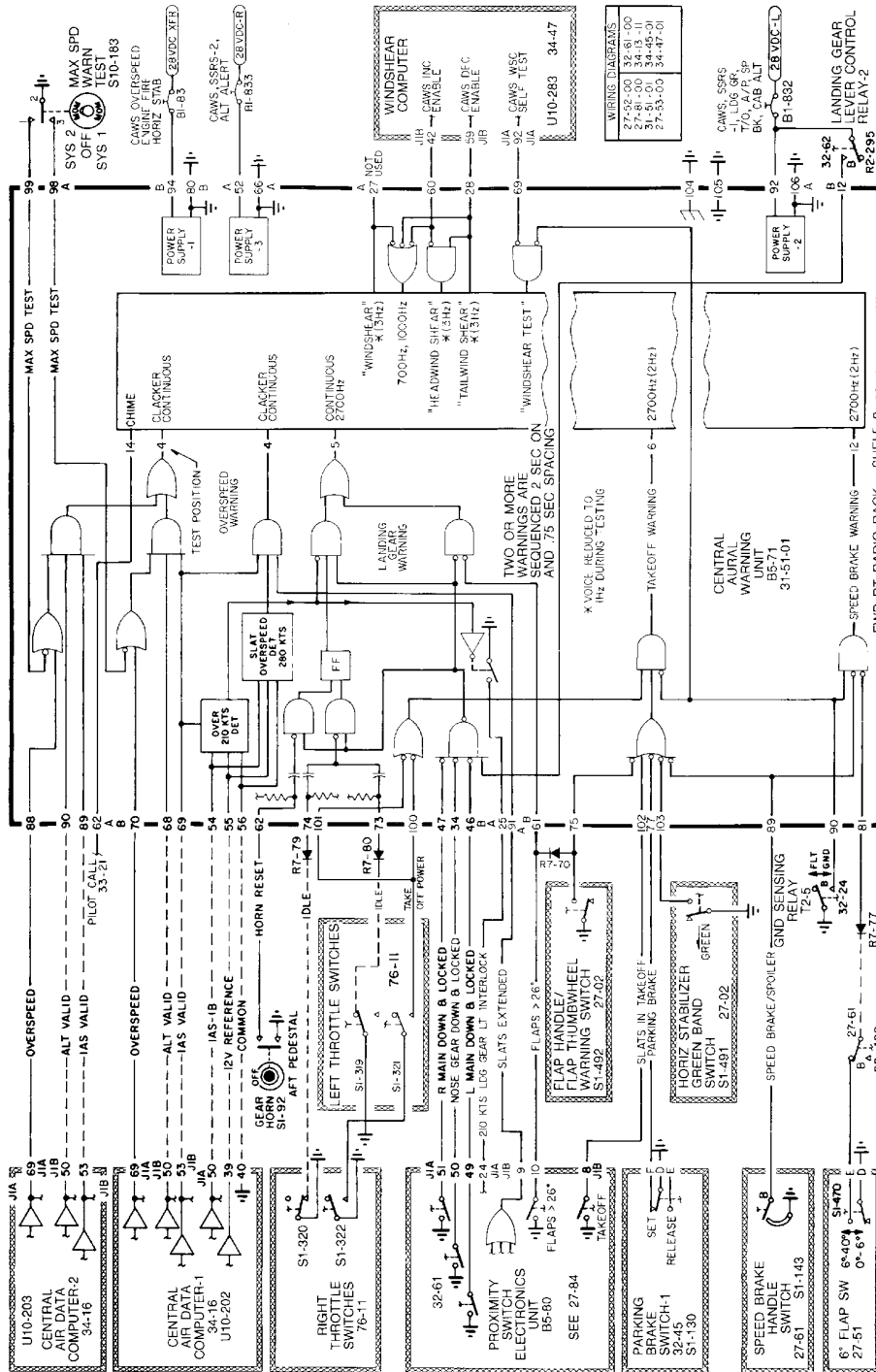
EFFECTIVITY
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

31-51-00

TP-80MM-WJE

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

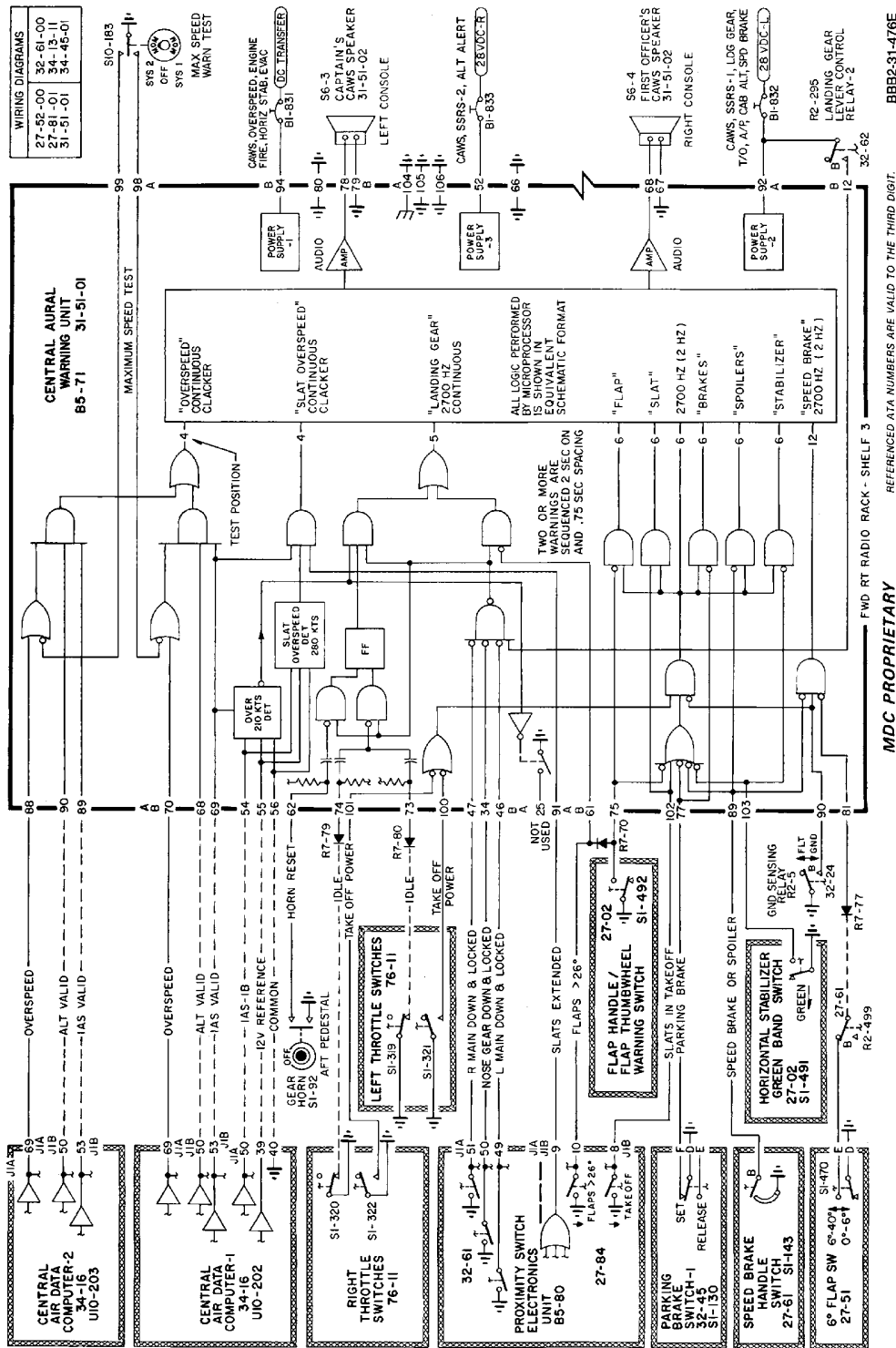
BBB2-31-1139

Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 3 of 11)

EFFECTIVITY
WJE 886, 887

31-51-00

MD-80 AIRCRAFT MAINTENANCE MANUAL

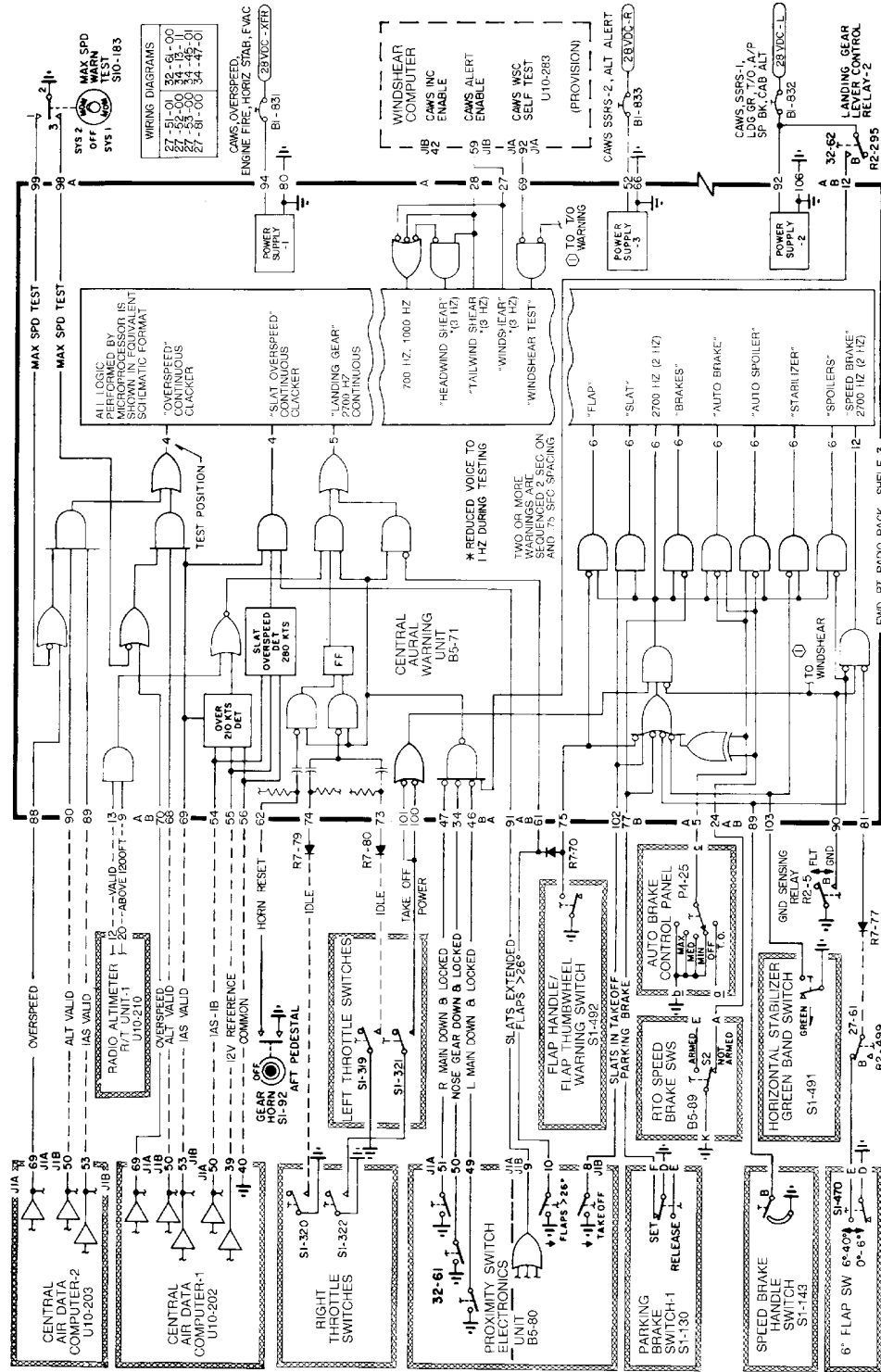


Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 4 of 11)

EFFECTIVITY
WJE 410, 873, 874, 893

31-51-00

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Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 5 of 11)

BBB2-31-417A

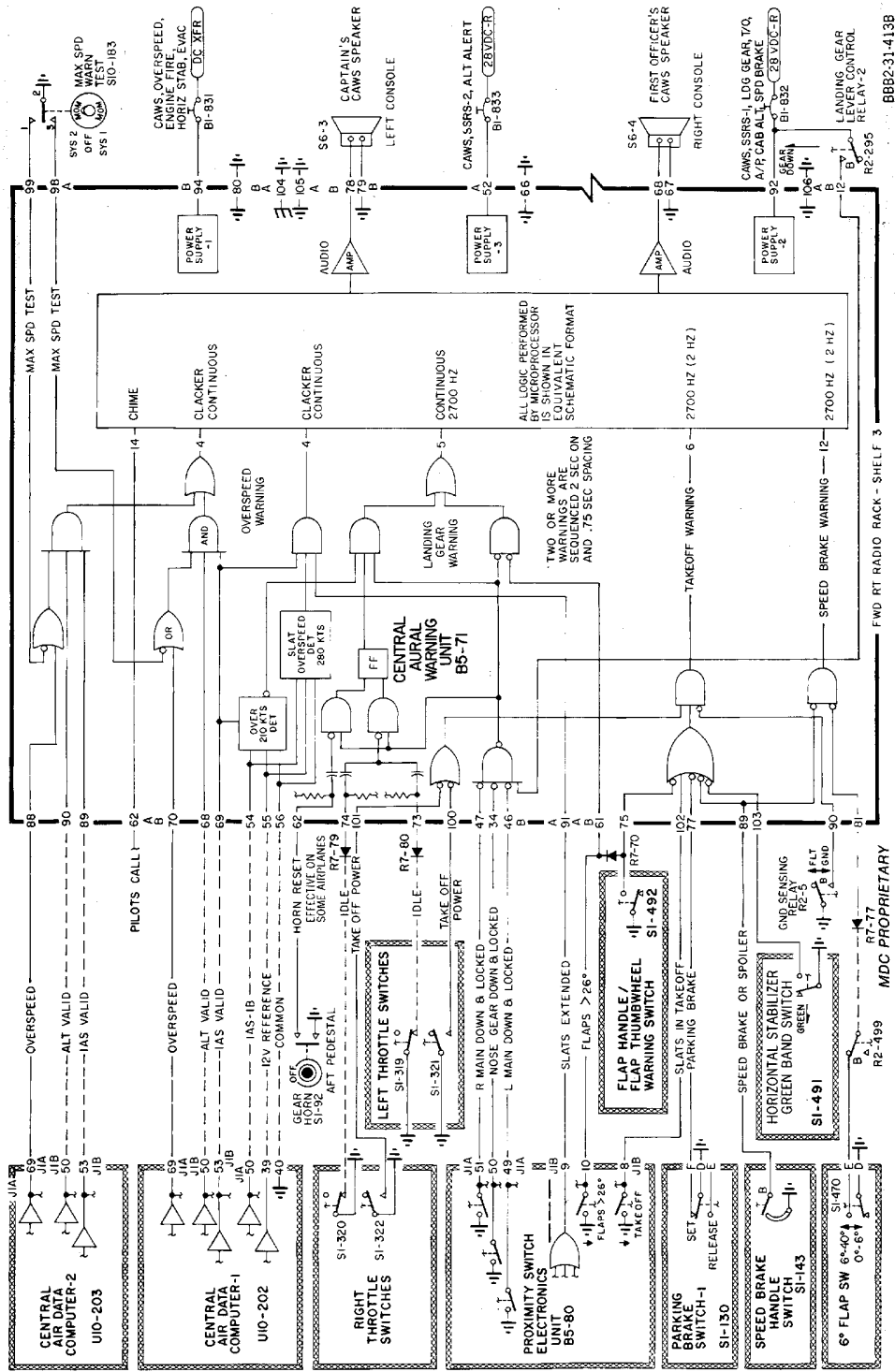
MDC PROPRIETARY

EFFECTIVITY
WJE 407, 408, 411, 880

31-51-00

TP-80MM-WJE

MD-80 AIRCRAFT MAINTENANCE MANUAL



Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 6 of 11)

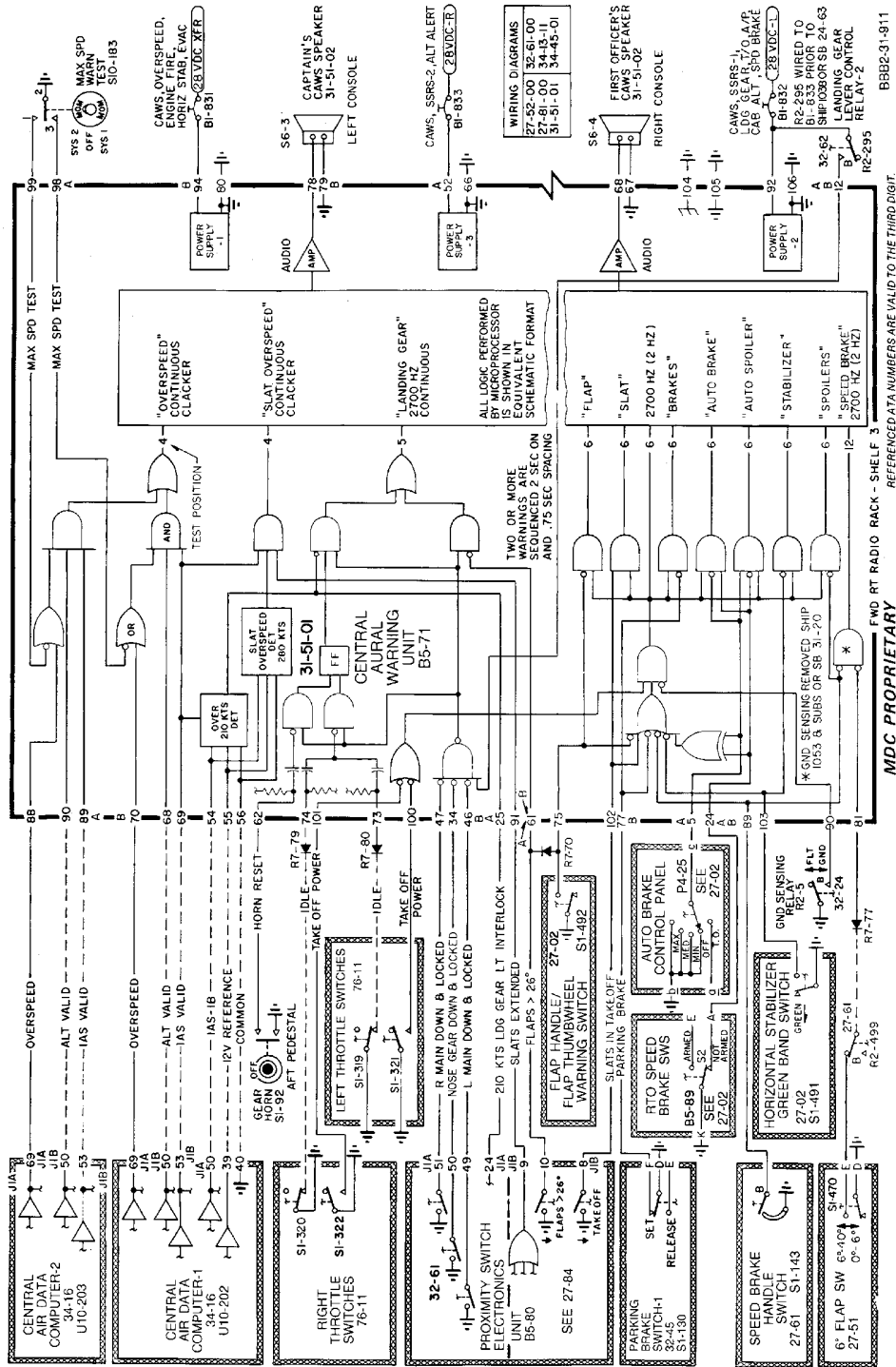
EFFECTIVITY
WJE 892

TP-80MM-WJE

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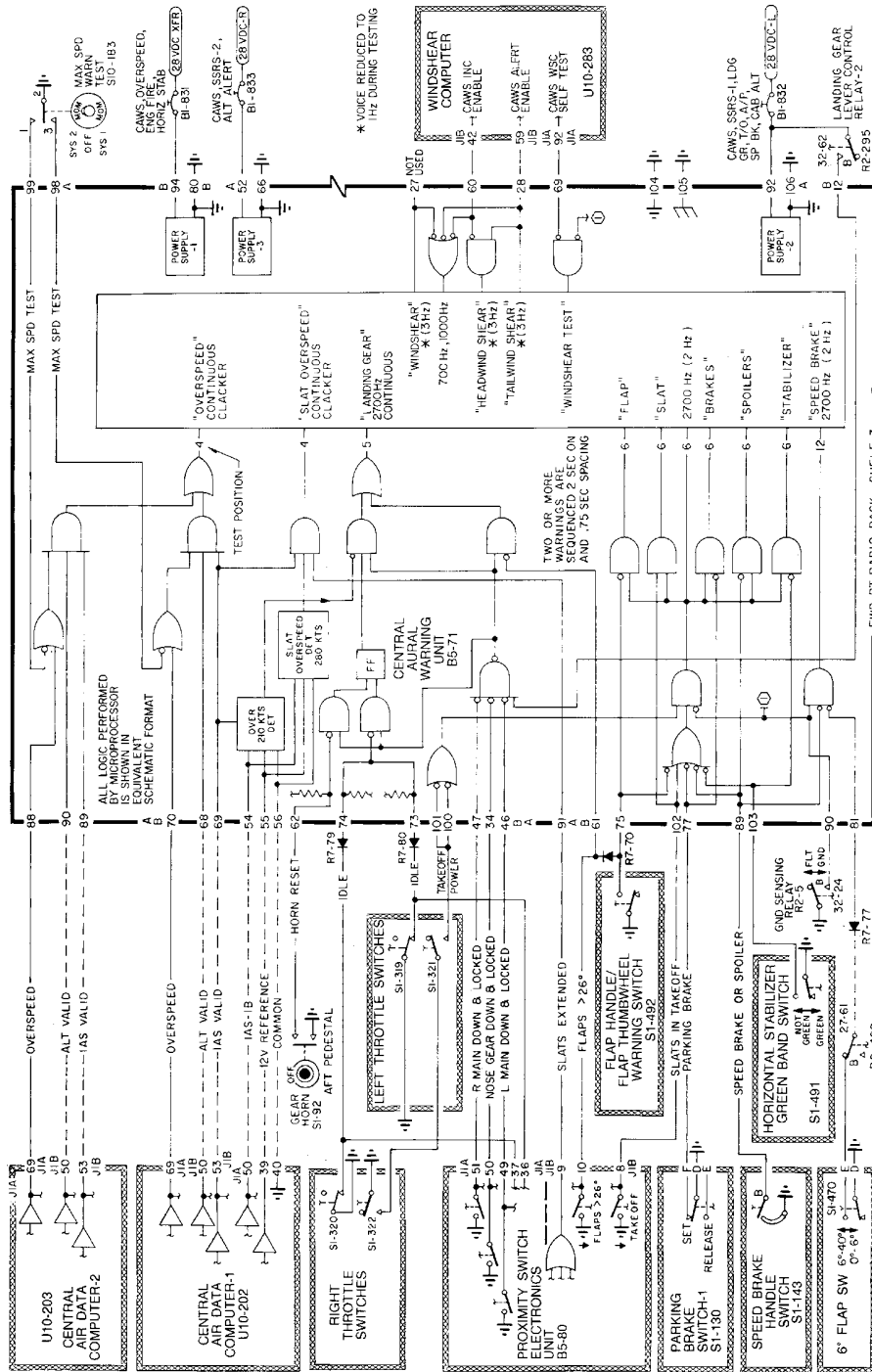


**Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 7 of 11)**

EFFECTIVITY
WJE 405, 409, 881, 883, 884

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MD-80 AIRCRAFT MAINTENANCE MANUAL



Central Aural Warning System Schematic Figure 202/31-51-00-990-804 (Sheet 8 of 11)

BBB2-31-1296

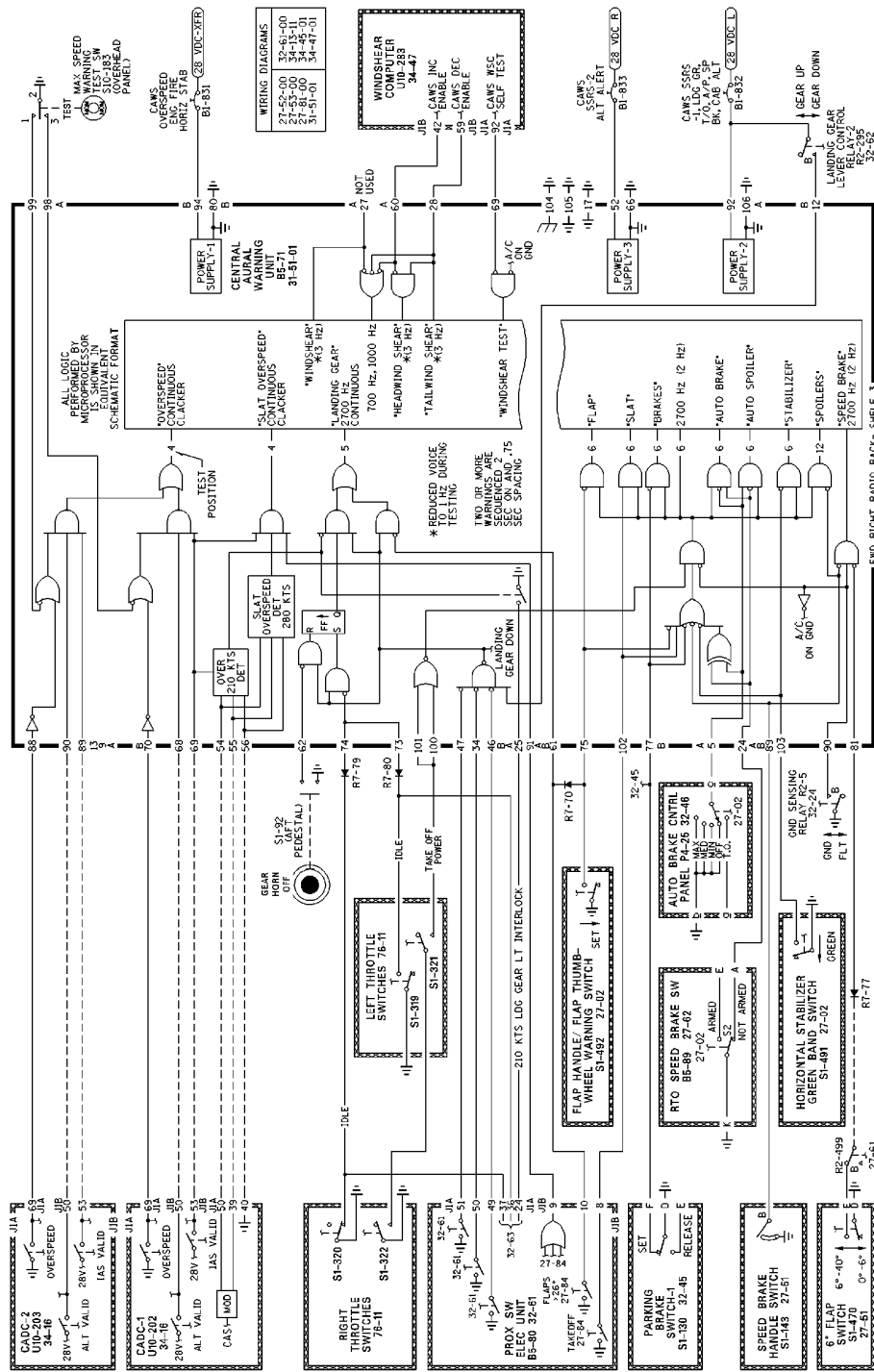
MDC PROPRIETARY

R2-499

EFFECTIVITY WJE 406

31-51-00

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BBB2-31-1391A

MDC PROPRIETARY

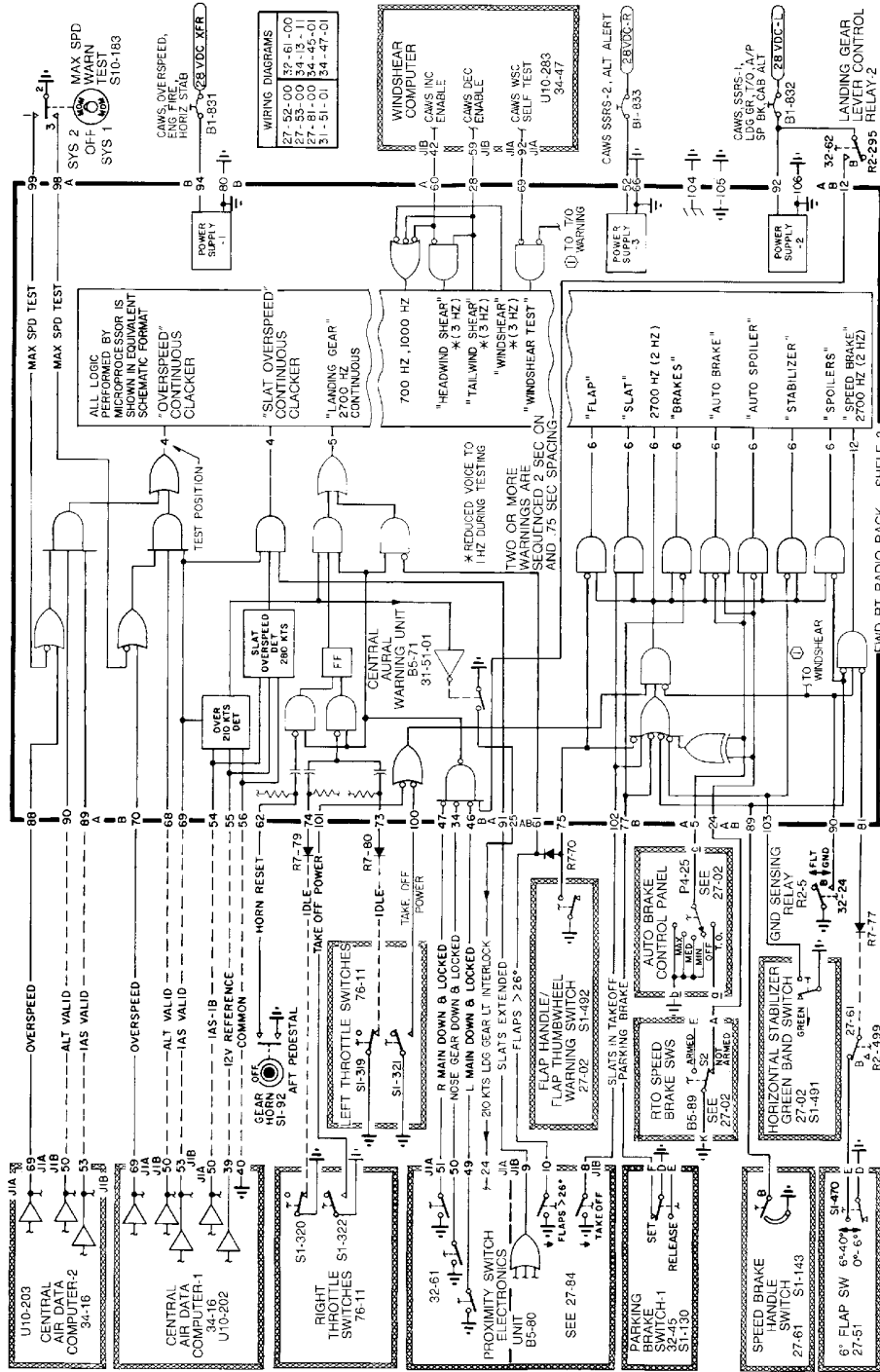
CAG(IGDS)

Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 9 of 11)

EFFECTIVITY
WJE 875-879

31-51-00

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BBB2-31-1140
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

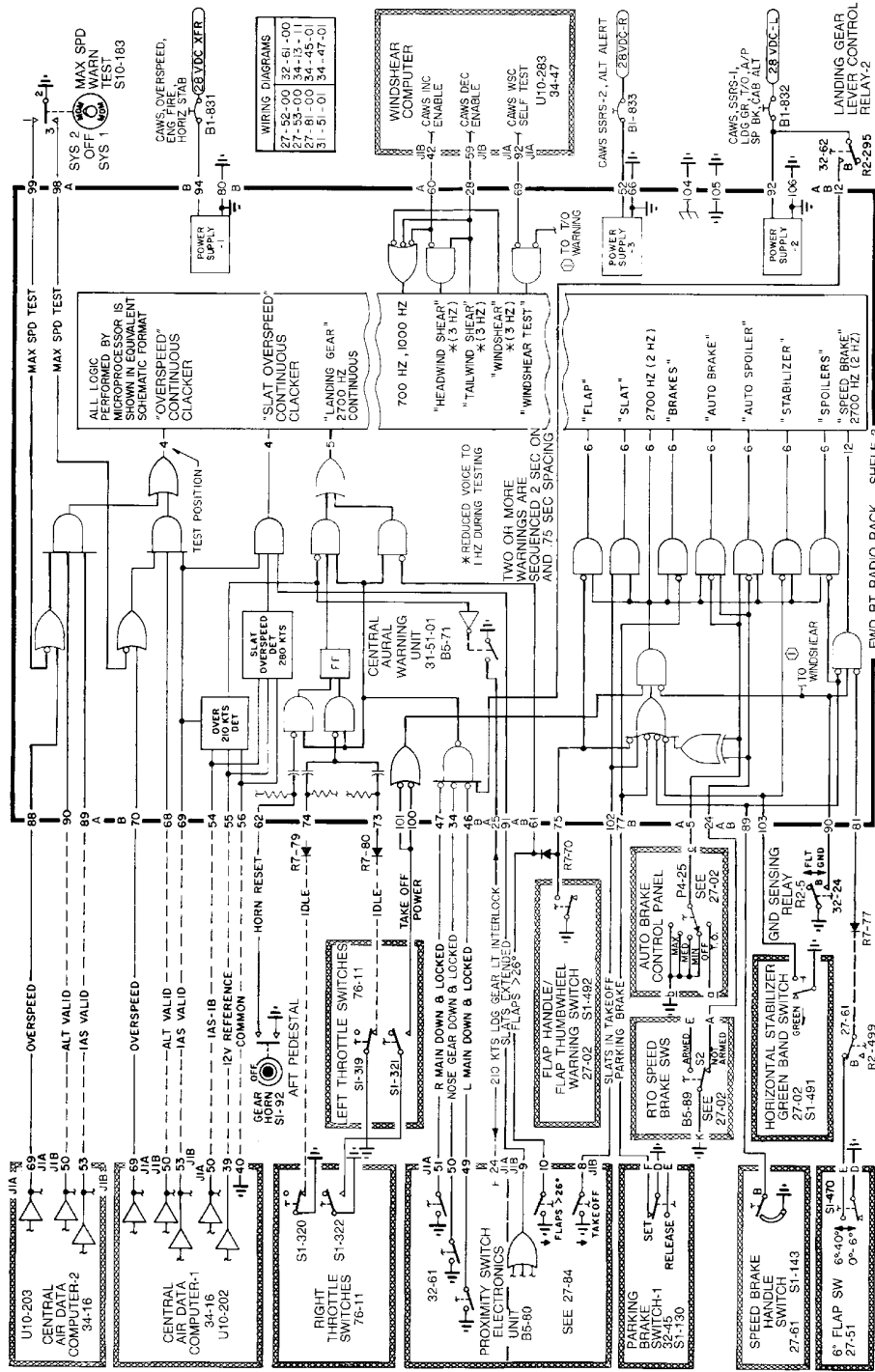
MDC PROPRIETARY

Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 10 of 11)

EFFECTIVITY
WJE 401-403, 412

31-51-00

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Central Aural Warning System Schematic
Figure 202/31-51-00-990-804 (Sheet 11 of 11)

BB92-31-1136

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT

MDC PROPRIETARY

FWD RT RADIO RACK - SHELF 3

EFFECTIVITY
WJE 404, 414

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CENTRAL AURAL WARNING SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure contains MSG-3 task card data.

TASK 31-51-00-710-801

2. Operational Check of the Slat Overspeed Aural Warning

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
COM-7112	Kit - Tester, Air Data, Kollsman

B. Prepare for the Operational Check of the Slat Overspeed Aural Warning

SUBTASK 31-51-00-480-001

- (1) Place STATIC AIR selector switch on captain's corner gusset to NORM position.
- (2) Connect air data tester kit, COM-7112 to the captain's pitot tube.

NOTE: Personnel should be cleared from all surfaces before movements are actuated. Hydraulic test stand fixture may be utilized to operate aircraft surfaces if it is more desirable.

C. Operational Check of the Slat Overspeed Aural Warning

SUBTASK 31-51-00-710-001

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (1) Do the operational check of the slat overspeed aural warning as follows:
 - (a) Place TRANS HYD PUMPS switch, on F/O's instrument panel, in ON position. Switch guard must be moved to operate switch.
 - (b) Place AUX HYD PUMPS switch, on F/O's instrument panel, in ON position.
 - (c) Set FLAP/SLAT handle to "0" position.
 - (d) Slowly adjust pitot pressure on air data tester to obtain an airspeed of 280 (±5) knots. Check that overspeed warning clacker sounds followed by words; "Slat Overspeed".
 - (e) Set FLAP/SLAT handle to "UP-RET" position. Check that overspeed warning stops.
 - (f) Slowly turn pitot pressure on air data tester to atmospheric pressure. Check that airspeed indicator reads "0".
 - (g) Place TRANS HYD PUMPS switch, on F/O's instrument panel, in OFF position. Switch guard must be secured after operation of switch.
 - (h) Place AUX HYD PUMPS switch, on F/O's instrument panel, in OFF position.

WJE 886, 887, 892

- (2) Do the operational check of the slat overspeed aural warning as follows:
 - (a) Place ALT HYD PUMPS switch, on F/O's instrument panel, in ON position. Switch guard must be moved to operate switch.
 - (b) Place AUX HYD PUMPS switch, on F/O's instrument panel, in ON position.

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WJE ALL

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WJE 886, 887, 892 (Continued)

- (c) Set FLAP/SLAT handle to "0" position.
- (d) Slowly adjust pitot pressure on air data tester to obtain an airspeed of 280 (±5) knots. Check that overspeed warning clacker sounds.
- (e) Set FLAP/SLAT handle to "UP-RET" position. Check that overspeed warning stops.
- (f) Slowly turn pitot pressure on air data tester to atmospheric pressure. Check that airspeed indicator reads "0".
- (g) Place ALT HYD PUMPS switch, on F/O's instrument panel, in OFF position. Switch guard must be secured after operation of switch.
- (h) Place AUX HYD PUMPS switch, on F/O's instrument panel, in OFF position.

WJE ALL

D. Job Close-up

SUBTASK 31-51-00-080-001

- (1) Disconnect air data tester from captain's pitot tube.

SUBTASK 31-51-00-942-003

- (2) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

TASK 31-51-00-710-802

3. Operational Check of the Overspeed Aural Warning

NOTE: This procedure is a scheduled maintenance task.

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

Reference	Description
SPL-19	Adapter - CADC Remote Test
	MD80-81, -82, -83, -88
	Part #: 5963440-1 Supplier: 88277

B. Prepare for the Operational Check of the Overspeed Aural Warning

SUBTASK 31-51-00-865-001

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

EFFECTIVITY WJE ALL	
------------------------	--

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SUBTASK 31-51-00-480-002

- (2) Connect CADC remote test adapter, SPL-19 P1 adapter plug to P4 connector on front panel of CADC-1 and P2 plug to P4 connector on front panel of CADC-2.

NOTE: All self-test switches in OFF position.

SUBTASK 31-51-00-865-002

- (3) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

C. Operational Check of the Overspeed Aural Warning

SUBTASK 31-51-00-710-002

- (1) Do an operational check of the overspeed aural warning.
- (a) Set CADC-1 FUNCTION TEST switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker sounds followed by word: "Overspeed".
 - (b) Set CADC-1 FAILURE WARNING switch on adapter to ON position. Check that overspeed warning clacker silences.
 - (c) Release PUSH TO TEST button on adapter, set CADC-1 FUNCTION TEST and FAILURE WARNING switches to OFF position.
 - (d) Set MAX SPD WARN TEST switch on overhead panel to SYSTEM 1. Check that overspeed warning clacker sounds followed by word: "Overspeed".
 - (e) Set MAX SPD WARN TEST switch to OFF position. Check that overspeed warning silences.
 - (f) Set CADC-2 FUNCTION TEST switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker sounds followed by word: "Overspeed".
 - (g) Set CADC-2 FAILURE WARNING switch on adapter to ON position. Depress and hold PUSH TO TEST button. Check that overspeed warning clacker silences.
 - (h) Release PUSH TO TEST button on adapter, set CADC-2 FUNCTION TEST and FAILURE WARNING switches to OFF position.
 - (i) Set MAX SPD WARN TEST switch on Overhead Panel to SYSTEM 2. Check that overspeed warning clacker sounds followed by word: "Overspeed".
 - (j) Set MAX SPD WARN TEST switch to OFF position. Check that overspeed warning silences.

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D. Job Close-up

SUBTASK 31-51-00-865-003

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

SUBTASK 31-51-00-080-002

- (2) Remove CADC Remote Test Adapter from P4 connector on front panel of CADC-1 and CADC-2.

SUBTASK 31-51-00-865-004

- (3) Remove the safety tags and close these circuit breakers:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

SUBTASK 31-51-00-942-002

- (4) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

TASK 31-51-00-710-803

4. Operational Check of the Landing Gear Aural Warning

NOTE: This procedure is a scheduled maintenance task.

A. References

<u>Reference</u>	<u>Title</u>
29-00-00 P/B 201	GENERAL - MAINTENANCE PRACTICES
32-00-00 P/B 201	GENERAL - MAINTENANCE PRACTICES

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt.", which stands for Optional.

<u>Reference</u>	<u>Description</u>
SPL-649	Pin - MLG Down Lock MD80-81, -82, -83, -88 Part #: 2916700-1 Supplier: 88277

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(Continued)

Reference	Description
SPL-650	Pin - NLG Down Lock

C. Prepare for the Operational Check of the Landing Gear Aural Warning

SUBTASK 31-51-00-480-003

WARNING: RAPID MOVEMENT OF GROUND MAINTENANCE BYPASS LEVER MAY RESULT IN INADVERTANT OPERATION OF MLG DOORS.

- (1) Place ground maintenance bypass lever in bypass position, open main gear inboard doors, install MLG door safety locks as applicable GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 32-00-00/201.
- (2) Install MLG down lock pin, SPL-649, and NLG down lock pin, SPL-650.

SUBTASK 31-51-00-863-001

- (3) Pressurize hydraulic system. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 29-00-00/201)

D. Operational Check of the Landing Gear Aural Warning

SUBTASK 31-51-00-710-003

- (1) Do an operational check of the landing gear aural warning.
 - (a) Advance throttle levers so that they are approximately 1.25 in. (3.18 cm) position (not in idle position).
 - (b) Place the landing gear control lever out of the DOWN detent. Do not move lever to UP position.
 - 1) Three gear unsafe (red) lights come on. Landing gear warning horn should not sound.
 - (c) Retard the left throttle lever until the warning horn sounds and the gear unsafe (red) lights remain on.
 - (d) On the aft pedestal, press the GEAR HORN OFF button, the warning horn stops sounding.
 - (e) Advance the left throttle forward back to original position.
 - 1) Gear unsafe (red) lights remain on.
 - (f) Retard the right throttle lever until the warning horn sounds and the gear unsafe (red) lights remain on.
 - (g) On the aft pedestal, press the GEAR HORN OFF button, the warning horn stops sounding.
 - (h) Advance the right throttle forward back to original position.
 - 1) Gear unsafe (red) lights remain on.

WARNING: MAKE CERTAIN THAT FLAP AND SLAT AREAS ARE CLEAR OF OBSTRUCTIONS AND PERSONNEL BEFORE LOWERING FLAP/SLATS.

- (i) Move the FLAP / SLAT handle to the 15 detent.
 - 1) The warning horn remains off.
- (j) Move the FLAP / SLAT handle to the 28 detent.
 - 1) The warning horn sounds.

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- (k) Move the FLAP / SLAT handle to the UP/RET detent.
 - 1) The warning horn stops sounding.
- (l) Place the landing gear control lever in the DOWN detent.
 - 1) Three gear safe (green) lights come on.
- (m) Return both throttles to the idle position.

E. Job Close-up

SUBTASK 31-51-00-080-003

- (1) Remove MLG door safety locks.
- (2) Remove NLG and MLG lock pins if no longer needed.

WARNING: BEFORE MOVING BYPASS VALVE, MAKE CERTAIN THAT AREAS AROUND MAIN GEAR DOORS ARE CLEAR OF PERSONNEL AND EQUIPMENT.

- (3) Place the ground maintenance bypass lever in normal (stowed) position.

WARNING: DO NOT RIDE MAIN LANDING GEAR DOOR(S) UP OR DOWN WHILE PRESSURIZING RIGHT HAND HYDRAULIC SYSTEM WITH ELECTRIC AUXILIARY HYDRAULIC PUMP (AUX PUMP), ENGINE DRIVEN PUMP(S), (EDPS), OR POWER TRANSFER UNIT (PTU). ANY DEVIATION FROM THIS WARNING COULD CAUSE PERSONAL INJURY.

- (a) The MLG doors will close.

SUBTASK 31-51-00-864-001

- (4) Shut down hydraulic source. (GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 29-00-00/201)

SUBTASK 31-51-00-942-001

- (5) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

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CENTRAL AURAL WARNING SPEAKERS - MAINTENANCE PRACTICE

1. General

- A. This maintenance practice provides removal/installation procedures for the aural warning speakers.
- B. There are two aural warning speakers located in the flight compartment, one installed in the left console and is accessible through left console access door, and one installed in the right console and is accessible through right console access door.
- C. Removal/installation procedures for the aural warning speakers are identical.

2. Removal/Installation Aural Warning Speakers

(Figure 201)

- A. Remove Right Console Aural Warning Speaker

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
			WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

- (2) Release screws and open access door.
- (3) Remove and retain grill.
- (4) Tag and disconnect electrical leads (4) to terminal strip.
- (5) Remove speaker.
- (6) Remove and retain terminal strip.

- B. Install Right Console Aural Warning Speaker

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

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LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

- (2) Install terminal strip on speaker.
- (3) Remove tags and connect electrical leads to terminal strip.
- (4) Install speaker and grill.
- (5) Close access door.
- (6) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

- (7) Rotate TEST SELECT switch on front of AWU to position 1 (Figure 31-51-00-990-801).
- (8) Press and hold PUSH TO TEST switch on front of AWU and check that aural fire warning bell tone and vocal annunciation is emitted from speakers. Release switch and check that fire warning silences.

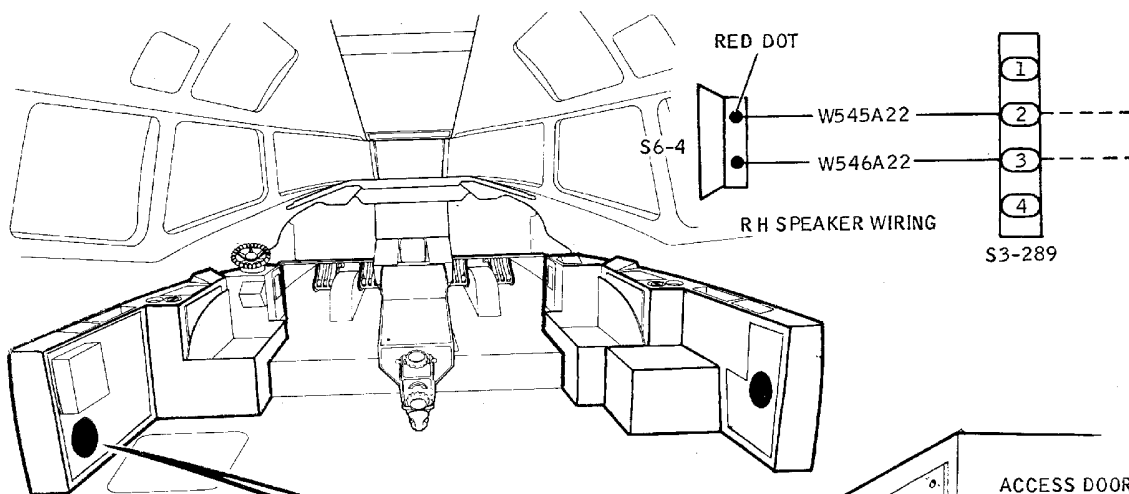
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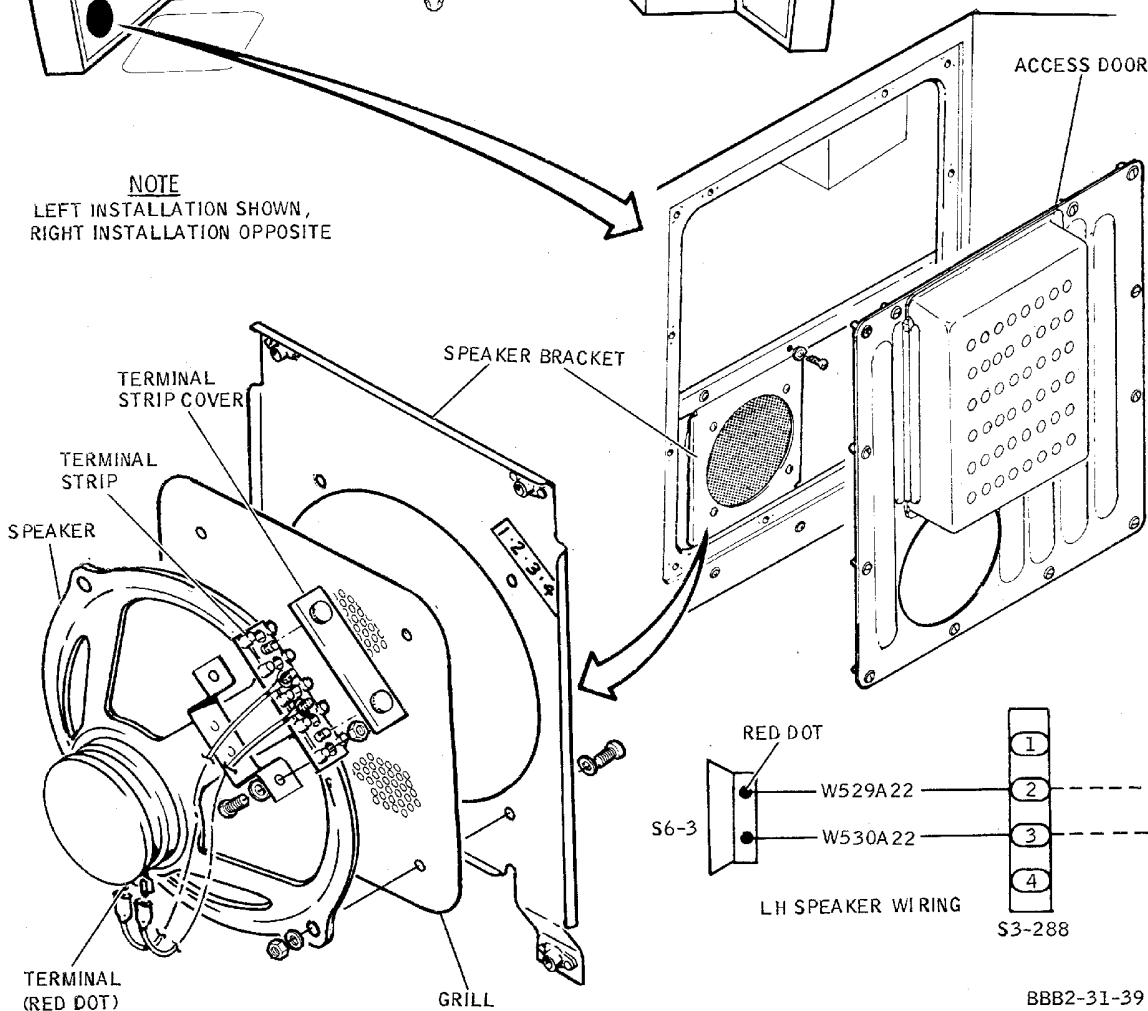
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NOTE
LEFT INSTALLATION SHOWN,
RIGHT INSTALLATION OPPOSITE



Aural Warning Speakers -- Removal/Installation
Figure 201/31-51-01-990-801

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3. Adjustment/test of the Aural Warning System

NOTE: The CAWS audio level test is performed to confirm an audible difference between the low, medium, and high audio levels.

NOTE: The low level requires that the following conditions occur:

- Aircraft on ground with LEFT GROUND CONTROL RELAY circuit breaker (B1-23) pressed on or closed.
- Air Data Computer turned on (AIR DATA COMPTR-1 (B1-316) and AIR DATA COMPTR-2 (B1-317) circuit breakers pressed on or closed).
- Speed less than 50 knots (ADC active and aircraft on ground).

NOTE: The conditions for medium level are as follows:

- Aircraft in air (open LEFT GROUND CONTROL RELAY (B1-23) circuit breaker)

NOTE: The conditions for high level are as follows:

- Airspeed invalid (AIR DATA COMPTR-1 (B1-316) and AIR DATA COMPTR-2 (B1-317) circuit breakers are open).
- Aircraft on ground with LEFT GROUND CONTROL RELAY circuit breaker (B1-23) pressed on or closed.

NOTE: The throttles are to be in "idle" position prior to closing circuit breakers.

- The warning will be annunciated in both Captain's and First Officer's speakers.
- Warnings consist of tones and voice. Tone is baseline and voice is optional.

A. CAWS Audio Level Testing

- (1) Make sure that these circuit breakers are closed:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	26	B1-187	LANDING GEAR WARNING
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	38	B1-833	CAWS SSRS-2 ALT ALERT
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY

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WJE 417, 419, 421, 423, 865, 869, 871, 872 (Continued)

(Continued)

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE ALL

F	17	B10-105	RADIO ALTMETER-1
---	----	---------	------------------

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

F	12	B10-317	AIR DATA CMPTR -2
---	----	---------	-------------------

NOTE: CAWS is CENTRAL AURAL WARNING SYSTEM on some aircraft circuit breaker panels.

- (2) Rotate selector knob on front panel of CAWS unit to position 6, press and hold "PUSH-TO-TEST" switch and observe as follows:

- (a) Take-off warning annunciated sequence is as follows:

- 1) Horn "stabilizer",
- 2) Horn "auto brake",
- 3) Horn "brakes",
- 4) Horn "flap",
- 5) Horn "slat", and
- 6) Horn "spoilers".

NOTE: Hold the PUSH-TO-TEST button the entire sequence.

- (b) Volume level will be low.
(c) Release PUSH-TO-TEST switch.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (3) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

WJE 417, 419, 421, 423, 865, 869, 871, 872

K	30	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893

K	33	B1-23	LEFT GROUND CONTROL RELAY
---	----	-------	---------------------------

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(4) Press and hold "PUSH-TO-TEST" switch and observe as follows:

(a) Take-off warning annunciated sequence is as follows:

- 1) Horn "stabilizer",
- 2) Horn "auto brake",
- 3) Horn "brakes",
- 4) Horn "flap",
- 5) Horn "slat", and
- 6) Horn "spoilers".

NOTE: Hold the PUSH-TO-TEST button the entire sequence.

(b) Volume level will be medium.

(c) Release PUSH-TO-TEST switch.

(5) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY
WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
K	33	B1-23	LEFT GROUND CONTROL RELAY

WJE ALL

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Open these circuit breakers and install safety tags:

OVERHEAD EMERGENCY AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	B10-316	AIR DATA CMPTR-1

UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	12	B10-317	AIR DATA CMPTR -2

(7) Press and hold "PUSH-TO-TEST" switch and observe as follows:

(a) Take-off warning annunciated sequence is as follows:

- 1) Horn "stabilizer",
- 2) Horn "auto brake",
- 3) Horn "brakes",
- 4) Horn "flap",
- 5) Horn "slat", and
- 6) Horn "spoilers".

NOTE: Hold the PUSH-TO-TEST button the entire sequence.

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- (b) Volume level will be high.
- (c) Release PUSH-TO-TEST switch.

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (8) If necessary, make certain following circuit breakers are open:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	26	B1-187	LANDING GEAR WARNING
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT
P	39	B1-827	LEFT PROXIMITY SWITCH CONTROL

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	38	B1-833	CAWS SSRS-2 ALT ALERT
R	39	B1-828	RIGHT PROXIMITY SWITCH CONTROL

UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 417, 419, 421, 423, 865, 869, 871, 872			
K	30	B1-23	LEFT GROUND CONTROL RELAY
WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893			
K	33	B1-23	LEFT GROUND CONTROL RELAY

UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL			
F	17	B10-105	RADIO ALTMETER-1

NOTE: CAWS is CENTRAL AURAL WARNING SYSTEM on some aircraft circuit breaker panels.

- (9) Return aircraft to required configuration.

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CENTRAL AURAL WARNING UNIT - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation and adjustment/test procedures for the aural warning unit.
- B. The aural warning unit is installed on Shelf 3 the forward right radio rack in the electrical/electronics compartment and is accessible through the electrical/electronic equipment door.
- C. Figure 202 depicts the AWU tray pre-load adjustment. Dimension A between rack electrical connector support plate and latch pin is critical at 13.99(±0.30) inches (355.35(±7.62) mm). This tolerance is necessary in order to maintain nominal pre-load and adequate mating of connector pins.

2. Removal/Installation Aural Warning Unit (AWU)

(Figure 201)

A. Remove AWU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

- (2) Press release button at top of handles; pull inner portion of handles out and down to release from keeper locking pins.
- (3) Pull unit straight out of rack until electrical connectors are disengaged from mounting rack connectors and remove unit.

B. Install AWU

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

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LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

- (2) Visually check AWU and mounting rack electrical connectors for loose, dirty, or broken pins and wires.
- (3) Make certain that dimension A on AWU rack is 13.99(±0.30) inches (355.35(±7.62) mm). (Figure 202)
- (4) Slide AWU into rack straight, make certain that connectors are properly aligned and that latch handles engage on keeper pins.
- (5) Close locking handles and press firmly until securely locked in place.
- (6) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	31	B1-831	CAWS OVERSPEED ENG FIRE HORIZ STAB

LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	38	B1-832	CAWS, SSRS-1, LDG GR, T/O, A/P, SP BK, CAB ALT

LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 891-893			
R	37	B1-851	CAWS FAIL ANN

WJE ALL

R	38	B1-833	CAWS SSRS-2 ALT ALERT
---	----	--------	-----------------------

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- C. Adjustment/Test Central Aural Warning Unit

WJE 405, 406, 409, 410, 881, 883, 884

NOTE: On aircraft without voice option, no vocal warning will sound.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

NOTE: Sound level on all warnings will decrease after 3 cycles.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

NOTE: On the H05A0035-10 Central Aural Warning Unit, the sound level on all warnings will not decrease after 3 cycles.

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (1) Rotate TEST SELECT switch on front of AWU to position 1. Press and hold PUSH TO TEST switch and check that aural fire warning bell sounds and vocal annunciation is emitted from speakers located in left and right consoles. Following warnings will be annunciated in any sequence: (Figure 201)

Table 201

Aural Annunciation	Vocal Annunciation
Horn Sound (2700 Hz)	APU Fire
Bell Sound	Fire Left Engine
Bell Sound	Fire Right Engine
NOTE: APU fire warning will silence after 3 cycles. Release PUSH TO TEST switch after one full sequence is completed and check that fire warning silences.	

- (2) Rotate TEST SELECT switch to position 4. Press and hold PUSH TO TEST switch and check for clacker sound and vocal annunciation. Sequence will be as follows:

Table 202

Aural Annunciation	Vocal Annunciation
Clacker Sound	Slat Overspeed
Clacker Sound	Overspeed

Release PUSH TO TEST switch after one full sequence is completed and check that overspeed warning silences.

- (3) Rotate TEST SELECT switch to position 5. Press and hold PUSH TO TEST switch and check for horn sound of 2700 Hz followed by vocal warning of words "Landing Gear". Release PUSH TO TEST switch and check that landing gear warning silences.
- (4) Rotate TEST SELECT switch to position 6. Press and hold PUSH TO TEST switch and check for horn sound of 2700 HZ 2 times per second and vocal annunciation. Sequence will be as follows:

WJE 407, 408, 411, 861-866, 868, 869, 871-881, 883, 891

Table 203

Aural Annunciation	Vocal Annunciation
Horn Sound	Stabilizer
Horn Sound	Autobrake
Horn Sound	Brakes
Horn Sound	Flaps
Horn Sound	Slats
Horn Sound	Spoilers

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WJE 401-404, 412, 414

Table 204

Aural Annunciation	Vocal Annunciation
Horn Sound	Stabilizer
Horn Sound	Autobrake
Horn Sound	Brakes
Horn Sound	Flap
Horn Sound	Slat
Horn Sound	Spoilers

WJE 893

Table 205

Aural Annunciation	Vocal Annunciation
Horn Sound	Stabilizer
Horn Sound	Autobrake (Test only)
Horn Sound	Brakes
Horn Sound	Flap
Horn Sound	Slat
Horn Sound	Spoilers

WJE 405, 406, 409, 410, 884

Table 206

Aural Annunciation	Vocal Annunciation
Horn Sound	Stabilizer
Horn Sound	Autobrake (Test only) (on aircraft 131-132)
Horn Sound	Autobrake (on aircraft 110, 133-137)
Horn Sound	Brakes
Horn Sound	Flap
Horn Sound	Slat
Horn Sound	Spoilers

WJE 415-427, 429

Table 207

Aural Annunciation	Vocal Annunciation
Horn Sound	Stabilizer
Horn Sound	Autobrake (Deactivated)
Horn Sound	Brakes
Horn Sound	Flaps

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WJE 415-427, 429 (Continued)

Table 207 (Continued)

Aural Annunciation	Vocal Annunciation
Horn Sound	Slats
Horn Sound	Spoilers

Release PUSH TO TEST switch after one full sequence is completed and check that takeoff warning is silenced.

WJE 401-406, 409, 410, 412, 414, 873-879, 881, 883, 884, 893

- (5) Rotate TEST SELECT switch to position 7. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second and vocal annunciation. Sequence will be as follows:

Table 208

Aural Annunciation	Vocal Annunciation
Horn Sound	Auto Spoilers
Horn Sound	Slat

NOTE: With the TEST SELECT switch in position 7, vocal warning words "Flap, Stabilizer" and "Brakes" may be annunciated depending on position of aircraft switches.

- (6) Release PUSH TO TEST switch and check that auto spoiler warning silences. Rotate TEST SELECT switch to position 8. Press and hold PUSH TO TEST switch and check for warbler tone of 640 Hz 2 times per second followed by vocal warning of words "Autopilot". Release PUSH TO TEST switch and check that autopilot warning silences.

WJE 407, 408, 411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- (7) Rotate TEST SELECT switch to position 7. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second followed by vocal warning of words "Auto Spoilers". Release PUSH TO TEST switch and check that auto spoiler warning silences.

NOTE: With the TEST SELECT switch in position 7, vocal warning words "Flap, Stabilizer" and "Brakes" may be annunciated depending on position of aircraft switches.

- (8) Rotate TEST SELECT switch to position 8. Press and hold PUSH TO TEST switch and check for warbler tone of 640 Hz 2 times per second followed by vocal warning of words "Autopilot". Release PUSH TO TEST switch and check that auto-pilot warning silences.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (9) Rotate TEST SELECT switch to position 9. Press and hold PUSH TO TEST switch and check for "C" chord tone of 512, 640, and 768 Hz followed by vocal warning of word "Altitude". Release PUSH TO TEST switch and check that altitude advisory warning silences.
- (10) Rotate TEST SELECT switch to position 10. Press and hold PUSH TO TEST switch and check for horn tone of 159 and 94 Hz only. Release PUSH TO TEST switch and check that stabilizer warning silences.
- (11) The word "Stabilizer Motion" is not heard in the above procedure. A check of this voice message is unnecessary if the word "Stabilizer" annunciates while testing in position 6. However, to hear the words "Stabilizer Motion" on the ground, verify autopilot vertical speed operation. (AUTOPILOT, SUBJECT 22-10-00, Page 201)

EFFECTIVITY
WJE ALL

31-51-02

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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893 (Continued)

- (12) Rotate TEST SELECT switch to position 11. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second followed by vocal warning of words "Cabin Altitude". Release PUSH TO TEST switch and check that cabin altitude warning silences.
- (13) Rotate TEST SELECT switch to position 12. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second followed by vocal warning of words "Speed Brake". Release PUSH TO TEST switch and check that speed brake warning silences.
- (14) Rotate TEST SELECT switch to position 13. Press and hold PUSH TO TEST switch and check for chime tone one time. Release PUSH TO TEST switch and check that SELCAL chime silences.
- (15) Rotate TEST SELECT switch to position 14. Press and hold PUSH TO TEST switch and check for chime tone one time. Release PUSH TO TEST switch and check that pilot call chime silences.

WJE 407, 408, 411, 880

- (16) Rotate TEST SELECT switch to position 15. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 5 times per second. Release PUSH TO TEST switch and check that evacuate warning silences.

WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

- (17) Rotate TEST SELECT switch to position 15. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 5 times per second followed by vocal warning of word "Evacuate". Release PUSH TO TEST switch and check that evacuate warning silences.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891, 893

- (18) Rotate TEST SELECT switch to position 24. Press and hold PUSH TO TEST switch and check that BIT LED on AWU front panel illuminates. Release PUSH TO TEST switch and check that BIT LED goes out.
- (19) Place STALL TEST switch on overhead panel to SYS 1 position. Check that captain's and first officer's stick shakers operate, STALL lights on glareshield come on and klaxon sounds off at 400 to 2000 Hz at 3 Hz modulation followed by vocal warning word "Stall".
- (20) Place STALL TEST switch in OFF position. Check that stick shakers and stall warning silences.
- (21) Repeat Paragraph 2.C.(19) and Paragraph 2.C.(20) with STALL TEST switch in SYS 2 position.

WJE 886, 887, 892

D. Adjustment/Test Central Aural Warning Unit

NOTE: Sound level on all warnings will decrease after 3 cycles.

- (1) Rotate TEST SELECT switch on front of AWU to position 1 (Figure 201). Press and hold PUSH TO TEST switch and check that aural fire warning horn and bell sound. Release PUSH TO TEST switch after one full sequence is completed and check that fire warning silences.

NOTE: APU fire warning horn will silence after 3 cycles.

- (2) Rotate TEST SELECT switch to position 4. Press and hold PUSH TO TEST switch and check for clacker sound. Release PUSH TO TEST switch after one full sequence is completed and check that overspeed warning silences.
- (3) Rotate TEST SELECT switch to position 5. Press and hold PUSH TO TEST switch and check for horn sound of 2700 Hz. Release PUSH TO TEST switch and check that landing gear warning silences.

EFFECTIVITY
WJE ALL

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WJE 886, 887, 892 (Continued)

- (4) Rotate TEST SELECT switch to position 6. Press and hold PUSH TO TEST switch and check for horn sound of 2700 HZ 2 times per second. Release PUSH TO TEST switch after one full sequence is completed and check that takeoff warning is silenced.
- (5) Rotate TEST SELECT switch to position 7. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second. Release PUSH TO TEST switch and check that auto spoiler warning silences.
NOTE: With the TEST SWITCH in position 7, Flap, Stabilizer or Brakes horn warnings may be annunciated depending on position of aircraft switches.
- (6) Rotate TEST SELECT switch to position 8. Press and hold PUSH TO TEST switch and check for warbler tone of 640 Hz 2 times per second. Release PUSH TO TEST switch and check that autopilot warning silences.
- (7) Rotate TEST SELECT switch to position 9. Press and hold PUSH TO TEST switch and check for "C" chord tone of 512, 640, and 768 Hz. Release PUSH TO TEST switch and check that altitude advisory warning silences.
- (8) Rotate TEST SELECT switch to position 10. Press and hold PUSH TO TEST switch and check for horn tone of 159 and 94 Hz only. Release PUSH TO TEST switch and check that stabilizer warning silences.
- (9) Rotate TEST SELECT switch to position 11. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second. Release PUSH TO TEST switch and check that cabin altitude warning silences.
- (10) Rotate TEST SELECT switch to position 12. Press and hold PUSH TO TEST switch and check for horn tone of 2700 Hz 2 times per second. Release PUSH TO TEST switch and check that speed brake warning silences.
- (11) Rotate TEST SELECT switch to position 13. Press and hold PUSH TO TEST switch and check for chime tone one time. Release PUSH TO TEST switch and check that SELCAL chime silences.
- (12) Rotate TEST SELECT switch to position 14. Press and hold PUSH TO TEST switch and check for chime tone one time. Release PUSH TO TEST switch and check that pilot call chime silences.
- (13) Rotate TEST SELECT switch to position 24. Press and hold PUSH TO TEST switch and check that BIT LED on AWU front panel illuminates. Release PUSH TO TEST switch and check that BIT LED goes out.
- (14) Place STALL TEST switch on overhead panel to SYS 1 position. Check that captain's and first officer's stick shakers operate, STALL lights on glareshield come on and klaxon sounds off at 400 to 2000 Hz at 3 Hz modulation.
- (15) Place STALL TEST switch in OFF position. Check that stick shakers and stall warning silences.
- (16) Repeat Paragraph 2.D.(14) and Paragraph 2.D.(15) with STALL TEST switch in SYS 2 position.

WJE ALL

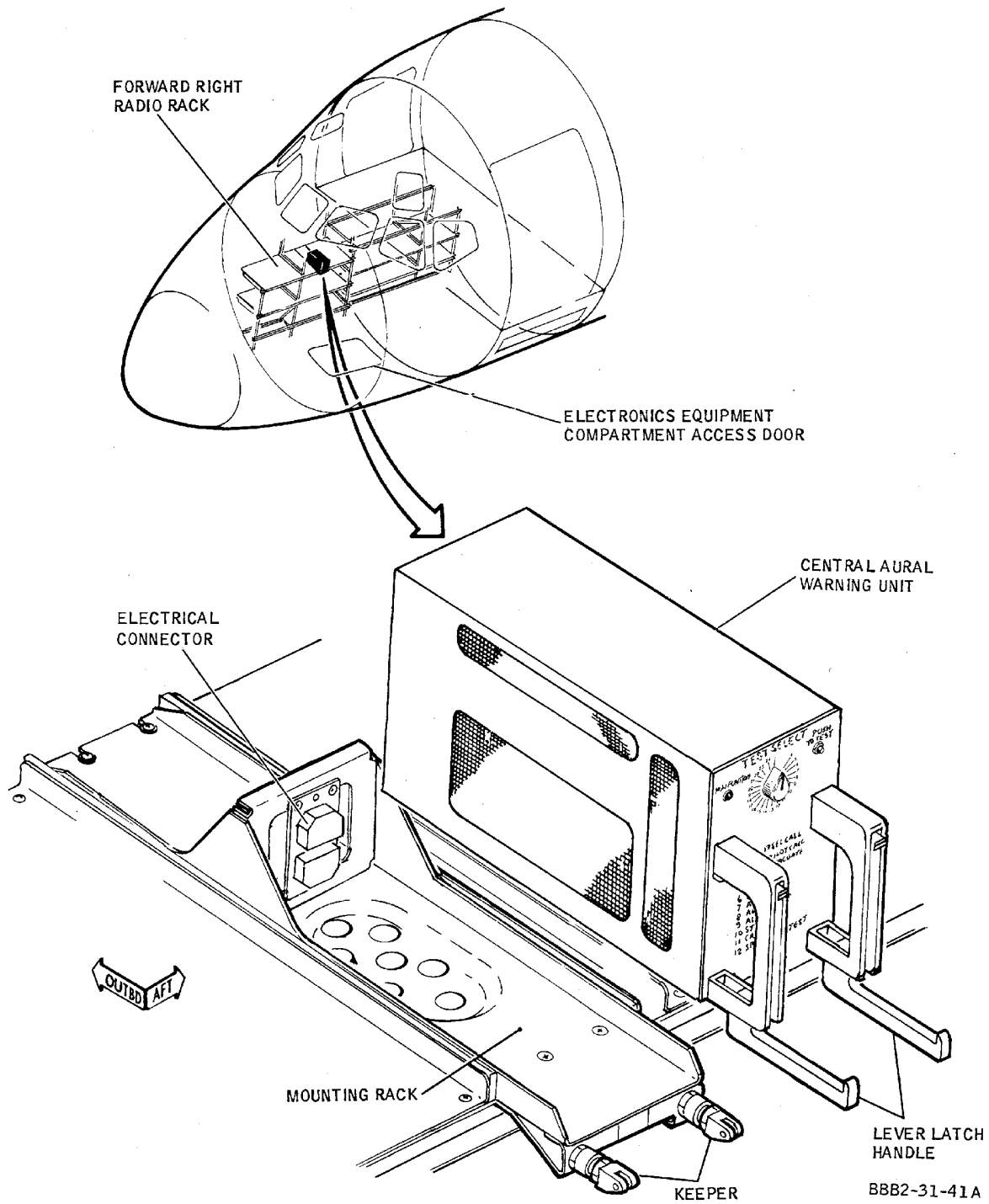
EFFECTIVITY
WJE ALL

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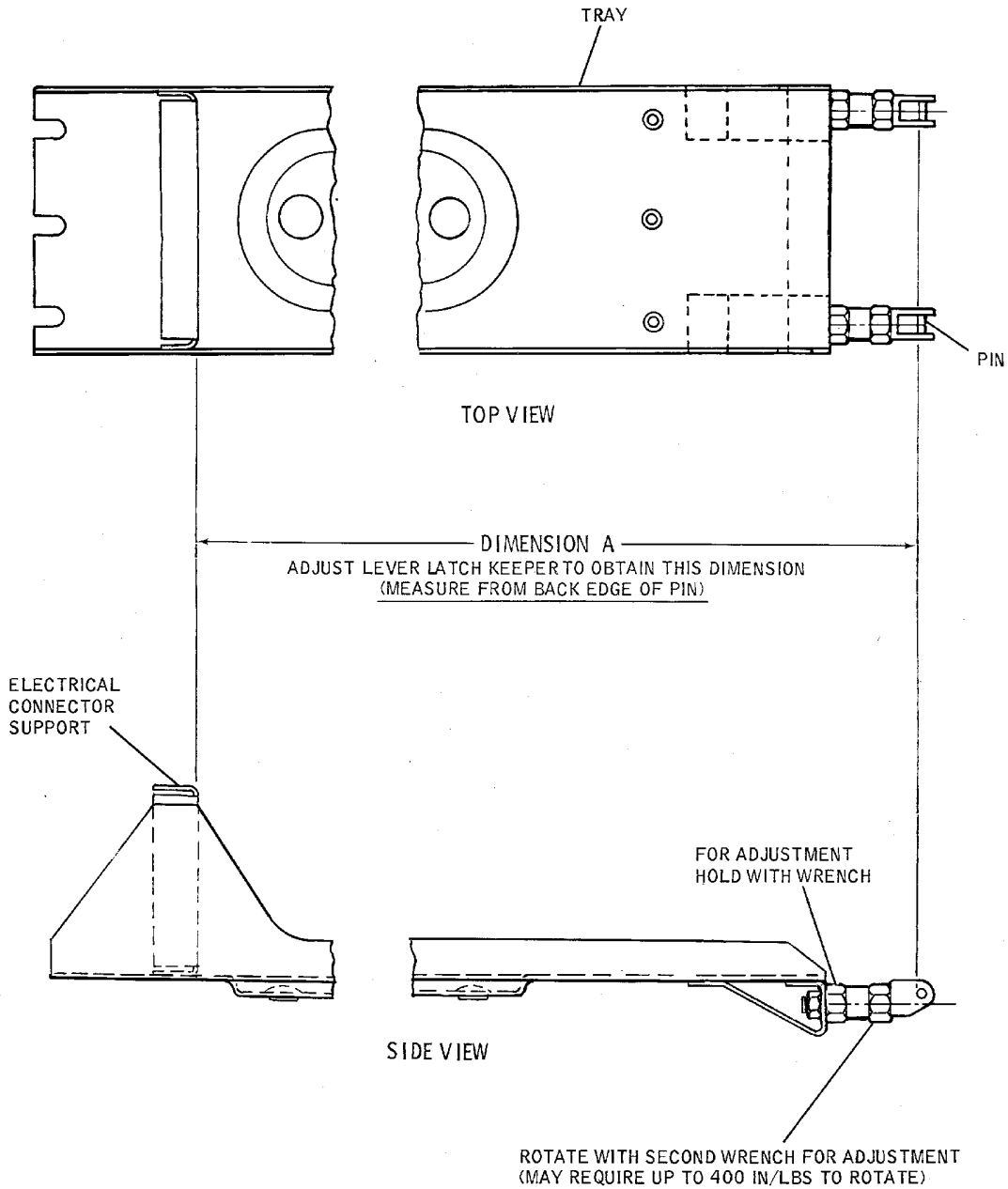


Central Aural Warning Unit -- Removal/Installation
Figure 201/31-51-02-990-801

EFFECTIVITY
WJE ALL

31-51-02

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BBB2-31-38

AWU Tray Latch Pre-Load Adjustment
Figure 202/31-51-02-990-802

EFFECTIVITY
WJE ALL

TP-80MM-WJE

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MULTIFUNCTION DISPLAYS - DESCRIPTION AND OPERATION

1. General

- A. The multifunction displays consist of the Engine Display Panel and the Systems Display Panel. For details on the Engine Display Panel, refer to ENGINE DISPLAY PANEL - DESCRIPTION AND OPERATION, PAGEBLOCK 77-42-00/001.

2. Description

- A. The Systems Display Panel (SDP) is mounted on the center instrument panel, where it can be monitored by the flight crew. The SDP accepts signals from the aircraft sensors and switches. The SDP displays the RAM air temperature (RAT), fuel temperature, engine oil pressure, temperature and quantity, hydraulic oil pressure and quantity, flap position and slats annunciators.
- B. All of the parameters on the SDP, with the exception of flap position and slats discretes, are displayed on seven (7) segment digital readouts with two (2) LED bars per segment. Flap position is displayed on two 40 bar vertical displays with three (3) LEDs per bar and the slats discretes are dual filament bulbs.
- C. The primary function of the SDP is to accept signals from the aircraft sensors and process and display the parameters on a solid state LED display. The SDP will visually indicate any open circuit between aircraft sensors and SDP. The SDP will provide an indication, by use of amber or red annunciator lights, when parameters are outside normal operating limits.
- D. The SDP is equipped with a Built In Test (BIT) to test the digital circuits in the SDP. The BIT can be initiated by pressing the unmarked recessed push switch located in the bottom of the front bezel.

3. Operation

- A. The SDP accepts signals from the aircraft sensors and process and displays the parameters on a solid state LED display. The SDP will indicate to the flight crew any opens in the aircraft sensors. Annunciator lights are located next to the particular parameter where applicable, to provide an indication (amber or red) when the parameters are outside normal operating limits.
- B. For operation of the BIT and Display tests, refer to MULTIFUNCTION DISPLAYS - MAINTENANCE PRACTICES, PAGEBLOCK 31-61-00/201.

EFFECTIVITY

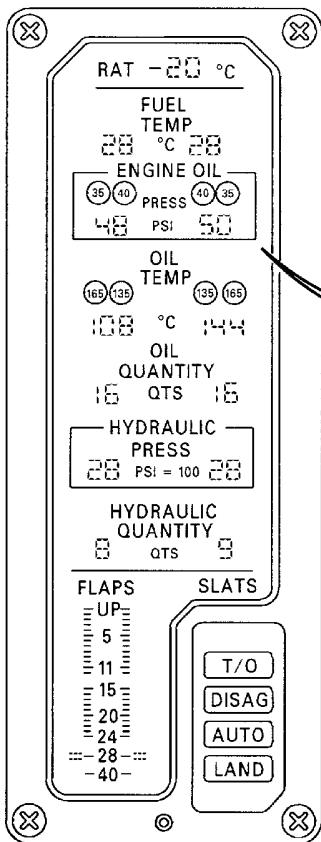
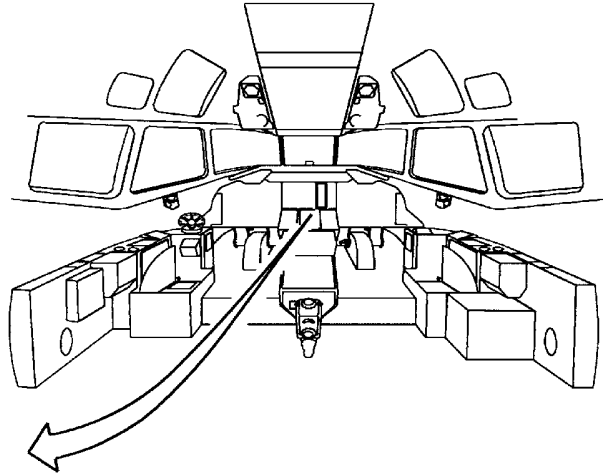
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

TP-80MM-WJE

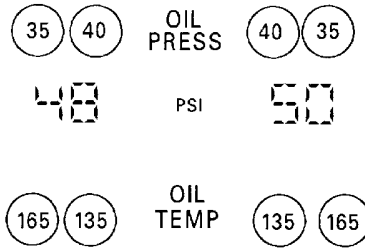
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PRESS/TEMP
ANNUNCIATOR LIGHTS
WITH NORMAL OPERATING LIMITS



CAG(IGDS)

BBB2-31-1000A

**Systems Display Panel
Figure 1/31-61-00-990-801**

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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TP-80MM-WJE

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MULTIFUNCTION DISPLAYS - TROUBLE SHOOTING

1. General

- A. The multifunction displays consist of the Engine Display Panel and the Systems Display Panel. For details on the Engine Display Panel, refer to ENGINE DISPLAY PANEL - DESCRIPTION AND OPERATION, PAGEBLOCK 77-42-00/001.
- B. Trouble Shooting provided in this section are basic procedures for isolating and correcting a faulty Systems Display Panel in the aircraft.
- C. The basic causes of a faulty systems operation are generally faulty sensors, faulty aircraft wiring or faulty Line Replaceable Units (LRUs).
- D. By using the basic check procedures, coordinated with the systems schematic contained in this section, quick isolation and correction of the problem can be accomplished.
- E. The systems display panel is located on the center instrument panel.

2. Trouble Shooting - Multifunction Displays

- A. Trouble Shooting

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification.

Table 101

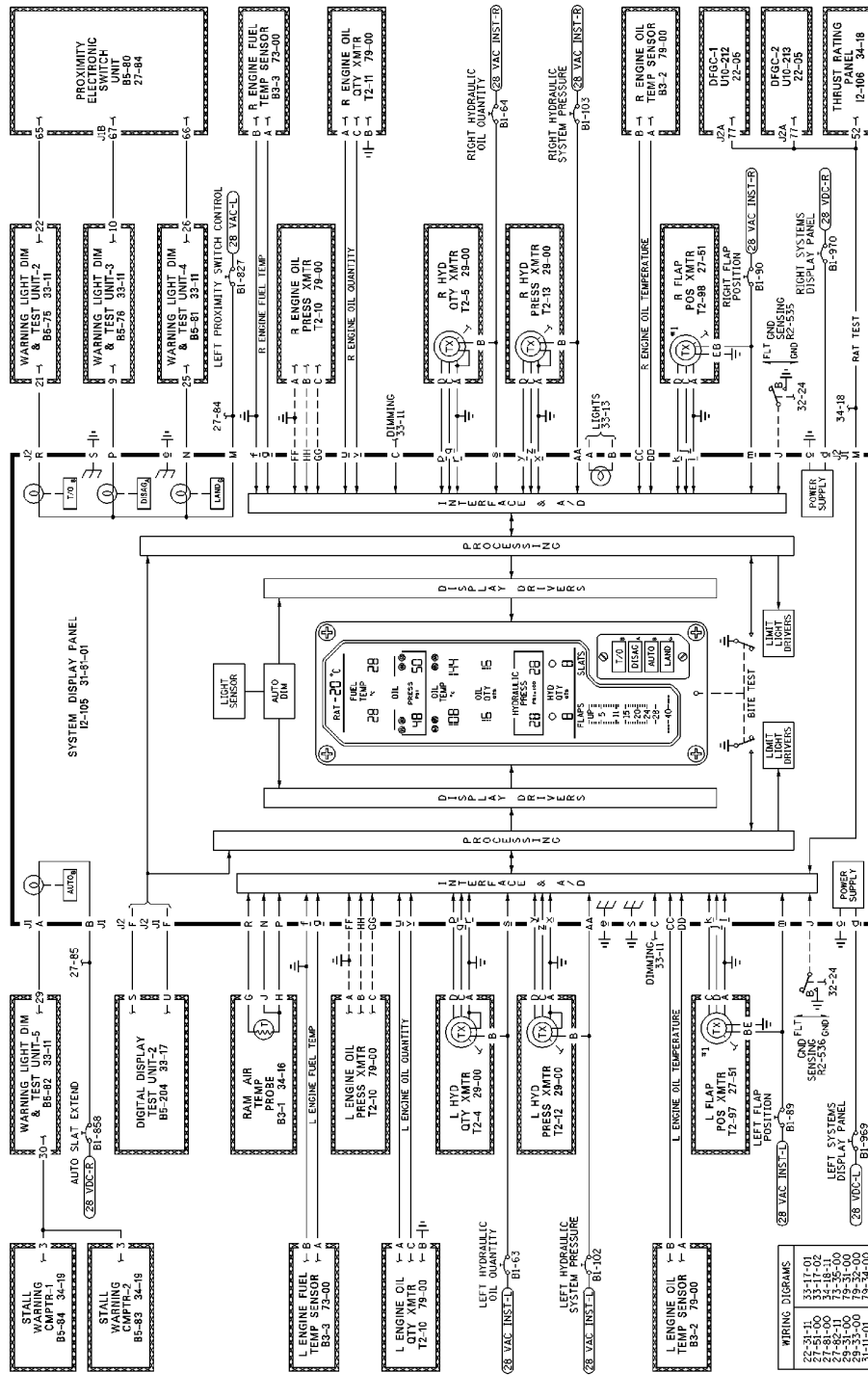
	Procedure	Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRU.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRU.
(2)	Check for proper grounds at LRU. This may require operation of relays in units to contact ground.	Repair or replace wiring. Make sure ground terminals are tight and properly bonded: replace LRU.
(3)	Perform continuity check of aircraft wiring. A hot continuity check may be required to check operation of relays or other associated actuation components to complete continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRU with a known operational unit.	Replace faulty LRU.
(5)	Perform BIT test. Ref. MULTIFUNCTION DISPLAYS - MAINTENANCE PRACTICES, PAGEBLOCK 31-61-00/201.	

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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Systems Display Panel - Trouble Shooting
Figure 101/31-61-00-990-802 (Sheet 1 of 2)

BBB2-31-1001E

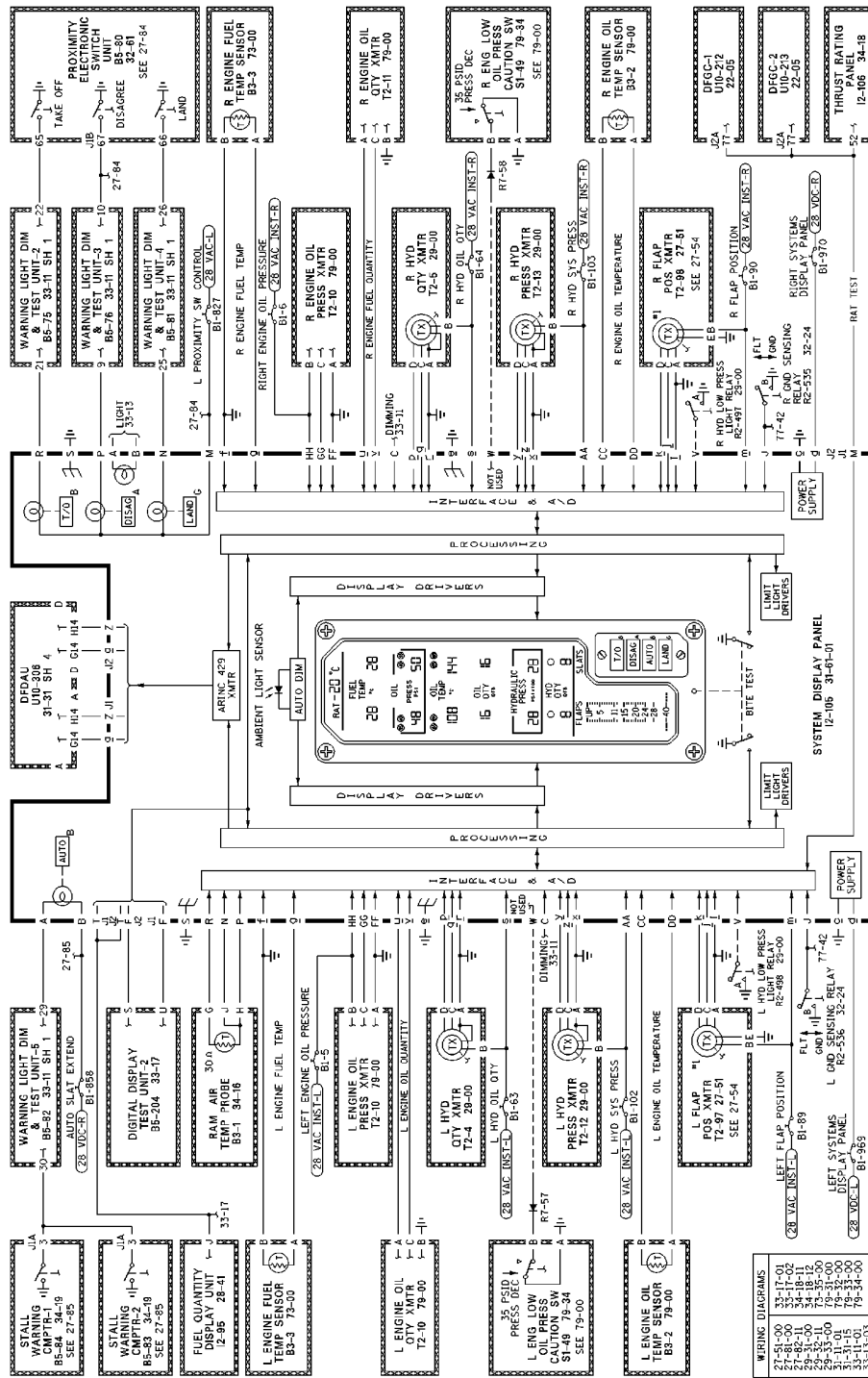
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CAG(IGDS)

EFFECTIVITY
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 886, 887

31-61-00

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Systems Display Panel - Trouble Shooting
Figure 101/31-61-00-990-802 (Sheet 2 of 2)

EFFECTIVITY
WJE 875-879

TP-80MM-WJE

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MULTIFUNCTION DISPLAYS - MAINTENANCE PRACTICES

1. General

- A. The multifunction displays consist of the Engine Display Panel and the Systems Display Panel. For details on the Engine Display Panel, refer to ENGINE DISPLAY PANEL - DESCRIPTION AND OPERATION, PAGEBLOCK 77-42-00/001.
- B. This maintenance practices procedure provides Built-in-test and display tests for the Systems Display Panel. These tests are performed to verify proper operation of the panel. The BIT is also performed automatically upon power-up. However, if no failures are detected, the displays will revert back to normal operation and not display test values.

2. Adjustment/Test Multifunction Displays

- A. Built-In-Test (BIT)
 - (1) Aircraft must be in ground mode.
 - (2) Press unlabeled recessed button located on bottom center bezel of panel.
 - (3) Verify test results to read as follows:

Table 201

PARAMETER	TEST VALUE	ANNUNCIATOR TO BE LIT
RAT	56°C	Not Applicable
FUEL TEMP	65°C	Not Applicable
OIL PRESS	35 psi	RED & AMBER
OIL TEMP	165°C	RED & AMBER
OIL QNTY	18 QTS	Not Applicable
HYD PRESS	2800 psi	Not Applicable
HYD QNTY - LEFT	4 QTS	AMBER
HYD QNTY - RIGHT	4 QTS	AMBER
FLAP POSITION	40°	Not Applicable

- (4) During BIT test, if a failure occurs, fault codes will be indicated on counter displays as follows:

Table 202

FAULT TYPE	CODE
PROM	1-
RAM	2-
Power Monitor	3-
Analogue/Digital Converter	4-
400 Hz Reference	7-
(Manual BIT only)	
<p>NOTE: The fault code will appear on all counters of the left or right side of the indicator, to correspond with the side of failure. The RAT counter will remain blank. The flaps display will also be blank.</p>	

- (5) Fault codes can be cleared by pressing and releasing ANNUN/DIGITAL LTS TEST switch located on forward overhead switch panel.

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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B. Display Test

- (1) Press and hold ANNUN/DIGITAL LTS TEST switch located on forward overhead switch panel.
- (2) RAT and Fuel Temp displays will read -88.
- (3) OIL PRESS, OIL QTY, HYDRAULIC PRESS, and HYD QTY displays will read 88.
- (4) OIL TEMP will read 188.
- (5) Amber caution lights will come on for OIL PRESS, OIL TEMP, and HYD QTY.
- (6) Red warning lights will come on for OIL PRESS and OIL TEMP.
- (7) Flap position display two-bar pointer will move from 0° to 40° at approximately 10° per second.
- (8) All slat annunciators will come on.
- (9) Release ANNUN/DIGITAL LTS TEST switch on forward overhead switch panel.

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 875-879, 886, 887

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SYSTEMS DISPLAY PANEL - MAINTENANCE PRACTICES

1. General

- A. This maintenance practice provides removal/installation instructions for the Systems Display Panel. The Systems Display Panel is mounted in the center instrument panel in the flight compartment.
- B. Maintenance of the Systems Display Panel is limited to removal/installation.
- C. Access to the Electronic Systems Display Panel and connectors is at center instrument panel in the flight compartment.

2. Removal/Installation Electronic Systems Display Panel

- A. Remove Electronic Systems Display Panel (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

CAUTION: EXERCISE CARE WHEN HANDLING ELECTRONIC SYSTEMS DISPLAY PANEL. DO NOT DROP PANEL. INTERNAL DAMAGE COULD RESULT.

- (2) Loosen four captive screws on front of Electronic Systems Display Panel until panel can be removed, and remove panel from instrument panel.

CAUTION: TO PREVENT DAMAGE TO ELECTRICAL CONNECTORS, DO NOT USE ANY TOOL OTHER THAN PLUG PLIERS TO DISCONNECT PLUGS.

- (3) Disconnect electrical connectors.

- B. Install Systems Display Panel (Figure 201)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

- (2) Check Systems Display Panel for dents, cracked glass, or damaged electrical connector pins.

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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CAUTION: TO PREVENT DAMAGE TO ELECTRICAL CONNECTORS, DO NOT USE ANY TOOL OTHER THAN PLUG PLIERS TO CONNECT PLUGS. WHEN CONNECTING PLUGS, DO NOT OVERTIGHTEN.

(3) Connect electrical connectors.

CAUTION: EXERCISE CARE WHEN HANDLING ELECTRONIC SYSTEMS DISPLAY PANEL. DO NOT DROP PANEL. INTERNAL DAMAGE COULD RESULT.

(4) Install Systems Display Panel in instrument panel. Tighten four captive screws.

(5) Remove tools, equipment, loose hardware, and debris from maintenance area.

(6) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

(7) Perform Built-in test (PAGEBLOCK 31-61-00/201).

EFFECTIVITY

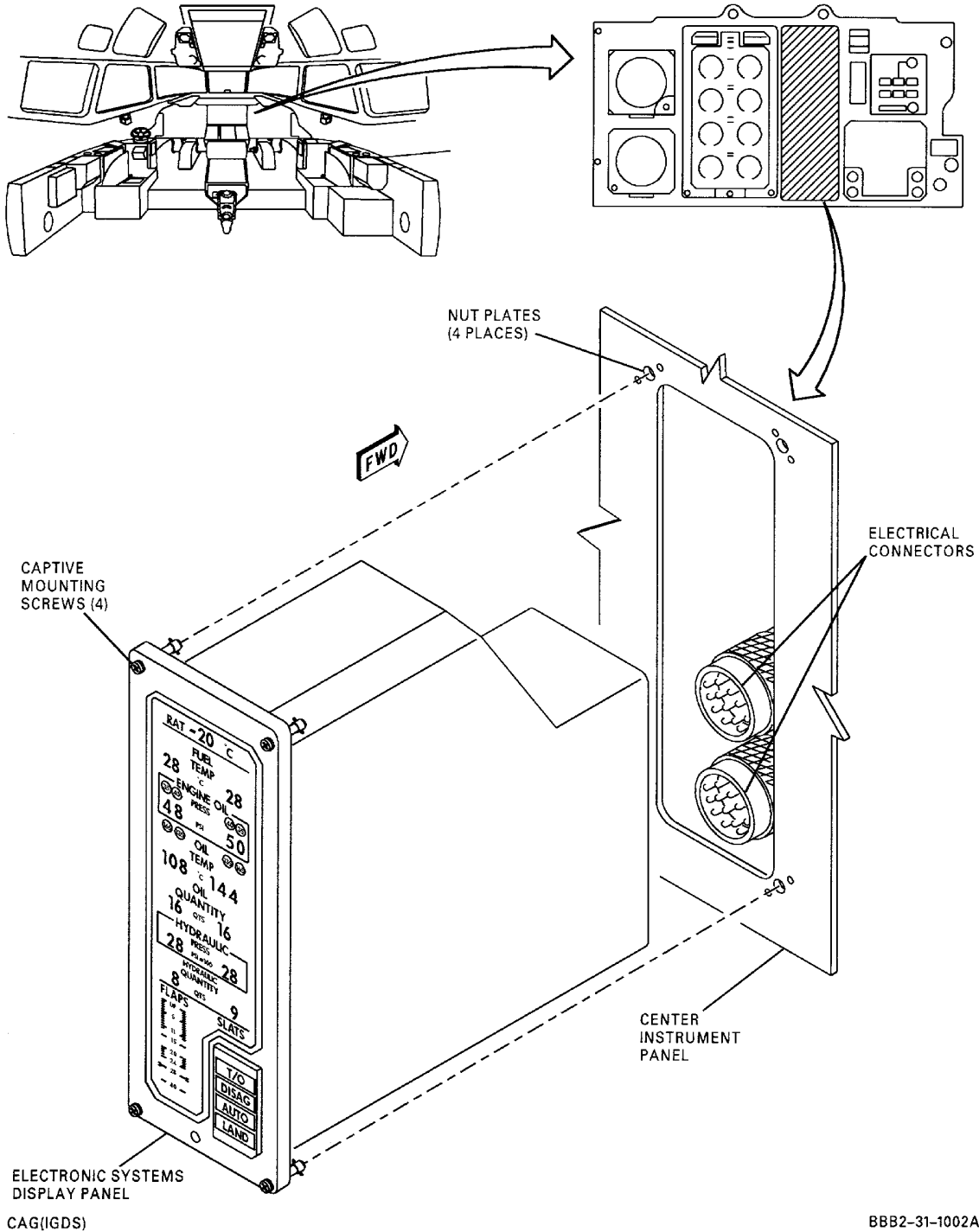
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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**Systems Display Panel -- Removal/Installation
Figure 201/31-61-01-990-801**

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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SYSTEMS DISPLAY PANEL INDICATION LAMP - REMOVAL/INSTALLATION

1. General

- A. This procedure provides removal/installation instruction for the Electronic Systems Display Panel indication lamp. The Electronic Systems Display Panel is mounted in the center instrument panel in the flight compartment.
- B. It is not necessary to remove the Electrical System Control Panel (ESCP) from the center instrument panel to replace a lamp.

2. Removal/Installation Electronic Systems Display Panel Indication Lamp

- A. Remove Lamp (Figure 401)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

- (2) Loosen two screws on front of indication lens and remove indication lens from the ESCP.
- (3) Remove applicable lamp from back of indication lens.

- B. Install Lamp (Figure 401)

WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

- (2) If necessary, loosen the two screws on front of indication lens and remove indication lens from the ESCP.
- (3) Install a new applicable lamp in the back of the indication lens.
- (4) Put the indication lens on the ESCP and tighten the two screws.
- (5) Remove the safety tags and close these circuit breakers:

LOWER EPC, ENGINE - LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
S	34	B1-969	LEFT SYSTEMS DISPLAY PANEL

EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887

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LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	34	B1-970	RIGHT SYSTEMS DISPLAY PANEL

- (6) Perform Built-in test of the ESCP (PAGEBLOCK 31-61-00/201).

EFFECTIVITY

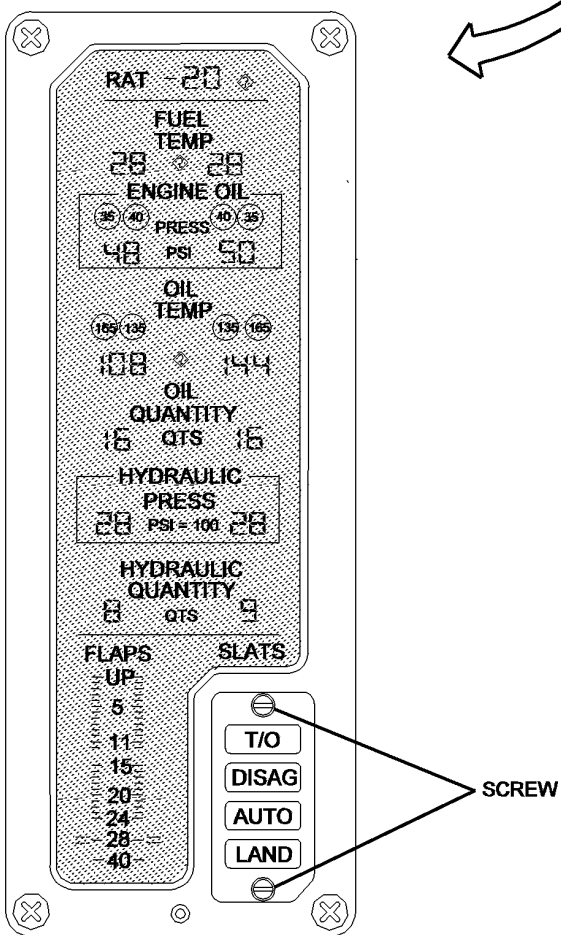
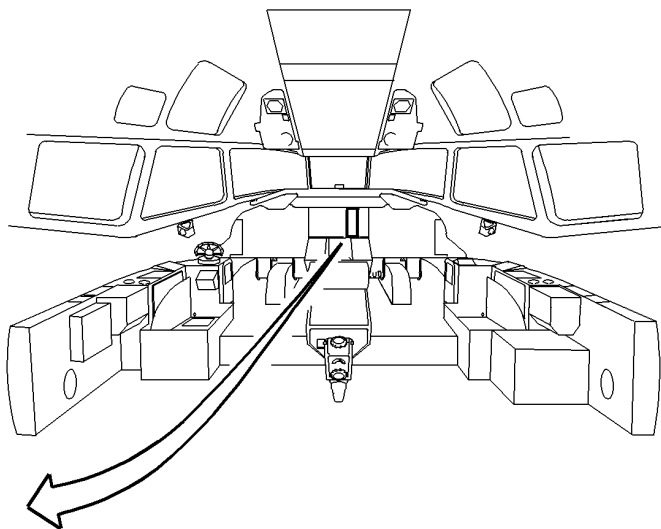
**WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 875-879, 886, 887**

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**Systems Display Panel Indication Lamp - Removal/Installation
Figure 401/31-61-01-990-802**

EFFECTIVITY
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,
423, 863-866, 869, 871, 872, 875-879, 886, 887

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